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Women's motivation to exercise and their sense of well-being.
An investigation into the lived experiences of women in the United Kingdom

Doctoral Thesis, University of Sunderland

Petra Vojnova

WOMEN'S MOTIVATION TO EXERCISE AND THEIR SENSE OF WELL-BEING

An investigation into the lived experiences of women in the United Kingdom

PETRA VOJNOVA

A thesis submitted in partial fulfilment of the requirements of the University of Sunderland for the degree of Professional Doctorate

DProf **October 2023**

Declaration

I declare that this thesis is my work and the material contained herein is my own, other than where explicitly noted in the text. This work has not been submitted as part of any other qualification.

Petra Vojnova
October 2023

Dedication:

Thank you to my life partner Patrick for support and encouragement, and to my daughter Philippa for making me a better person.

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Abstract:

Women's motivation to exercise and their sense of well-being.

Background: For women, motivation to exercise (MTE) and the attitude towards their subjective well-being (SWB) can be subject to many influences. Existing literature shows a vast range of different moderating variables to MTE that women experience dependent on their personal circumstances. Those can be health, physical appearance, or time limitations. Previous studies noted MTE in the general population and athletes-based demographic, in a quantitative capacity and further reported a positive correlation between exercise participation and well-being. Specific motivators and barriers to exercise have been reported as varied based on qualitative data, whilst well-being (WB) studies have largely focused on quantitative data in measurement of WB of populations. SWB has been documented as synonymous with life satisfaction and happiness, and as related to age. However, population survey data tell us little about the correlation between the initial MTE and SWB in female demographic. This study is concerned with that correlation, taking into consideration age as a potential moderator. Based on qualitative data, it further investigates the predominant motivators and barriers to exercise and reports attitude to SWB at different stages of woman's life and reports potential moderating variables.

Methods: Mixed-methods sequential design. Phase 1 quantitative data collected from 146 respondents using BREQ 3 questionnaire, delivered via Qualtrics. Analysis via SPSS assessed relationships between variables: MTE, age, and SWB. Spearman's correlation was used to examine the External, Introjected, Integrated, Identified and Intrinsic motivations and their correlation with SWB. Kruskal-Wallis test was used to test correlation between age and SWB. The leading type of exercise motivation per respondent and its correlation with age was tested by Pearson's Chi-squared test. Phase 2 qualitative data collected from 11 semi-structured interviews was analysed by Thematic analysis, using NVivo 12 software to organize codes and themes.

Results: Results of the quantitative data analysis reported External and Introjected motivation to correlate with lower levels of SWB (r_s = -.201; p = .015), and Intrinsic

motivation with higher levels of SWB (r_s = .170; p = .040). Integrated and Identified motivation did not report significant correlation with SWB. The age of the participants was reported to play a role in levels of SWB (Kruskal-Wallis test, $H_{(3)}$ = 9.553, p < 0.05), but not in leading type of exercise motivation (Pearson's Chi-squared test, X^2(12, N = 146) = 18.043, p = .114). The qualitative phase 2 Thematic analysis reported themes within motivators and barriers to exercise related to physical body (health, body image, access to facilities), mental states (mental health, mindset) and relationships with others (togetherness, parenthood). Although the sample reported that motivators and barriers change throughout a woman's adult life, the moderating variable for both, MTE and SWB, emerged from the Thematic analysis as Self-awareness (SA), and not age as anticipated from the initial quantitative data findings. This study revealed SA as a potential variable but recommends further research. Professional practice might wish to consider implementation of processes which incorporate focus on SA to improve MTE and subsequently create positive impact on women's WB.

Key words: Motivation, Exercise or Physical activity, Well-being, Gender, Age, Self-Determination Theory, Self-awareness, Motivators and Barriers to exercise.

Table of contents:

List of Tables:

List of Figures:

Glossary of abbreviations:

BREQ 3	Behavioural regulation exercise questionnaire
CEP	Centre for economic performance
CSDT	Centre for Self-Determination Theory
EM	Extrinsic motivations
GDP	Gross domestic product
GSS	Government Statistical Service
IHRSA	International Health Racquets and Sportsclub Association
IM	Intrinsic motivations
LSE	London School of Economics
MTE	Motivation to exercise
NVIVO 12	Qualitative research data analysis software
OECD	Organisation for Economic Co-operation and Development
ONS	Office for National Statistics
RQ	Research question
SA	Self-awareness
SAGE	Scientific Advisory Group for Emergencies
SD	Standard deviation
SDT	Self-Determination Theory
SPSS	Statistical software suite
SVS	Subjective Vitality Scale
SWB	Subjective well-being
SWLS	Satisfaction with Life Scale
TA	Thematic analysis
TPB	Theory of Planned Behaviour
UoS	University of Sunderland
WB	Well-being

Chapter 1: Introduction

This chapter introduces the project, together with its rationale and background. It outlines the research, including its aims and objectives, and the proposed justification. The planned methodology and methods are summarised here, including their reasoning. The essential features of the thesis and subsequent chapters are also presented. A summary closes the chapter.

1.1 The story

Many stories begin long before we can write them. Often before we even know of them. The origins of this Professional Doctorate research started forming in 1997. It began with a not-very-self-aware young woman from Eastern Europe, who came to the UK to work and study, and whilst doing so also fell in love with Honey Nut Corn flakes and white sliced bread. After six months on that English staple diet, she noted some undesirable effects on the aesthetics of her body, as well as in her overall energy and sense of overall well-being. And so, she went to the gym. And there she was prescribed a basic exercise routine, which after a while she changed, and then designed her own. She was asked to do the same for others. Over the next quarter of a century, she helped many, mostly female exercisers, and not-so-exercisers. What turned out to be a very rewarding career path, also provided some valuable observation and knowledge. Almost all women clients seemed to have some motivation to change the way they looked and felt via exercise. Their stories in which the motivation, the exercise, the diet, or the lack of energy were grounded, varied

exponentially. Many subscribed to exercise and felt the benefit, and many continued under their own motivation. Many stopped and started or gave up exercise for a period. However, the narrative of those women often stayed the same. It was as if it was not the exercise that made them feel better or was hard to adopt, but their own story that made the difference in their motivators and barriers. A subjective story and mindset seemed to have played a role in their overall approach. This finding based on the anecdotal evidence from the professional practice posed as the grounding problem for this research.

And so, the exercise and well-being practitioner with decades of professional practice experience, the now not-so-young female UK citizen, proposed a doctoral research project. This proposal was further grounded in the combination of academic study within the fields of a BSc in Psychology and a MSc in Strategic Management, professional practice experiences and personal interest. The story gave the impetus to investigate what makes a difference in a woman's experience of exercise motivation and her sense of WB. It formed the basis for the project rationale, aims and objectives.

1.2 Research rationale based on professional practice and research gaps

As a partial fulfilment of the Professional Doctorate programme at the UoS, this project was expected to incorporate practice-based knowledge. That was incorporated in the initial impetus for an investigation addressing a problem related to a workplace. The rationale for this research project was grounded in the researcher's perceived need for more information and knowledge. This related specifically to sports and the exercise environment, the exercise prescription for a female demographic, the sense

of WB that women in the UK experience, their attitude towards it and its meaning. This perception was grounded in professional practice within the field of health and fitness, with largely female clientele, and the anecdotal evidence collected through this work. The author's specific focus has been on exercise prescription and work with a variety of age groups and backgrounds, often dealing with illness or injury-based impaired ability to move. Furthermore, delivery of workshops on WB, inclusive of yoga, Pilates, meditation, breathing techniques, and talks related to overall SWB, and management of employee WB within the corporate sector.

The word exercise as described in the context of professional practice and prescribed exercise within a gym environment is what this project focuses on in terms of dissemination of data. The term exercise is equal to the term physical activity within this project. Further, the word is used within the data collection platforms and is introduced to the participants as encompassing all physical activity.

At this point the author would like to clarify and stress the use of WB (well-being) and SWB (subjective well-being) terminology. Those terms are defined in sections below and their definition is based on existing literature. WB is acknowledged to incorporate SWB as the self-reported state of satisfaction with life. However, WB also incorporates other aspects. Those aspects can also be objective and reported in literature as based on objective indicators, such as financial health. The terms are not interchangeable in this study although closely related, and this project investigates self-reported SWB as reported by the sample. The project's methods reflect that. The term WB is used frequently throughout the study, mainly to refer to existing literature and where it is appropriate. Further, the term WB was used by the respondents in the Phase 2 semi-structured interviews interchangeably with SWB.

As stated above, the female demographic was observed as motivated, but in varied ways. Often, it could be observed that those who adhered to strenuous, very frequent exercise demonstrated a preoccupation with their fitness, but not their higher level of overall WB. Whilst those who exercised moderately and enjoyed the experience, seemed to have a happier demeanour and kinder approach to self. This resonates with reported correlation between intrinsically motivated exercise and adherence (Ryan *et al.,* 1997) and reports of performance motivated exercise as less intrinsically motivated (Hagger and Chatzisarantis, 2007). For an experienced fitness instructor, it could be reasonably easy to recognise a pattern in a woman's narrative and subsequent behaviour. Where barriers to exercise were repeatedly mentioned by a client, it was likely that long-term adoption of exercise was going to be challenging. A likely adherence could be mediated by the exercise instructor's change in approach. However, their level of experience and the drive to help, would also be a mediator in that scenario. To advocate a change in approach would require further education and awareness of all stakeholders of the problem complexity and the need for self-awareness in building of exercise related goals.

Current professional education is largely governed by CIMSPA (Chartered Institute for the Management of Sport and Physical Activity), the chartered professional body of the sport and physical activity sector. To deliver high quality safe experience to sport and exercise participants, Sport England (non-departmental public body) commissioned CIMSPA to lead a project to regulate workforce within sport and physical activity sector, including its support and safeguarding. The current stage of progress of that project sees development of understanding how current practices work to deliver high quality service to all participants in physical activity. This

understanding includes how organisations mitigate risk to workforce, the support to workforce in delivering high quality service to participants, and to examine existing methods in workforce regulation (www.CIMSPA.co.uk). The aim is to aid the workforce to minimise any real or potential risk to participants, and CIMSPA acknowledge the current limitations and need for further knowledge in that regard. The sector workforce provides great benefits to physical and mental health of participants in physical activity and exercise. Workforce related harm does occur, however. Any harm to participant can be perceived as subjective and therefore clear understanding of prevention, workforce role and the implementation of governance of workforce are needed. There are over 500 thousand people working in the sector (www.CIMSPA.co.uk). The professions included in the sector workforce are, according to CIMSPA occupational breakdown: sports coaches, instructors and officials, fitness professionals, sports and leisure assistants, sports and leisure managers, sports players. Those varied professions require wide range of educational outlets to deliver high-quality standardised education, specific to each profession. This study is concerned predominantly with the impact of exercise motivation on well-being of women and so the professions of fitness instructors and personal trainers are those that play a role here. CIMSPA aims to provide policies and guidance to educational bodies that supply direct entry employment qualifications to those professions, as well as further progression course and CPD (continual professional development). The minimum standards of education and further progression as supported by CIMSPA are outlined in the professional standard document for each, Personal Trainer, and Fitness Instructor qualifications (www.CIMSPA.co.uk).

Personal Trainer and Gym Instructor qualifications as set by CIMSPA are within the minimum standards required to provide understanding of “how to work with a broad range of clients with different needs, in different types of environments over a period of time sufficient enough to show lifestyle, health, and fitness improvements” (CIMSPA Professional Standard, Personal Trainer, 2018). The detailed requirements are, of course, vast and varied for both positions and inclusive of wide range of aspects to do with improvement of physical health and fitness of the participant. The CIMSPA standard for those qualifications also covers the process of behaviour change and within skills related to well-being aspects, a Personal Trainer qualification is required to cover “understanding of how modern lifestyles impact upon the health and wellbeing of the client” (CIMSPA Professional Standard, Personal Trainer, 2018). The basic qualifications allow for the membership with CIMSPA, and its continuation is underpinned by CPD requirement each calendar year. The current governance of the sport and physical activity related qualifications and workforce are considerably more comprehensive than 20 years ago. However, improvement based on new knowledge is always of benefit to the related professions and inevitably to the exercise participants,

This project aims to add to the practice-based requirements for both professions in relation to the CPD course which would further benefit from modular additions including knowledge of how exercise participants view their motivation and SWB. Hence, the rationale for this project was based on this combination of reasons, including the need for a better understanding of women's motivation to exercise and the meaning behind their sense of their WB. Furthermore, the author had a personal

interest in gaining more knowledge, leading to a specialised and comprehensive ability in her profession to help women more effectively.

As with any research, a professional doctorate project is largely based on what the existing literature maintains on the subject. In this thesis, chapter 2 is devoted to an extensive literature review, which outlines a variety of WB and exercise motivation related aspects. The paragraph below summarises the argument for the need for further research, outlining what is written in detail in chapter 2.

Theories of motivation have a long tradition in the academic literature (Maslow, 1943; Herzberg, 2008), and lead to more recent attempts to find a unified theory. The idea of 'Flow' (Csikszentmihalyi, 1990) and motivators being aligned with our system of values, is widely cited in more recent academic papers on motivation (Sheldon and Elliot, 1999; Eid and Larsen, 2008; Ryan and Deci, 2018). Csikszentmihalyi (1990) links the concept of Flow to activities which in themselves produce feelings of pleasure and consider extrinsic (EM) and intrinsic (IM) motivational states. Perhaps one of the most significant theories concerning motivation is the SDT, covered extensively by Ryan and Deci (2000). The authors analyse a variety of facets of motivation, including emotional and cognitive processes, and social structures perspectives. They note quality of motivation as a determinant for action, support their view by presenting an extensive literature review and state “motivation concerns energy, direction, persistence and equifinality - all aspects of activation and intention” (Ryan and Deci, 2000, p. 69). In relation to this project and its focus, the theory, and its idea of an increasing level of self-determination, from Amotivation to IM, is considered a suitable fit as a base theory for the research investigation. Amotivation as absent of self-regulation, is represented by a complete lack of motivation. External motivation is

based on external pressures and is followed by low self-regulation in Introjected motivation, represented by often present anxiety or guilt. Identified motivation sits higher on the increasing self-determination continuum and can be represented by such motivators as responsibility for self or achievement of goals. Integrated motivation, whilst not fully self-determined, is internalised motivation, where a person considers an activity such as exercise to be a part of their identity. Intrinsic motivation is fully self-determined and based on joy experienced from an activity. Figure 2 on page 98 provides an illustration of the increasing level of self-determination along the continuum. In this study RQ 1, investigating the potential correlation between MTE and SWB, was set to establish type of MTE utilising an instrument of measure grounded in the SDT. The possibility of any behaviour to be simultaneously extrinsically and intrinsically motivated has been taken into consideration. Furthermore, the term motivator within this study was used as a demonstration of the perceived impetus to adopt physical activity. The term barrier refers in this context to the perceived hinderance to the readiness for a physical activity.

The SDT shows limitation in the consideration for structure and agency as the potential moderators of motivation, however there is a basic psychological needs sub-theory which underpins the SDT and aids the link to agency. Additionally, the Centre for Self-Determination Theory (CSDT) offers repository of research on SDT specifically considering it within the cultural and geo-political scope and structure. Section 2.6 on Agency and Structure further considers this link to SDT.

The theories on MTE consider motivators and barriers for exercise, related to different demographics. The motivators have been reported to include external motivators such as body image (Homan and Tylka, 2014) or health (Schutzer and

Graves, 2004; Brunet *et al.*, 2013), as well as motivators that fall further on the self-determination continuum, up to intrinsic motivators of pleasure and joy (Frederick and Ryan, 1993; Deci, 2012). Preoccupation with body image has been linked to a lowered sense of WB (Homan and Tylka, 2014) and previous research suggests qualitative differences in motivators and barriers in younger and older age groups (Hickey and Mason, 2017). Connectedness with others has been reported to be a significant motivator to exercise (Lovell *et al.*, 2016; Othman *et al.*, 2022) and an influence on the adherence to exercise (Sallis *et al.*, 1987). Furthermore, social support has been determined to affect one's pursuit of WB positively (Lyubomirsky, Sheldon and Schkade, 2005), in aspects such as diet (Wing and Jeffery, 1999). Barriers to exercise have been previously reported to include access to facilities (Brunet *et al.*, 2013), lack of time (Welch *et al.*, 2009), perception or mindset (Bredahl *et al.*, 2015) and parental responsibilities (Hickey and Mason, 2017), amongst many. The documented motivators and barriers to exercise are many. Whilst the literature review did not unearth any gaps per se, this study in part aims to contribute new or confirmatory additions to existing accounts of motivators and barriers as facilitators of exercise behaviours. This study will address this in RQ 2.

The demographic specifications included in research on exercise motivation include different age groups (Cohen-Mansfield, Marx and Guralnik, 2003; Hickey and Mason, 2017) and gender-focused research (Silva *et al.*, 2010; Hickey and Mason, 2017; Othman *et al.*, 2022). Adaptations to exercise, based on ethnic background, have also been stated (Blanchard *et al.*, 2003; Papadakis *et al.*, 2012; Sheikh and Sharma, 2014). Notably, the influence of ethnic background on the sense of SWB is yet to be determined (Newton (2007). Other literature documents the age-affected

sense of WB (Sheldon and Lyubomirsky, 2007; Argyle, 2001). This study was designed to collect data on age, gender, and ethnic background, and incorporate those into the inferential statistics addressing RQs with a quantitative aspect. The above is an outline on the literature review into demographic questions, linked to the topic of research. Section 1.6 outlines the choice of related methods. The RQ 3 investigates the correlation between MTE and age, followed by RQ 4 focused on SWB and age.

The literature on WB dates back as far as 300 BC (Aristotle, 2012) and throughout the centuries largely consists of the search for a definition. A unified definition seemed to present a challenge (Veenhoven, 2007; Dolan, Peasgood and White, 2008), perhaps because there was not enough substantial evidence for WB as a unified experience (Dodge *et al.*, 2012; Campbell, 2016). This project focuses on the subjective, self-reported experiences of women in relation to their WB, and as such the term subjective well-being was explored in the literature (Veenhoven, 2007; OECD, 2013). The adopted definition of SWB in this context is ‘the extent to which a person believes or feels that his or her life is going well’ (Diener *et al.*, 2018, p. 2). At times the term SWB is noted as synonymous with happiness or life satisfaction (Dolan, Peasgood and White, 2008; Aristotle, 2012). The term WB as reported by existing literature seems to have several combined subjective and objective components (Forgeard *et al.*, 2011; Kopsov, 2019). Additionally, it is stated that most of us are motivated to become happier (Ryan and Deci, 2000; Lyubomirsky and Layous, 2013). The review of the above informed the decision to use the wording 'self-reported well-being' in this study and for the purpose of this study interchangeably with SWB.

Dodge *et al.* (2012), who concluded that when resources and challenges are in balance, a sense of WB occurs, essentially outline the same theory as Csikszentmihalyi (1990) in Flow. Psychological aspects of WB have been further documented by Ryan and Deci (2000) and Ryff (1989). Mental WB links to the overall sense of WB via physical exercise, as a positively affecting agent (Ryan and Frederick, 1997; Briki, 2018; Nezlek *et al.*, 2018). Self-compassion as an affective agent of mental WB (Karanika and Hogg, 2016), as well as mindfulness as a practice with a positive influence on mental WB (Wootton and Horne, 2015; Klussman *et al.*, 2020), have also been reported. Moreover, Fox (1997) proposed the notion of self-concept as a person's perception of their physical, mental, and emotional self. Fox's publication presents a composition of research on the physical self and aspects related to WB. The literature covering WB research is comprehensive, including a variety of demographic aspects and components affecting WB, including reports on older age demographics showing higher levels of WB when self-reported (Diener and Suh, 2003; Argyle, 2001). The correlation of MTE and SWB, within the female demographic in the UK, seemed to have not been addressed yet at the time of this study. However, there is documented research on exercise having positive effects on WB (Ryan and Frederick, 1997; Briki, 2018; Nezlek *et al.*, 2018), and eudemonic and hedonic aspects on motivation and WB (Anić and Tončić, 2013), albeit with a different focus and methods to this study. Maltby and Day (2001) investigated relationship between exercise motives and psychological well-being. Briki (2016) was also interested in this topic, but with a focus on alternative mediators (trait self-control in mixed-gender study). The design of this study, as implemented via mixed-methods and including a female demographic, was largely original in that it aimed to add new

supporting material to existing literature and present any new knowledge. However, its scope was limited and not anticipated to reveal any significant new facts.

The literature review showed that often publications or authors that address WB also document exercise, and motivation, as if coming full circle. WB, termed as vitality, aliveness, and positive energy, was linked by Ryan and Frederick (1997) to positive effects on self-motivation. The paper gave impetus for further investigation of motivation and the SDT (Ryan and Deci, 2000). The Centre for Self-Determination Theory (CSDT) offers literature which developed the Subjective Vitality Scale (SVS) as a suitable measure of subjective WB. In line of the above, this project explored the use of the instrument of measure offered by CSDT. However, the pilot study determined that its use was not suitable within the UK-based demographic, due to the use of American English terminology.

The literature on WB research gave this study sufficient background knowledge on what has been investigated already. The gap that this project then set out to address was incorporated into the WB components of the RQs. Namely, WB in correlation with MTE, but also in the RQs with a qualitative aspect, which in phase 2 asked how women view their SWB.

The paragraphs above outline the vast scope of literature addressing WB and MTE from a variety of angles. The above has formed a basis to this study, in combination with the author's professional interest, resulting in a proposal to research the potential correlation of MTE and SWB. Exploring how MTE is experienced in relation to SWB could gain deeper understanding of what could benefit the further education of exercise professionals. There is existing literature documenting intrinsically motivated activity, correlating with a higher level of WB (Sheldon *et al.*,

2004) and negatively perceived motivators, to have a negative influence on WB (Dawson and Thornberry, 2018). The closest to this study was Briki (2016), with a focus on MTE and WB, however with an alternative mediator and population sample. Specifically in the context of the interest of this study, and its focus on the variables influencing MTE and SWB in the UK female demographic as based on professional practice evidence, sufficient literature has not been identified. The gap in the current evidence was found to be in the combination of a gender-specific sample, and the possible correlation between MTE and SWB.

SDT and the continuum of self-determined motivation have been noted above in relation to this project. To summarise, SDT and exercise have been investigated in studies considering exercise adherence and intervention (Silva *et al.*, 2010; Klain *et al.*, 2015). This study, to add new knowledge and expand existing findings, was set up to use the SDT-based instrument of measure to determine MTE and test for a potential correlation with levels of WB. The Behavioural Regulation Exercise Questionnaire 3 (BREQ 3) was suitable for that purpose and was tested in the Pilot study as such. Further literature reports on exercise and age-related aspects as tested by versions of BREQ (Markland and Tobin, 2010; McMichan, Gibson and Rowe, 2017). However, this is not done as a comparison of age groups within a single gender. Therefore, this study based on the above gap proposed to examine the problem. Furthermore, this is based in the broader context on the reported correlation of exercise and positive effects on WB (Ryan and Frederick, 1997; Briki, 2018; Nezlek *et al.*, 2018). Both topics, MTE (Hickey and Mason, 2017; Steltenpohl *et al.*, 2019) and WB (Argyle, 2001), have also been researched in relation to different age groups. The research into MTE to date has largely used quantitative methods of data collection

(Briki, 2018; Weman Josefsson, Johnson and Lindwall, 2018) and the WB studies have equally not offered rich narrative data (Dolan, Peasgood and White, 2008). Previous research often set variables such that MTE type and exercise itself served as predictors of adherence to exercise (Ríos, Cubedo and Ríos, 2013) or effects on WB (Ryan and Frederick, 1997). The above outlines what has been done so far and how this study proposed and aimed to contribute supporting and new knowledge. It also provides background to proposed methods, in that the mixed-methods design allows for further validation of data and reliability of findings, more so than a single method.

The review of the academic literature on the topic of MTE and SWB within a female demographic and within varied age groups has led, in conjunction with the initial professional interest, to the aims and objectives of this project, that were established as follows.

1.3 Research problem, project aims and objectives

The section above outlines what has been reported in professional practice and in the existing literature. The research problem, as grounded in both, was set to determine whether MTE correlates with SWB in women in the UK, and if age is a significant moderating variable in MTE and SWB. Based on existing literature which documents the positive effect of exercise on WB (Ryan and Frederick, 1997; Briki, 2018; Nezlek *et al.*, 2018), the main motivators and barriers to exercise were also examined.

The aims of this project were set to assess the correlation between a woman's MTE and her sense of SWB and consider main motivators and barriers to exercise.

The aims as reflected in the objectives and research questions (RQs) and hypotheses (section 1.5 and Appendix 12) were also to ascertain whether age affects the quality of MTE as defined by SDT, or the reported levels of SWB. Additionally, reports were collected on how women view their SWB and if their attitude changed with age. Moreover, the study also aimed to contribute to existing academic literature and to the field of professional practice, by subsequent dissemination of findings post-project completion and via a suitable platform.

The objectives were to answer the RQs, which deal with the subject of the research aims. To do so effectively, suitable methodology and methods were selected. Hypotheses were identified in relation to each RQ and addressed in a relevant phase of the project. This took shape via mixed-methods design, where the quantitative phase 1 was to determine trends in different types of MTE and the correlation with self-reported SWB in women in the UK, with age as an additional moderating variable. The qualitative phase 2 was set to identify some of the main motivators and barriers to exercise from the perspective of the participants' rich narrative. It also aimed to ascertain their attitude towards SWB, including age related changes, to enhance the scope of the phase 1 data. As the RQs and hypotheses reflected the aims of the project, those in turn informed the methods of data collection to fulfil the objective of effective use of methodologies.

The next section introduces RQs and the associated hypotheses.

1.4 Research questions, hypotheses and methods of analysis

The RQs and hypotheses in this study were as follows:

RQ 1. What is the relationship between the motivation for exercise and overall subjective well-being in women? (Quantitative)

Hypothesis 1.1: Reported external motivation and introjected motivation to exercise correlate with lower reported subjective well-being in women.

Hypothesis 1.2: Reported identified and integrated motivation to exercise correlate with a higher reported level of subjective well-being in women.

Hypothesis 1.3: Reported intrinsic motivation to exercise correlates with higher subjective well-being in women.

All three hypotheses have been tested by Spearman's correlation to reflect non-parametric data.

RQ 2. What are the common motivators and the barriers to exercise for women? (Qualitative)

Hypothesis 2.1: Motivators to exercise vary throughout woman's life.

Hypothesis 2.2: Barriers to the motivation to exercise vary throughout woman's life.

Thematic analysis (TA) was used to address the hypotheses with a qualitative aspect. statement concerning the problem to be investigated. The hypotheses with a qualitative aspect were used as statements and verified by analysis (Barroga and Matanguihan, 2022; Chigbu, 2019).

RQ 3. Does a woman's age play a role in the reported dominant type of motivation to exercise? (Quantitative)

Hypothesis 3.1: Age plays a role in reported type of motivation to exercise.

The hypotheses were tested using Pearson's Chi-squared test, incorporating age groups and highest ranked type of motivation per participant as categorical variables.

RQ 4. Does a woman's age play a role in the reported level of well-being? (Quantitative and Qualitative)

Hypothesis 4.1: Age plays a role in reported levels of well-being.

Hypothesis 4.2: A woman's attitude towards her well-being changes with age.

To test Hypothesis 4.1 and assess how self-reported WB differs across the age groups a Kruskal-Wallis test was run, and further post-hoc analysis was run to determine which age groups significantly differed from each other.

Hypothesis 4.2 was addressed during qualitative analysis using TA.

1.5 Introduction of project's methodology

To address the aims and objectives of this study, suitable methodology and methods were carefully selected, and resulted in a mixed-methods project design. The quantitative phase 1 was anticipated to establish trends and the second, qualitative, phase to inform those trends. The underlying philosophies and perspectives considering the project aims were:

Philosophy: Pragmatism, with a wider Positivist approach to the RQs and hypotheses being tested by the data findings

Approach: Deductive, Explanatory phase 1; informed by phase 2, which followed the Inductive Exploratory approach

Choice: Mixed-methods sequential design (phase 1 followed by phase 2)

Strategy: 1. quantitative phase (questionnaire)

2. qualitative phase (semi-structured interviews)

Time horizon: Cross-sectional

Sample: Female respondents over the age of 18, from varied ethnic backgrounds, residing in the United Kingdom. The population sample size was based on previous research (Markland, 2009; Lovell *et al.*, 2016).

The ethical approval (Appendix A) for this study was awarded by the UoS, based on the specifications of the study as outlined above. The project aimed to investigate the topic, using a sample of adult women residing in the UK, all of whom were provided with the Participant Information Sheet (Appendices 2 and 7) and who completed the Consent form for both phases of the data collection (Appendices 3 and 8). Suitable consideration was given throughout the project to validity and reliability. Furthermore, the generalisability and transferability of the project were considered during the design, data collection and analysis.

The mixed-methods design was considered a successful choice and provided the desired answers. The Methodology chapter, chapter 3, provides a detailed outline of the research specifications, related to methodology and methods.

1.6 Project justification and significance

Section 1.2 provides an outline of the project's rationale, as grounded in professional practice and existing literature. The justification of the project is based on both. The professional practice, according to the author, reports impaired

effectiveness of exercise prescription to the female demographic in the UK, and the varied adoption and adherence to exercise by that demographic. Hence, the potential for improvement, as based on new knowledge of the effects of MTE on SWB in women, their motivators and barriers to exercise, and changes associated with age.

Existing literature documents positive effects of exercise on WB (Ryan and Frederick, 1997; Briki, 2018; Nezlek *et al.*, 2018), varied motivators and barriers to exercise within the female demographic (Brunet *et al.*, 2013; Othman *et al.*, 2022), as well as ethnicity and the related exercise relationship (Blanchard *et al,* 2003; Sheikh and Sharma, 2014). WB has also been researched in relation to productivity (Johnson, Robertson and Cooper, 2018), wealth and materialism (Ahuvia and Wong, 1995; Sheldon and Lyubomirsky, 2007), and mental health (Ryan and Deci, 2000; Dodge *et al.*, 2012). Furthermore, the methods utilised have been validated by previous research into MTE in case of the BREQ 3 (Cid *et al.*, 2018; Mullan, Olivier and Thogersen-Ntoumani, 2021; Cavicchiolo *et al.*, 2022) and in qualitative research on motivators and barriers to exercise (Bredahl et al., 2015; Othman *et al.*, 2022). Age as a variable has been reported in relation to exercise (Hickey and Mason, 2017) and in relation to well-being (Argyle, 2001). The significance of this project sits amongst the above reports, in its aim to offer knowledge on the correlation between MTE and SWB in women in the UK, with age as a variable affecting MTE and WB. The methods used are not innovative and have been validated by previous research. However, the mixed-methods adoption in the investigation into the research problem also contributed to the significance of this project in its effective delivery of results. Section 1.8 further details the intended contribution of the project.

1.7 Thesis structure

This study write-up follows a regular thesis structure with, in most part, a chronological order of the process.

Chapter 2, Literature Review, provides the reader with a detailed outline of existing literature on the studied topic. The chapter is divided into sections which gather existing knowledge on specific subjects related to exercise, motivation, and WB. The Literature Review were in main part completed in 2019, as the first of the chapters written, and amended during the process of the study. Some of the subjects that were reviewed in literature have not been directly investigated in the data collection which took place in 2021. The literature review provides relevant background for this study.

Chapter 3, Research Methodology, comprises of sections demonstrating existing literature on methods and justification of the project, in line with research that has been done already. It outlines the philosophical stance, rationale, design, and ethical considerations. The rest of the chapter is further divided into two main sections devoted to the quantitative phase 1 and qualitative phase 2, the sample, data collection, management, and analysis of data preparation.

Chapter 4, Results, provides details of the findings from the data analysis. Starting with the quantitative data, data screening and instrument testing, followed by descriptive statistics and inferential statistical testing, in the order of the RQs and hypotheses. The second half of the chapter is devoted to the qualitative data, data screening and coding, followed by emergent themes which are presented in the order

of RQs, for the a priori code-based themes and followed by in vivo code-based themes.

Chapter 5, Discussion, provides the author's interpretation of the findings, their meaning and value in line with RQs, as well as synthesis of the findings with key concepts from the Literature review. The chapter is divided into sections which follow the order of the RQs. Therefore, the quantitative and the qualitative data findings are mixed to provide answers to the RQs.

Chapter 6, Conclusion, provides a condensed version of the results interpretation, considering all the previous chapters. These include the meaning and value of the project to existing literature and professional practice, the aims of which are outlined in the next section, the project limitations, and recommendations for future research.

1.8 Intended contribution to professional practice and research

The project significance lies in both the contributions to existing literature and to professional practice.

As noted in the section on rationale based on literature review, some gaps were identified in existing research. This study proposed to address some of the gaps, by adding new knowledge based on data derived from the mixed-methods design. The contribution was anticipated to be in the correlation between MTE and SWB, with age as a variable, in women in the UK. Whilst previous literature documented at length the positive correlation between exercise and WB, and professional practice knowledge also reflected this, there is still scope to better understanding as to what makes the

difference for women in their MTE and their view of their SWB. This project's rationale was partly built on practice-based knowledge, therefore the dissemination of findings into professional practice holds important value and significance. The Conclusion chapter provides a detailed proposal on the dissemination of findings, and in that, the meaning behind the study's contribution to practice.

1.9 Chapter summary

This chapter provided the preliminary specifications of this project and forms a basis for the following chapters. The aims and objectives have been stated, based on which were all RQs and the associated hypotheses. Section 1.7 gave the structure of the thesis to allow the reader to anticipate the rest of the material. Moreover, the gaps in literature have been summarised and are detailed in Chapter 2. These provide the grounding for the project rationale, together with professional practice-based knowledge. The Conclusion chapter presents the reader with the summarised discussion of the findings and follows this chapter as an answer to all questions outlined here, including study limitations and future research recommendations.

Chapter 2: Literature Review

2.1 Introduction

The objective of this literature review is to evaluate some of the existing academic literature on WB, SWB, motivation to exercise, and associated aspects of those critically. The chapter refers to historical perspectives in research, as well as the current state of peer reviewed articles on the topic, and some recent contributions of authors in the field. The assessed literature is divided according to its relationship to the themes within this project. The review provides the basis for the project's RQs; therefore the literature is examined from the perspective of relatedness to the proposed research and its justification. The aim is to review literature critically, to provide a context and theoretical framework for the research (Saunders, Lewis and Thornhill, 2016). It combines integrative and systematic ways of reviewing literature.

The aims of this study have been outlined in Chapter 1. As a reminder to the reader, the aims were to establish the common denominators of MTE and self-reported WB, when consciously making decisions the consequences of which influence SWB. Furthermore, the research focused on detailed qualitative accounts from participants, which contribute to the understanding of the cognitive reasoning and emotional processing affecting their actions, and behaviour related to their motivation to exercise.

The proposed RQs, as based on the gaps identified by the review of the literature and on what is known from professional practice, aimed to provide answers which would enhance our understanding of the topic. Moreover, the aim was to add to the existing

literature by the depiction of the actual lived experiences of people deliberating their WB. The chapter assesses what has been done to date on the topic of WB and motivation to exercise, including theories and philosophical stances.

Overall, the Literature Review explores the topic in relation to the proposed research, but also to offer the reader wider information about the world of motivation and WB in the academic sense, in real life and from the perspective of professional practice. It provides some existing definitions of WB and motivation, which are followed by sections exploring the key points and their relationship to each other. The conclusion summarises the relatedness of the existing literature to the proposed research, the gaps identified in the existing research and the contribution this project and future research would offer to the existing literature.

Some consideration is also given to existing ways of measuring levels of WB and motivation (Section 2.7.1). This is to establish the basis for the proposed mixed-methods approach, using the quantitative method of a survey questionnaire and the qualitative method of semi-structured interviews. The following Methodology Chapter, chapter 3, provides a detailed account of the practical application of the mixed methods utilised by this project. Within this, the quantitative data aim to establish trends in respondents' exercise behaviours and the qualitative data to provide information about the rich, personal experiences of the participants and their MTE and WB behaviours.

To establish wider context of the project topic, some of the sections within this Literature Review might appear to the reader as not directly related to the eventual investigation. Where a section depicts wider context or reciprocal relationships segment related to WB, rather than directly investigated, it is pointed out for clarity.

2.2 Definitions of well-being and motivation

WB has been a subject of interest in philosophies, popular culture, and academic publications for a very long time, especially in last two decades. In 1980 the number of peer reviewed articles was 130, compared to more than 1000 a month in recent times (Kopsov, 2019), and the existing literature approaches the subject from a variety of angles and research methods (Mogilner, 2010; Chopra, 2015; Johnson, Robertson and Cooper, 2018). The extensive interest in the topic is reflected in the variety of definitions of WB, which in most accounts refer to the level of health and feelings of happiness (Csikszentmihalyi, 1990; Lyubomirsky, King and Diener, 2005; Kahneman and Deaton, 2010; Rath, Harter and Harter, 2010; Aristotle, 2012).

The work of authors that had an interest in the topic of WB range from the 4th century BC to the more significant boom of the 1980s, and to the present-day. Their definitions appear to be sufficiently established in the field, to be used and referenced widely. Many texts agree that whilst the term WB is broadly used in popular as well as academic literature, the definition seems imprecise at best (Veenhoven, 2007; Dolan, Peasgood and White, 2008). At times it is used synonymously with happiness or life satisfaction (Aristotle, 2012), and in that context the concept encompasses subjective and objective components (Veenhoven, 2007; Dolan, Peasgood and White, 2008; Rath, Harter and Harter, 2010; Kopsov, 2019). Dodge *et al.* (2012) devoted their paper to the development of the definition of WB and stated many references to previous research in the field, specifically in relation to the defining aspects of what WB means. In this aspect the publication seems a reliable source to attempt the definition of WB. However, whilst the authors acknowledge the challenges presented by the

terminology and interchangeability of the word ‘well-being’ versus ‘quality of life’ or ‘happiness’, the issue is not addressed. The fact that this problem goes unresolved leaves the term WB conceptually imprecise. Dodge *et al.* (2012) offer a dynamic definition of WB, which proposes long-term WB as a metaphorical see-saw (based on the idea presented by Csikszentmihalyi, 2003) where physical, mental, and emotional challenges must be balanced with physical, mental and emotional resources. This definition provides not only measurement potential, but also offers cues to self-management of WB.

Additionally, the work of Pavot and Diener (1993) and Diener *et al.* (2009) has greatly contributed to the topic of WB, especially around the measuring of this. Their working definition of subjective WB is that it comprises people’s evaluation, both affective and cognitive, of their lives. Once again, the work here acknowledges that somewhat incomplete definitions and the complexity of this very ‘experiential’ narrow field means that inevitably conclusions drawn from data are vulnerable to misinterpretation.

For this project the definition of WB is grounded in the notion of contentment based on the subjective view of personal physical, mental, and emotional welfare.
And on that basis the sample of population in this study is asked to self-assess aspects related to their self-reported WB. The terminology of ‘self-reported well-being’ is, for the purpose of this study, interchangeable with SWB. The definition does not provide a clear, strong basis for the measurement of WB or SWB. However, the focus of the research is not just to measure the level of WB and report the statistical data results. It is also to examine the personal experiences of the respondents and provide a conclusion as to how MTE and SWB works for them.

The other main topic of this study covers the question of the quality of motivation behind a decision to exercise. Motivation, like WB, has been the subject of academic interest for a long time. Whilst the most known definitions of motivation and the associated theories are linked to some highly cited names, like Maslow (1943), Herzberg (2008), Csikszentmihalyi (1990), Baumeister (2016), the English Cambridge Dictionary provides the simple definition of motivation as 'the enthusiasm for doing something'.

In this respect the definition of Hedonism is also useful here, as provided by Bramble (2016), who says that the answer to why life can go well or poorly for a person is the basis of Hedonism, and the presence and management of pleasure and pain. The term Hedonia can be simply understood as pleasure or feeling good. Our WB, and here it is meant as SWB or WB as perceived personally by ourselves, is our most immediate and ever-present feedback as to whether life is progressing well or not. Also, the current balance of pleasure and pain can be experienced in any given moment. The motivation to improve or optimise our WB would grant itself as the easiest motivation to acquire. Such motivation might be intrinsic, as fuelled by our need and want to achieve a better balance of pleasure and pain. However, research shows that even diabetes patients (Hilli *et al.*, 2018) and heart failure survivors have very different experiences in motivation for self-care and exercise, despite being seriously ill. Therefore, being very much face-to-face with the fact that looking after their WB is of essence to live (Chew *et al.*, 2020). What is it then that motivates us to look after ourselves? In the extreme of facing death, it is reportedly the combination of fear of death, love of life, wish to return to previous health status and prevention (Hilli *et al.*, 2018; Chew *et al.*, 2020). These conclusions give a view of the quality of

motivation of patients with varied health issues, which limits the generalisability, and hence do not provide conclusions which are wider reaching. However, the following section depicts the main topic of motivation and WB in detail and with various citations of specifically focused, yet widely encompassing, literature. This research was conducted to explore what the answers are for the rest of us. Meaning, since this project is based on data gathered amongst relatively healthy individuals who presently do not face such major challenges in life, the answers to the RQs aid our understanding of what drives us to take better care of ourselves.

To better understand the background of this study, as routed in existing literature, the next section provides a detailed outline of how the subject of WB has featured in literature historically.

2.3 Well-being in historical academic literature

The ponderings of WB and happiness have been present in human history for a very long time. The following paragraphs focus on creating a context more than a critical evaluation of just some of the WB perspectives, to illustrate the wider background of the field.

In Asia some of the oldest conceptualisations of WB focused on overall well-being, such as Ayurveda in India at around 3000-1500 BC. This was followed by Chinese Medicine from approximately 300 BC, which strove to create a holistic system of harmony between body, mind, and spirit. These systems over time migrated to other parts of the world. They influenced the way health and WB are often viewed now in western cultures as holistic, inclusive of physical, mental, and emotional aspects

and their interactions with each other (Clarke, Stussman and Nahin, 2015), despite some displeasure from western medicine. The history of medicine tells a story of Hippocrates as a physician, in around 400 BC, focused not just on treating illness but on prevention of sickness. As reflected in the Hippocratic Oath, he argued that disease is a product of diet, lifestyle, and environmental factors, including harmony between the aspects of the individual's existence and their social environment (Kleisiaris, Sfakianakis and Papathanasiou, 2014). This shows incredible insight for the time in which he lived, especially as that time did not provide the comforts of today and ordinary people had their basic needs to care about more than happiness.

Taoism and Buddhism in Asia, around 400 BC, focused on life-balance and both objected to fulfilment of desire as the basis of happiness. Those traditions still have an influence within the western view to this day (Lomas, 2016), and provide evidence that even in ancient history WB was largely considered from a multidimensional, yet simplistic, perspective. The aim is to create a balance in terms of a healthy body, healthy mind, and fulfilment of what is considered pleasurable, and create meaningful life.

In Ancient Greece, from around 500 BC, WB views began to take shape, including some of the perspectives we still consider valid today (Stoll, 2014). The political situation at the time created an opportunity for the people of Greece to have democratic self-governance, including the consideration for how one could live well (Eid and Larsen, 2008). Socrates, and then Plato, believed that striving towards wisdom and self-control could help to acquire WB, rather than searching for pleasure (Brown, 2015), thus shaping the Aristotelian Eudaimonia. Moreover, Plato fed into the Stoics by placing perfectionism or virtue at the centre of human WB.

Ancient Greece is also known for the term Kalokagathia, as the integration of moral goodness and good looks, which resonates with the broader summary of WB, especially in relation to agency and structure (section 2.6) and social pressures. Since Aristotle's time of 350 BC there are references to Eudaimonia, as "…working of the soul in the way of excellence and virtue…" Aristotle (2012, p. 13). In contrast to Hedonia, Eudaimonia can be known as the pursuit of purpose and thriving or flourishing. According to Aristotle (2012), Eudaimonia was achieved through living virtuously. This included doing something that might be unpleasant or can make us temporarily unhappy but achieves moral goodness or virtue. It is of course debatable to what extent that reference can be used in present times, as the values of present-day life are somewhat different, and happiness/WB are often individualised and personal, therefore perhaps closer to the idea of Hedonia than Aristotle's Eudaimonia. However, this view resonates with the pain and pleasure balancing act theory of Bramble (2016), which is explored further below. After Aristotelian perfectionism there were the Epicureans around 300 BC and Stoics and the theories of pleasure attainment, as well as elevation of the notion of self-control and self-accountability. As a school of hedonism, the single purpose according to the Epicurean theory, was the sole fulfilment of desire and avoidance of suffering, as the basis for health and absence of pain (Eid and Larsen, 2008). Hedonism, in relation to WB, is grounded in how a person feels, and it states that positive experiences are good for us. Arguments against this view note the importance of distinguishing amongst pleasures and discriminating against those that are immoral or less supportive of WB in the long term. One of the main objections was by Nozick (1974), who via the idea of an 'experience machine', illustrated that even if an alternative reality supplied by such a

machine offered us the experience of anything we desire, there would be still something missing. The something that only living life itself can give us and that is inherently needed to facilitate optimal WB.

It was not just philosophical theories that addressed human WB. The Olympic games took place from 776 BC to 393 AD and whilst dedicated to the 'gods', served to promote physical and mental health in people. The victors enjoyed social status, based on the perception of physical perfection as evidence of internal equilibrium. The modern times Olympics did not re-start until 1896 in Athens. In summary, Ancient Greece, its philosophies, and the origin of the Olympic games, have provided the field of human WB research with a remarkable and extensive basis.

This was followed by Ancient Roman medicine, at around 50 BC, which had a similar core of belief to Hippocrates, in that illness was considered the product of lifestyle. WB as a topic of philosophical discussions has its place in literature on moral philosophy and religious traditions. For most of the history of WB theories, and within the following almost two millennia, it is further linked to religious views. Existing literature acknowledges the continued development of WB in writing through the history of Judaism, Christianity and Islam, the Renaissance in the 15th and 16th centuries, and the Reformation in 16th century, through faith and traditional religious focus (Stoll, 2014). For Islam, the view on human WB was grounded in oneness with God (Kader, 2021). The Jewish saw the human body as a very important and precious home for the soul, within which we harbour our link to God (Tirosh-Samuelson, 2003). Confucianism linked the concept of human WB to the changes in stages of life, and its attainment to sage-hood (Fletcher, 2015). Daoists objected to the fulfilment of desire as a route to WB but upheld self-cultivation as a route to perfection (Partridge,

Woodhead and Kawanami, 2003). Buddhists, in line with the belief in karma and rebirth, saw WB as a future concept, which is achieved by virtuous living in the present (Fletcher, 2015).

Christianity saw many philosophers addressing the issue of human WB and it is challenging to pin down one characteristic that underlines the Christian views. The main names to note were Augustine, Aquinas, and Calvin (Lauinger, 2015). Augustine expressed views which seem to resonate with those of Plato in the growth of ascent of the soul (i.e., closer to God) via WB within the physical realm. Furthermore, Augustine in his book *The Happy Life* (Lauinger, 2015) offers the classification of one's needs and wants and states that not everyone who possesses what he wants is happy. Aquinas contradicted that by saying that WB can only be achieved in heaven (Lauinger, 2015). This stage of referring to WB is very much considering religious teachings and beliefs, and philosophers who belonged to those eras and movements often considered human WB on earth to be objectively inferior to the matter of god and religion.

The focus on WB weaves through the centuries like a golden thread through philosophical and intellectual movements. The Renaissance in Europe, from the 14th to 16th centuries, saw the growth from the Italian base of Florence in art and humanities. The Bible started being translated to other languages and science presented some challenges to the Catholic church. The hunger for progress and change resonated into medicine too, and the human body was viewed as less flawed. Confidence in the human condition as synonymous with WB also grew (Stoll, 2014). This stage was followed in Europe by Enlightenment in 17th and 18th centuries. The field of physics rose to focus and with that the intent on how to measure aspects of its

science. The field of WB experienced greater emphasis on “well-being as series of good experiences” (Stoll, 2014, p. 5). This created a rise in the number of studies and philosophical writings on the subject across western Europe. Both Voltaire and Diderot in the mid-18th century criticised the Christian guidance to aim for happiness in the afterlife, showing the complex opposition of religion and science at the time. The end of 18th century has seen the emergence of the first attempt to write an account of the history of WB by Francois-Jean de Chastellux as a “piece of comparative sociology” (Stoll, 2014). He suggested that the mere measurement of happiness is complex, because of the multitude of factors to consider, such as working hours, taxation, leisure time, as well as slavery and war, thus further reflecting the times. Additionally, he supported the view that society itself holds responsibility to create an environment for its citizens to be well and to thrive. During this time Christian ethics still had a strong following and the Church held authority on the pursuit of happiness. Even Adam Smith in his contemplation on economic developments saw economic conditions to be less of an indicator of the WB of citizens, than the level of ‘tranquillity and enjoyment’ in line with his “pure and rational religion” view (Smith, A., 1776/2010).

In the mid-19th century, the idea that happiness was not the same as contentment, which involves the pursuit of more noble things (Mill, (1887/2003), emerged not for the first time, but as a recrudesce of previous thinkers and former conceptualisations of happiness and WB, as if reverting to Aristotelian views. In the 19th century, the subject of WB was grounded in physical fitness and lifestyle in academic papers. In France, in 1880, August Comte noted in positivist philosophy how human WB gains from improved physical health and extended longevity, rather than from robust industrial growth (Comte, 1880). Maximilian Bircher, in Switzerland,

around the same period at the dawn of the new century advocated a healthy diet, a structured regime, and self-control as part of his “Order Therapy” (Wolff, 2010, p. 12), to create longevity and healthy WB. In essence this concept corresponds to Healthism (section 2.6.1), promoting responsibility for self. In the meantime, in the USA this combined with the birth of the YMCA gym in 1879, originally established as a Christian society in 1844 and matched by the YWCA in 1855 (Smith, E., 2010).

The term 'wellness' emerged as late as 1950, from the work of American medical doctor, Halbert Dunn, as the opposite of illness and the integration of WB and physical fitness. Moreover, it is in the mid-20th century that Maslow’s hierarchy of needs also speaks of human WB (Maslow, 1943). Maslow’s theories are further critically reviewed in the Chapter on Motivation. His views are connected to the WB aspect, in that he speaks of the need for love and self-actualisation, as states affecting WB, after the satisfaction of basic physical needs. So as the paragraphs above give some general outline of how the term WB figures in philosophical considerations throughout the cultural and religious history, we can see here how the development of our thinking about our needs progressed, and the early connection to the concept of motivation in the work of Maslow.

In the 1970s and 1980s the term WB is used in research into job satisfaction (Lawler and Hall, 1970) and later from the point of view of the value of health (Taylor and Monica, 1970). Furthermore, in socio-economic literature the term was starting to emerge as a point of potential consideration for policy makers. In that time, in his reference to gross domestic product (GDP), Robert Kennedy said “…(GDP) measures everything in short, except that which makes life worthwhile…” (Kapoor and Debroy, 2019). This gives an outline of how the WB of humans, individuals and societies has

been viewed through that age. There is no literature that assists to depict how those views imbedded in their respective times, and their associated social narratives, impacted individual people or indeed how people felt about their own WB. It would be reasonable to assume that in times where basic needs are the focus, the SWB of an individual takes a back seat. Equally, however, the economic growth in the western world and with that the growth in opportunities and financial freedoms of people, have not necessarily coincided with growth in the reported happiness of people within a nation, linked to the term 'Easterlin paradox' (Easterlin and O'Connor, 2020).

The 1970 – 2010 decades experienced a shift and development in the research into the practical considerations of human WB and socio-economic policies. Perhaps the cost of health care in the western world and the cost to the economy drove that motivation (Horowitz, 1987; OECD, 2001; Waddell and Burton, 2007). The 1970s show a shift from economic growth indicators, such as indicators of the WB of a population, to psychological self-reported factors (Campbell, 1976). This shift did not last long, and in the 1980s and 1990s WB research was influenced by the economic progress and focus of western societies in general, in this case creation of wealth and associated materialism (Ahuvia and Wong, 1995). The measure of the WB of the population had at the time been largely based on the measure of the economic WB of a society. There are critics of government policy and strategy on health as early as the 1970s, agreeing with academic journal publications on the importance of the focus on the WB of populations and individuals (Taylor and Monica, 1970).

Present day research acknowledges by means of a less narrow mindset that WB can indeed have a variety of meanings, and those can be related to the economic status of a country, of the individual, and amongst others also the respondent’s outlook

(Ruggeri, 2020). Current research is of course also impacted by COVID 19 and its effects on the subjective, physical, and psychological WB (Cheng, Kim and Koh, 2020) of vast populations around the world.

As this chapter illustrates the study of WB has been, and still is, a multidisciplinary field. From philosophy to economics, from medicine to policy making, former research and philosophical stances show a huge variety of ways to view the topic. The measure of WB of individuals within a society has been equally varied, whilst relying more on quantitative reports, rather than individual human stories (Eid and Larsen, 2008; Diener *et al.,* 2009). The literature review of this aspect is further addressed in section 2.7.1 and the Methodology chapter.

Research has moved from the domain of philosophers to social sciences, whilst social surveys and statistics dominate (Stoll, 2014). This leaves some gaps that are unexplored. For example, the measures of physical fitness remain that of strength or cardiovascular ability (Greig *et al.*, 1994; Meylan *et al.,* 2009). Cognitive health is measured in terms of signs of depression or long-term anxiety (Penninx *et al.*, 2008). However, despite the robust history of WB, a holistic approach is less present. Moreover, the measurement of SWB, based on authentic real-life narrative would add to the broad strip of the WB field, offering further clarification of the notion of WB, thus moving to a holistic concept of WB. This research asked respondents to reflect on and answer questions related to aspects of their WB, to ascertain relationships between them. It examined, in the qualitative data collection, the respondents' detailed narrative about their perceived SWB. Before this chapter moves onto the subject of SWB, it continues to unpack the vast swaths of material reporting on WB and its various aspects.

2.4 Well-being

As section 2.2 states, the definition of WB is complex. Today, it is not just individuals that ponder their own personal WB, but societies and governments that note the importance of it. In the mid-1990s the Health and Lifestyle survey (HALS), which to this day provides reliable information about the health and well-being of the population (ONS Census, 2019), was introduced using questionnaires and interviews to measure life satisfaction. Since the 1970s countries have measured the happiness of citizens as a form of measure of impact on economics. Furthermore, some literature states that economic growth positively impacts happiness (Veenhoven and Vergunst 2014; Veenhoven, 2014). In the year 2018 wellness industries worldwide were worth £3.2 trillion, as reported by the Global Wellness Institute, a non-profit global organisation which provides well-ness related information (Global Wellness Institute, 2018). This worth is half that of the health industries (Global Wellness Institute, 2018). Hence, the preoccupation with WB within governmental bodies, as well as in the focus of individuals on their health, is a growing global phenomenon. The associated industries are still growing and so does the academic research.

Previous research presents philosophical outlooks and answers to WB-related questions based on theories. However, there is little evidence that WB is a unified subject in the sense of real experience (Campbell, 2016) and better communication between researcher and respondent can produce richer data. The choice of lifestyle, which impacts SWB (Diener and Suh, 2003), is subject to agency and structure (section 2.6). Our freedom impacts the choice of lifestyle and helps to "facilitate selection of best fitting lifestyle" (Diener and Suh, p. 281), and the short-term lifestyle

decisions we make based on our freedom of choice influence our long-term WB. The neoliberalist view might not agree, as it states the premise on which society emerges to be the way it supports all its population (Svensson and Hallberg, 2011), thus placing the responsibility of the long-term WB of individuals in the hands of government and society. Dolan (2014) also proposes that our agency is so vastly limited by the time we get to adulthood, that true freedom of action is almost impossible. He agrees largely with the findings of Rath and Harter (2010) on the impact of the WB of the population on the economic ascent of society. However, where those ideas are supported by previous literature, the idea that we are determined by structure more than our own actions, seems of his own premise. Section 2.6 is devoted to aspects of agency and structure and section 2.6.1 focuses on the construct of Healthism and depicts this issue further.

Some researchers look at the topic in very non-economic terms. Rath, Harter and Harter (2010, p. 4) state well-being to be “about the combination of our love for what we do each day…”, which is very much in line with Csikszentmihalyi (1990) idea of Flow. They further add “…the single biggest threat to our well-being tends to be ourselves. Without even giving it much thought, we allow our short-term decisions to override what’s best for our long-term well-being…” (Rath, Harter and Harter, 2010, p. 7). This thesis aimed to build on those philosophical statements and combine those with theories of motivation that conclude the positive activities and behaviours we adopt to benefit our SWB (Lyubomirsky and Layous, 2013). Most of us are motivated to become happier (Ryan and Deci, 2000; Lyubomirsky and Layous, 2013), so what it is in us as humans that does not translate into behaviour remains a question. Section 2.5 outlines the existing literature on motivation and its associated theories.

Social Cognitive Theory (Bandura, 1986) states self-efficacy, as related to motivation, to be a process of self-regulation. In essence, it is the belief in self or the belief in our efforts paying off (Bandura, 1986). After all it is well known that those who are happier have better relationships, health and immunity, better income and are more creative (Lyubomirsky, King, & Diener, 2005). Therefore, the question is why our knowledge does not allow for our temporary motivations to lead to longer-term behavioural adjustments. Perhaps translating the terminology of WB to SWB will allow for a better focus.

2.4.1 Subjective well-being

Whilst some SWB might not be equal to WB, there is an agreement that SWB gives a picture of overall quality of person's life as assessed by personal evaluation (Diener, Lucas and Oishi, 2018). One of the aims for this mixed-methods project was to discover more about the sample's perceived world of WB, firstly by means of trends emerging from the quantitative data collection, and then supplemented by the qualitative semi-structured interviews. The population sample was sourced from sports and exercise facilities, nutrition specialists' client databases and Pilates studio attendees. In that the sample was likely to have some experience with exercise or motivation to look after their WB, and so have an opinion on their SWB. Their perception of their WB or otherwise their reported level of WB can be interchangeably named SWB. Ryan and Frederick (1997) state 'subjective energy' to be at the centre of factors that affect persons' sense of efficacy towards WB. This energy, as other somatic factors, is affected by "bodily functions being robust and able to be effectively

exercised" (Ryan and Frederick, 1997, p. 531). Hence, it supports the idea that physical exercise and its effects feed further into an overall sense of SWB. However, whilst there is documented literature on the effects of exercise on WB (Ryan and Frederick, 1997; Briki, 2018; Nezlek *et al.*, 2018), namely stating the positive impact of exercise on WB, there are gaps other actors potentially affecting WB. On that basis I propose the focus on physical WB, not just in academic papers but in the reality of life, to be reasonably used as a measure of focus on the person's physical activity and SWB overall. Physical exercise grounded in the aim to improve physical health or aesthetics is commonplace within western world countries. Most secondary schools have gyms and exercise facilities today and the number of public gyms has more than doubled since the late 1980s (IHRSA, 2019). The amount we spend on gym memberships has steadily grown (OECD, 2019) (note: this data does not include 2020 COVID 19 effects), but our attendance has paradoxically dropped. It would indeed be of interest to future research to examine the effects of COVID 19 related lockdowns in 2020 on long-term change in exercise behaviours in the UK. Furthermore, the MTE is clearly subjective and affects participation and adherence to exercise (Ingledew, Markland and Ferguson, 2009; Teixeira *et al.*, 2012). Exercise in turn affects WB (Ryan and Frederick, 1997; Briki, 2018; Nezlek *et al.*, 2018). The way in which the initial MTE in women correlates with their SWB, seems under-documented in current literature.

The concept of SWB has been noted in literature and measured in research (Pavot and Diener, 1993), and similarly to WB it also has a somewhat unrefined definition. It is often used interchangeably with 'happiness' (Argyle, 2001), for which the literature scope is vast. Self-reporting is noted as an effective measurement of

SWB (Veenhoven, 2007), and some of the tools include Satisfaction with Life Scale (SWLS) (Pavot and Diener, 1993), Positive and Negative Affect Schedule (Watson, Clark, and Tellegen, 1988) and the Affect Balance Scale (Bradburn, 1969). However, the most effective ways to measure are suggested to be multi-level measuring techniques, especially those involving detailed self-reports (Forgeard *et al.*, 2011). Other literature advocates quantitative survey measures (Layard, 2010). As mentioned above, this research aimed to build on all the previous reports within the field and use measuring techniques of self-reported SWB, specifically those that are proven to be effective and equally those that are likely to add new data, and thus knowledge. The intended instruments of measure related to SWB as well as MTE are detailed in the Methodology chapter.

Further to the SWB investigation, Ryan and Frederik (1997) look at the subject of personal vitality, which they define as energy or a positive feeling of aliveness and energy, in four studies. The report is thorough, and the authors are clearly passionate about the subject. Because the studies are on 'subjective vitality' it might appear that the focus is not directly related to this research. However, the paper is of twofold importance. Firstly, it shows that despite the previous focus on WB in relation to economic factors, work-related productivity and related subjects, there is also an interest in very subjective aspects of the human experience. They confirm what has been stated in previous paragraphs, “...the subjective feeling of aliveness and vitality potentially represents a significant indicator of personal well-being. Yet to date this experience of vitality has received little direct focus from researchers” (Ryan and Frederick, 1997, p. 530). Secondly, they support the aim for future research into the

factors that facilitate subjective vitality, and mention SDT as a direct link to SWB, thus linking what I established as main themes within this thesis.

Ryan and Frederik (1997) have somewhat limited their findings, in that the 4 studies that were presented were conducted with ethical scrutiny relevant to the choice of participants and data collection. The first study was very well balanced with an initial 2000 surveys sent, just over 20% return rate and a final number 151 participants, with approximated two thirds female to a third male representation. This is contrasted by the third study, where just over 100 psychology students were used as respondents who agreed to participate based on extra credit for their university course. The discussion did not elaborate on the ethical validity and did not acknowledge potential bias in the respondents' answers or their vested interest in completing the survey. As their conclusions are based on all four studies, the above undermines the report overall. However, the above informs this project's aims and increases awareness of validity and reliability as essential facets of research. To demonstrate proposed ways to deal with these, plus issues of ethics and generalisability, separate sections are devoted to it in Methodology chapter. Further contribution of the SDT, to the basis of this project, can be found at the CSDT (https://selfdeterminationtheory.org/questionnaires/), based in the USA, which offers access to previous research and to instruments of measure related to the SDT, including the SVS, used as a measure of SWB. This project aimed to contribute by means of data from a UK based female demographic, responding to WB scale questions phrased suitably for that demographic.

Additionally, the Theory of Planned Behaviour (TPB), which encompasses the attitude towards behaviour, subjective norms, and self-efficacy (Peters and Templin,

2010), and the Self-Care Deficit Theory (Denyes, Orem and Bekel, 2001) are also of relevance to the SWB subject. The first looks at the theoretical aspects of the self-care problem and as background literature it is indeed interesting. However, Peters and Templin (2010) work with demographics vastly different to this project, thus their conclusions are less complementary. The latter is based in the practice of nursing and assumes that patients are motivated to care for themselves (Denyes, Orem and Bekel, 2001). In that assumption further lies the practice of care for those patients and the language used by nursing professionals. In a similar setting of exercise or nutritional advice professionals, such theories might be of practical use. For such professionals to advise a client within the scope of their profession can be problematic on two grounds. Firstly is the ability to communicate effectively with the client, in appropriate wording which will resonate with the client and thus result in a positive effect. Secondly, there can be a time deficit in the space devoted to establishing what are the trigger points for such client in their world of SWB. The gap here is in the knowledge on what are the possible moderating variables that might have an effect on person's view and attitude to their WB, based on which suitable wording and sufficient time could be devoted to the client and their specific needs.

This project was primarily interested in asking what motivates people to look after their WB, as expressed in their own words. There are five essential elements to our WB, according to Rath, Harter and Harter (2010). These are career-related WB, social WB, financial WB, physical WB, and community-related WB. The SWB that this project focuses on is within the physical WB sphere in the exercise motivation aspect. However, wider questions within the qualitative data collection aimed to establish whether the respondents were affected by other elements connected to their SWB.

The aim was to present some questions to the respondents, on the basis of which they considered what it means for them to have a sense of WB, which of course might differ from person to person. It was of benefit to the existing research as well as to the wider community, to establish based on respondents' self-reports what the existing behaviours are, which are impacting their WB and the desirable behavioural change. Having an "evidence-based instrument" (Webber, Guo and Mann, 2013, p. 106) measuring the level and range of self-care behaviours might be possible in future research and could be of importance to health.

Sheldon and Lyubomirsky (2007) provide a range of reviews within the field of WB, with a focus on their sustainable happiness model. They conclude that 50% of SWB is based within our hereditary predispositions, 10% in circumstances and 40% in how we style our lives. They state, "…people can sustainably increase their SWB, if they appropriately and intentionally tailor their lives" (Sheldon and Lyubomirsky, 2007, p. 135). This is a significant finding which this research incorporates in the discussion of results. Respondents were asked how they felt they could increase their SWB and to what extent, with the aim to determine whether the self-reported self-perceived agency corresponds to previous findings.

SWB is, in further sections, referred to also as self-reported WB. Whilst this project aims to connect the dots on the motivation for physical exercise and its correlation with SWB, it also acknowledges that there are other aspects to our overall SWB worth investigating, such as mental health.

2.4.2 Mental well-being

Psychological WB plays a big part in overall SWB (Gross, Uusberg and Uusberg, 2019). The psychology of WB and questions such as 'how to become happier?' have made their comeback and resonate with the earliest days of Aristotle's eudaimonia. Surprisingly, the notions of WB, or happiness, or life-satisfaction have a rich psychology aspect, based purely on the fact that what those notions mean to us personally is very subjective (Lyubomirsky and Sin, 2009). Haybron (2008) notes the previously acknowledged problem of defining WB and how WB is expressed by an individual person and devotes time to considering a sustainable theory of WB.

Psychological aspects of WB come down to three needs according to Ryan and Deci (2000), namely, competence, autonomy, and relatedness. When those are satisfied, "enhanced self-motivation and mental health" (Ryan and Deci, 2000, p. 68) are experienced, but when those are not satisfied then motivation and WB are adversely affected. In part agreeing with that statement Ryff (1989) adds purpose and meaning in life, and self-actualisation as equally important for mental health, resonating the 6 psychological needs theory (Ryff, 1989). In addition to those, and in line with the idea of Flow by Csikszentmihalyi (1990), Dodge *et al.* (2012) summarise psychological WB as a "state of balance affected by both challenging and rewarding events" (Dodge *et al.*, 2012, p. 228). This thesis did not aim to find a clear definition, but rather to establish some states that might influence WB, as outlined by those authors. This author's professional practice can attest to the significance of psychological WB or mental balance, in relation to SWB and the ability to motivate oneself to exercise. The factors that positively contribute to psychological WB can be an enjoyable job (Johnson, Robertson and Cooper, 2018) or a successful marriage (Robles *et al.*, 2014). Equally, an unrewarding job or unsatisfying marriage can have a

negative effect. Furthermore, Fox (1997) advocates investigation of the effects of physical exercise as a contributor to mental health. Additionally, such factors as stigma attached to obesity can create a self-fulfilling negative cycle of behaviours and negative effects of psychological WB (Aston *et al.*, 2011). Obesity can affect person on several levels where the social stigma can lead to use of food as coping mechanism, as well as source of stress impacting relationship with self and others hence negatively affecting mental WB (Rand *et al.*, 2017). Weight bias can then in turn have an impact on motivation to exercise, especially in a teacher-led group environment and have a negative impact on the mental WB of the individual (Kirk *et al.*, 2014; Price *et al.*, 2015). Whilst obesity per se is not at the centre of this project, the motivation to look after exercise participation as a means of self-care certainly is, and the potential additional challenge of those living with obesity must be acknowledged.

Further to the link of Flow (Csikszentmihalyi, 1990) and mental WB, the notion of the extrinsic and intrinsic needs orientation is assessed. The extrinsic and intrinsic needs respectively, as a basis for behaviour, show negative and positive effects on mental WB (Ryff, 1989). As an example, EM, based on society-motivated factors, such as material wealth or physical attractiveness, can result in negative affectation. In turn, intrinsically motivated aims, such as contribution to society or joy experienced whilst exercising, show causal correlation with positive outcomes. This conclusion is included in this project in the investigation of the type of MTE and its correlation with self-reported WB within the UK female demographic.

Another facet if psychological WB is our way of relating to others.

A variable that has been explored in past literature as one of effect on exercise and diet adherence is social support (Sallis *et al.*, 1987; Grunseit, Richards and Merom, 2018). Whether it is friends or family or wider community, those with social support show longer-term adherence to WB supportive behaviours. Furthermore, greater effects, based on heightened ability to reap benefits, are shown where a close support group affects a person's pursuit of WB (Lyubomirsky and Layous, 2013) in aspects such as diet (Wing and Jeffery, 1999). Additionally, existing literature reports on female demographic data relating to exercise motives and psychological well-being (Maltby and Day, 2001).

In this research, the above findings gave the impetus to investigate further via the qualitative phase 2, as to what might be the motivators and barriers to exercise for the sample. Thus, the background information respondents offered in their rich narrative and correlational relationships between variables could be outlined. For example, whether a respondent is reporting higher level of SWB, as well as perception of support from their immediate social circle.

As stated earlier in this chapter, Ryan and Deci (2000) established relatedness as one of three essential needs of psychological WB. Deci and Ryan (2008a) and Anić and Tončić (2013), also claimed positive relationships with others to have a positive effect on WB. The latter conducted extensive study involving over 600 respondents, examining the level of WB based on a eudemonic or hedonic view on life. The eudemonic path is inclusive of an intrinsic need to affiliation and community. In relation to the overall sense of SWB of an individual, the hedonic view driven by pleasure-seeking can create a sense of fun and happiness, whilst the eudemonic view creates better self-control and with that a way of achieving set goals (Anić and Tončić, 2013).

It would be of use to professional practice to have a way how to combine the hedonic and eudemonic foci, where a person could have fun, whilst applying self-control and focusing on the greater good. That would inevitably present an intervention tool to aid the achievement of more optimal WB. There is some evidence of heritability (Keyes, 2015), but otherwise the literature unfortunately does not outline where the hedonic and eudemonic perspectives originate, whether they are learned or intrinsic to us. Anić and Tončić (2013), however, presented an interesting suggestion for future research after confirming their conclusion that “people who live full lives and those who live eudaimonic lives, have better self-control than people who live hedonic lives” (Anić and Tončić, 2013, p. 147). This reportedly leads to delayed gratification and increased sense of happiness. Their suggestion was to, based on the motivation questionnaire, test whether the hedonic and eudemonic views "can be conceived as reflections of different motivations and test the idea that orientations to happiness" (Anić and Tončić, 2013, p. 149) can be conceived as reflections of different motivations, by adding a motivation questionnaire to the research. This suggestion, an obvious gap in literature, is addressed in this project in the inclusion of age as a demographic question, to investigate the subject of increased self-control and goal orientation of those with more life experience. The aspect of motivation is included in the MTE and level of WB in phase 1 questions to ascertain correlations and trends.

The next two sections on the topics of mindfulness and self-compassion relate to the psychological states of motivation and adherence to positive WB behaviours as the tools of management of those aspects.

2.4.2.1 Mindfulness

The topic of mindfulness, in relation to the focus on MTE, is largely based on the facet of mindfulness practice, which tells us about being mentally present and aware. The Cambridge dictionary provides a definition of mindfulness as the practice of being “aware of your body, mind, and feelings in the present moment” (*Cambridge dictionary*, 2022, https://dictionary.cambridge.org/dictionary/english/mindfulness). Furthermore, Wootton and Horne (2015) state that mindfulness maintains a moment-by-moment awareness of our thoughts, feelings, bodily sensations, and surrounding environment thus leading to calmer state. Hence, if a respondent has higher level of awareness or ability to be grounded in the present moment, it is reasonable to assume that their capacity to think about their behaviours prior to acting is also higher. It would be interesting to see whether such respondents make better choices towards their SWB and exercise adoption.

Klussman *et al.* (2020) have predicted and concluded that mindfulness as moderator of self-awareness and subsequent self-acceptance, leads to behaviours aligned with this awareness, resulting in a higher sense of WB. The authors have an interest in research on the facets of WB that are very similar, if not the same as this proposed project. Experience from professional practice has shown that those individuals that are motivated to look after their WB and who adhere to supportive behaviours, have indeed displayed a sense of awareness and honesty with self. The Klussman *et al.* (2020) paper provides some data-based conclusions, however the findings are based on two groups of workers within one hierarchal level of one company, thus providing scope for further research, perhaps within different

demographics. There are other papers that delve into the topic, such as Lyubomirsky and Sin (2009), who concluded that people who “engage in positive intentional activities, such as thinking gratefully, optimistically, or mindfully” become happier as a result (Lyubomirsky and Sin, 2009, p. 468). This links to perspectives within eastern philosophies, such as the role of life energy as a source of vitality, and overall emotional and mental WB (Bai, 2020). This in turn supports the import of the notion of awareness or mindfulness in the field of research into WB. In relation to this research, the above shows examples from academic literature that support findings within professional practice. This altogether supports the need for more data, that conclude in practical advice cascading back into the world of practice.

2.4.2.2 Self-compassion

Further to the psychological aspects of WB, compassion towards self and others is considered an aspect which affects SWB. An increase in self-compassion as the result of empathy towards others in times of collective adversity, is concluded by Karanika and Hogg (2016). Unfortunately, Karanika and Hogg (2016) present a paper that is unfocused and based on a small margin of population in the Mediterranean region, which makes their summary less generalisable. In a meta-analysis study Zessin, Dickhäuser and Garbade (2015) conclude self-compassion to be of major influence on our sense of SWB. The two studies approach self-compassion from different angles. Whilst Karanika and Hogg (2016) look at self-compassion in the context of collective adversity and empathy towards others, Zessin, Dickhäuser and Garbade (2015) conducted a large literature review to assess self-compassion and

WB correlation, based on articles specifically assessing that relationship. The authors justified their call for more research on this topic in the lack of existing literature with that specific focus. There is also the question of our level of awareness and knowing that kindness towards others could result in improved sense of self, and in turn in an improved way of treatment of self. Both research papers agree further research to be of import.

To connect this evidence to the previous sections and to this research, the qualitative phase 2 was intended to include interview questions on the nature of a woman's sense of self, her SWB and changes she perceived at different stages of life. The idea was that those questions would enrich the trends emerging from the quantitative phase 1 and provide a detailed account on a woman's view of the multifaceted world of her self-concept. This term was noted by Fox (1997) and outlined as a concept of the individual as known to the individual. To present a concise report, this term is used in this study as the overall sense of someone's perception of the physical, mental and emotional self, but has not delved into its deeper meanings. The interview questions here are linked to MTE and WB. However, the participants were encouraged to elaborate and in detail depict their thoughts on the subject, and in that it was interesting to see if such concepts as mindfulness and self-compassion featured in their answers.

The realm of SWB has many facets, and whilst this chapter cannot unfold all of them, it aims to provide background to the intended data collection, methods, and the project overall in addressing as many as possible. The next several sections convey existing literature on the feature of the physical self within our overall sense of WB.

2.4.3 Physical well-being

As established in the introductory chapter, WB is a multifaceted subject, and its facets have dynamic and varied relationships. Those facets also differ from person to person in their quality and representation in the person's overall SWB. They also differ with age. Physical WB includes, among many other activities, exercise or physical activities related to exercise. The below paragraphs outline other dimensions that fall under that heading and are part of the overall structure of physical WB.

Exercise or physical activity participation are determined by our motivation. Whilst physical exercise falls under the physical WB, motivation is mostly addressed as a cognitive state or an emotive state. There is also evidence that our motivation for physical effort is subject to other physical responses in the body. Many of the separate pieces of our mental, physical, and emotional well-being link to each other in reciprocal relationships (Figure 1) that can create help create optimised WB. The illustration below is the author’s proposal of the affecting factors of SWB.

These relationships are proposed to exist, as based on the review of academic literature and the evidence it provides, as well as some evidence from professional practice. It is not within the scope of this project to investigate each aspect, but the author wishes to acknowledge that exercise or age or motivation alone do not form our sense of WB. However, correlation between WB and MTE proved to be a sensible start.

Figure 1: Proposed reciprocal relationships in the realm of SWB (Author's design)

When the word WB comes into conversation, it is often followed by a discussion on diet and exercise. Perhaps because those are the aspects which we have control over and can influence, and which are acknowledged as direct influencers of how well we feel.

Since 1910 dieting for weight loss has been documented as having its place in the UK society, and obesity as measured by BMI (body mass index) has been reported on for the last 20 years (James, 2008). The academic literature on the subject, and its effects on overall WB, started to increase significantly in the 2000s and continued into the next decade. Body weight-related concerns, including eating disorders and body image, have been reported to have a direct impact on SWB (Dawson and Thornberry, 2018). The relationships between social and environmental

effects on body weight fluctuation, in relation to WB, are also reported within this decade (Reidpath *et al.*, 2002). Around the same time the western governments also noted that the rise of obesity amongst its citizens impacts productivity and the governmental expenditure on health services, and some have acted by increasing taxation on sugary drinks (OECD, 2019). Whilst the exponential increase in workplace wellness programmes and growth in gym and spa industry is well known and documented (IHRSA, 2013), especially between 1980 – 2000, the level of reported life satisfaction within western population stagnates at best (ONS Census, 2019). This is one of the reasons why this research was originally proposed.

The author's professional practice encountered people from all walks of life, who struggle with usually one aspect of their WB and focused solely on it. This can be a weight issue, exercise adherence, stress, emotional resilience in the face of domestic pressures, or others. Often these people, patients and clients in health and sports clubs, want to talk about that specific aspect and do not consider others. Sometimes they ask for advice as to how to address the issues behind their worries. Almost always, however, they reject the direct recipe for aiding their situation, by justifying why they find themselves in it. This suggests that an offer of help needs to be presented in an alternative manner, otherwise the prescribed solution is perceived as too external and therefore rejected on the principle. Encouraging such a person to reflect on their situation by posing questions, might influence the perception of their own agency, self-efficacy, and compassion. The professional courses to qualify as a Gym Instructor or Personal Trainer include in the minimum requirements knowledge of the importance of nutrition on overall health of the exercise participant. The governing

body CIMSPA noted this as an essential knowledge requirement for those professions.

This once again feeds into the correlational interactions in the proposed cycle in Figure 1 and some argue that it is not the exercise or diet that we need help with, but the psychological and emotional triggers behind related problems (Rand *et al.*, 2017). Furthermore, those health and sports professionals in a position to help and prescribe advice, might benefit from additional knowledge and skills reflecting the above. This project proposed research into the respondents' self-documented experiences at the point of intention to exercise. Moreover, it focused on using similar methods to Rand *et al.* (2017), who gathered results by means of thematic analysis (TA) and an examination of the individual respondents' self-reported environment. However, the demographic of respondents and the focus of the authors are different to this project, and their conclusions lack clarity in the recommendation for dissemination of findings.

In the 2000s research looked further into the motivation and its effects on exercise adoption, largely based on the research of Dishman, Ickes and Morgan (1980) and Horowitz (1987). Later research confirmed their findings (Ryan *et al.*, 1997; Sheldon *et al.*, 2004). Chu-Hsin, Li-Yueh and Man-Li (2007) specifically investigated the positive personality effect on motivation to participate in exercise and confirmed the effect of exercise on well-being overall (Ryan and Frederick, 1997; Briki, 2018; Nezlek *et al.*, 2018). The study is based on a robust literature review and is of interest to this review because the authors targeted a demographic of exercise participants within the fitness industry. However, it was based in Taiwan, thus the cultural differences to the UK rendered this to be a less useful reference.

The MTE literature so far, and up to the point of the 1990s, has proven focused on general theory of motivation (Maslow, 1943; Deci, 1971), whilst acknowledging motivation to be a key aspect in health-related behaviours (Csikszentmihalyi, 1990).

The measuring of exercise participation has in the past proven to be often focused on a specific small section of the population (Dishman, Ickes and Morgan, 1980). In present day those measures are often incorporating the scope of exercise participation within whole countries (Ríos, Cubedo and Ríos, 2013). Plonczynski (2000) offers an extensive review of papers on MTE, which are varied and show the scope of the research in that field. A study into the lack of motivation of drug addicts to stop using drugs by St Pierre (1969) describes the use of four-stage motivational progression, largely based on the addict's acknowledgement and subsequent continual awareness of the problem and its context. The paper describes a remarkably close resemblance of the self-reported journey of a drug addict to a person with self-reported excess weight issue seeking diet and exercise assistance (Dawson and Thornberry, 2018). The narrative of the drug addict reportedly includes a victim mentality and sense of entitlement, with narrative suggestion the sense of entitlement to methadone, or the right to enjoyment. This holds similarity to a person of self-reported lower SWB, due to being over-weight explaining their situation and the justification of it. To aid such a patient or client is challenging and stigmatisation of obese individuals does not support their WB or progress to a healthier lifestyle (Puhl and Heuer, 2010). Transtheoretical model of behaviour change (Prochaska, 2020) shows the 'importance of motivation' to be at the centre of the problem, and whilst a person might be branded as motivated when showing willingness to change, only consistency over longer period, often a lifetime, brings on a lasting change. The model

provides useful background and shows the need to further research what it is that gives long-term motivation to those who seek change in their sense of WB. It also shows how motivation is not long lasting and that it is an internal process that is short-lived. The model was not adopted in this project as its grounding however it is an important part of the field of motivation research.

Diet and exercise participation have been researched in relation to each other (Castro *et al.*, 2020). The intervention study showed that those who engage in physical activity over time adjust their intake of certain nutrients as a result, as if the body required specific sustenance to recover effectively from exercise. This reciprocal relationship feeds into the proposed model in Figure 1.

The narrative of diet and exercise is linked to the theme of previously mentioned mindfulness by such physical activities as yoga. Yoga is taught to incorporate body and present time awareness whilst, practicing physical poses. The physical benefits comprise of the exercise itself, improving strength and flexibility, and thus an overall feeling of physical WB (Salmon *et al.*, 2009). The general sense of calm appears to happen based on the physical exercise in combination with staying present in the mind, the time devoted to yoga practice resulting in an improved sense of WB (Salmon *et al.*, 2009). In the same sense, mindful eating results in enjoyment of the process and consumption of food based on hunger and need, rather than mindless consumption (Dunn and Norton, 2012).

In summary, neglect of the physical self, whether for the lack of exercise, poor diet or lack mindful behaviours, can have profound neurobiological consequences (Wootton and Horne, 2015), which can surface as an experience of a lowered sense of SWB. The subjects of diet and exercise are interlinked especially in professional

practice and so are addressed here in conjunction. The subject of diet is not included in this study data collection, however, exercise motivation as related to levels of WB is very much it's central focus.

2.4.4 Differences associated with age, gender and ethnic background

Gender, age, and ethnic background have all been documented to play a role in our perception of ourselves and how we are perceived by others. The following paragraphs consider how those three demographic specifications impact exercise motivation and WB, as documented by existing literature.

Maslow's theory (Maslow, 1943) in relation to what might motivate women was based in his time and so included such examples as 'being a perfect mother' and not much besides. Maslow's theory is addressed further in the following sections devoted to motivation. The options for self-actualisation that women have today are vastly different to the time of Maslow's theory. Women in the western world today also enjoy a considerably wider range of freedoms when it comes to exercise and agency over actions affecting their SWB. Exercise participation and adherence have been researched within the female demographic (Hickey and Mason, 2017; Weman Josefsson, Johnson and Lindwall, 2018). Whilst a woman might aspire to be a perfect mother, it would in today's times be likely accompanied by other ambitions such as career or aesthetic appeal, all of which would in turn influence her MTE and her sense of WB. Some of the pressures that women experience might be self-prescribed or come from social background or social media, and lead to socially prescribed perfectionism (Dawson and Thornberry, 2018). The authors argue that the level to

which a person feels subjected to those pressures depends on the severity and context, and that the emotional expense someone pays when under pressure can lead to a decrease in MTE. The paper does not consider social or cultural effects regarding perfectionism, thus limiting its potential in causation between perfectionism and physical WB. The way this research fills this gap is by applying methods that combine quantitative trends and qualitative rich narrative of respondents, where results are predicted to have the potential to positively influence prescription of exercise to improve women's SWB.

Looking further at the subject of female gender in exercise and WB research, one can see the differences in approach in earlier papers in the language used, as well as the prevailing attitude towards what it means to be a woman in a society, and later papers such as Sattler *et al.* (2018) exploring body weight and stigma associated issues in female population. Bradburn (1969), as others of his generation, is a product of his time and the social norms and narratives of that time in human history in western world. For example, he refers to the respondents in his research in male gender and solely gives examples on male experiences and as if speaking to male audience. Later in the text he introduces women as part of his theorising, but in the first chapters he very much speaks of men, with a focus on male life features. This is not an example of a research paper on a male demographic, but an example of the world not so long ago which did not consider women worthy of mention or import. The publication dates to 1969 and it is not so surprising that the author is himself the victim to the times and their social norms, it unfortunately takes away from the credibility of the paper and renders it almost too ancient in its way of thinking about the world, humanity and genders. Yet, not often does existing literature critique Aristotle's

references based on gender focus. As if the more recent history was more to blame. As if we ought to have known better then. Whilst this paper does not zoom in on the topic of gender, the responses from the female sample are eagerly anticipated to see if any prevailing discrimination is reported in relation to the topic.

It has not been long since women started participating in competitive sport and it indeed took some fight to get there. It was only in 1980 when the American college of sports medicine stated, “there is no conclusive scientific or medical evidence that long distance running is contraindicated for the healthy, trained female athlete” (Bridel, Markula and Denison, 2016). Up to that point long distance running was regarded as not suitable for the allegedly weaker female body to accomplish the endurance required. In the 1984 the women’s Olympic marathon took place for the first time. Today, women make up more than half of the number of gym attendees and it is perhaps due to the rise in health clubs in the western world in 1970s (Della Vigna and Malmendier, 2006). The quality and climate of health clubs of today can no doubt be credited to women users. Yoga, Pilates, and meditation studios report most of the female attendance (IHRSA, 2019). Still, the sense of exercise and sports within female demographic continues to partly incorporate the image of the body as sexualised and the discrimination of women in relation to it (Shilling, 2005).

This project aimed to investigate the set topics, incorporating a female sample. However, more importantly, it aimed to gather the rich narrative data within phase 2 of the mixed methods to document in detail what women think and how they feel about their own selves in relation to exercise motivation and WB. It was grounded in recent literature, documenting gender as a significant variable in exercise behaviours based on gender differences in motivators and barriers to exercise (Hickey and Mason,

2017). Moreover, it aimed to add detailed evidence on motivators and barriers to exercise, as reported by the sample. In a not-too-distant past women of all ages reported dissatisfaction with their physical body more than men (Davis and Cowles, 1991). However, this difference has been documented in more recent literature to be less substantial and men report body dissatisfaction related to mental health impairment (Lavender and Anderson, 2009). Part of the literature on this topic devotes itself to the motivators and barriers experienced by the female gender (Homan and Tylka, 2014; Silva *et al.*, 2010), as well as specific health issues, such as eating disorders (Dawson and Thornberry, 2018).

Ethnic background can indeed be one of the main influences on how we view the world around us (Heath and Cheung, 2007). The World Happiness Report (WHR), as a 156 countries survey conducted by the United Nations, reports the Nordic nations to score the highest reported happiness, as well as trust and social connection (Helliwell *et al.*, 2020). The report measures levels of self-reported happiness of a population within a specific country and aims to show some relationship to possible components, such as social connections amongst citizens. However, it does not provide comparable data on cultural differences or traditional ways of expression within ethnic groups (Helliwell *et al.*, 2020). Additionally, there is need for further reporting on the levels of happiness of Nordic ethnicity immigrants around the world, which would provide an indication on the levels of happiness within that ethnic group, rather than a country. Newton (2007) reports the evidence gathered in the UK on the relationship between WB and ethnicity to be limited and said relationship cannot be determined. However, ONS reports some, but not significant, differences amongst

ethnic minorities in the UK vacillating from 7.1 to 7.8 out of 10 (where 10 signifies the highest score of reported happiness) (ONS Census, 2021b).

There is an extensive part of research into ethnic groups and the susceptibility to specific diseases (Davis *et al.*, 2017), which inevitably would lead to potential barriers to exercise or a lessened sense of WB. Data on the self-reported level of WB amongst ethnic groups is apart from the above, largely unreported. There is however, evidence that ethnic background and cultural conditioning impact the way we perceive ourselves, the physical body and what is attractive. This in turn influences our motivations for the physical body and exercise. Altabe (1998) reported significant differences in self-perception and body satisfaction in African American women and Caucasian American women and reported a link to the positive body image of the former. Furthermore, Furnham and Baguma (1994) reported Ugandan students to associate beauty and health with heavy and obese-like images of people, in contrast to British students. This clearly illustrates the difference in what motivated different ethnic groups, as based on our self-concept and what we want for our physical body. The exercise outcomes, as linked to ethnic backgrounds, have been linked to cardiovascular adaptations to exercise based on racial differences (Sheikh and Sharma, 2014) in a comprehensive study which underlines the affective states related to exercise.

Furthermore, Blanchard *et al.* (2003) report a moderate influence of ethnicity on planned behaviour, as related to exercise. Papadakis *et al.* (2012) also report on findings regarding cardiac adaptations in athletes, based on racial differences, with significant results. The effects of ethnicity on the perception of one's own WB is however reported as insignificant (Omosehin and Smith, 2019). This study aimed to

add to the existing literature by incorporating an ethnic background question to the demographic data section of the quantitative phase 1 questionnaire. This provided additional information on the sample and its distribution across ethnic groups. Data significance, in relation the generalisability within the UK population, was established based on the spread across ethnic backgrounds. The Participant Information Sheet invited those female respondents who resided in the UK to take part, and to state which ethnic background they identify with. However, the representation of ethnic groups within the sample could not be predicted, and all female UK residents were welcomed to take part.

The above paragraphs have reported on the role of gender and ethnicity in relation to WB and exercise motivation, furthermore there is literature that reports on the sense of WB in relation to age. Literature reports on older age demographics showing higher levels of SWB, when self-reported (Charles, Reynolds and Gatz, 2001; Diener and Suh, 2003; Argyle, 2001). Both, cross-sectional and longitudinal studies, conclude a positive correlation between chronological age and happiness, whilst acknowledging that relationship to be complex and not always easily emergent (Argyle, 2001; Clark and Oswald, 2006). Furthermore, literature also documents age to be a variable in exercise motivation, based on motivators and barriers reported for different age groups (Hickey and Mason, 2017). This project's RQs specifically focused on the difference in age groups in MTE and SWB trends, and further detailed the motivators and barriers to exercise and SWB attitudes in different age groups, as well as any changes throughout life. The project did not aim to prove or disprove any existing theories, but anticipated presenting additional support for existing literature in

conjunction with reporting on any found moderating variables related to age, MTE and WB.

To present a concise and valid research design, this study aimed to invite a sample from a target population that identify as female and are based in the UK. Age and ethnicity questions were also part of the quantitative phase 1 questionnaire. These three demographic specifications were included in the project to address any gaps in literature, as well as to create a generalisable and transferable study. The aim was to show equal representation within age and ethnicity. The point and focus of this project were the motivation to take positive steps towards WB in the sample population, but not discriminate against any demographic groups, with the focus on female narrative.

There are further studies conducted with a specific demographic sample, which illustrate the world of exercise and WB from the view of the target population. Positive correlation is reported between SWB and religious beliefs (Ellison and Levin, 1998), SWB and education as a means of acquiring financially stable existence (Witter *et al.*, 1984), and between SWB and stable marital status (Diener, Wolsic and Fujita, 1995). The reversal shows a higher reported SWB causation with attractiveness as a marital partner (Diener, Wolsic and Fujita, 1995). The next section considers socio-economic impact on the investigated topics of this research.

2.4.5 Socio-economic impact on subjective well-being

Socio-economic reporting on the WB of persons and populations was widely used in the 1970s (Hodge, 1970; Lawler and Hall, 1970), often in the western culture.

These pieces of literature contribute to the progress of research into the following decade and the research in the field of WB and motivation overall. The 1990s literature examines the correlation between WB and productivity at work (Lu, 1999; Csikszentmihalyi, 2003; Johnson, Robertson and Cooper, 2018), materialism (Ahuvia and Wong, 1995) and goal achievement theories (Utman, 1997) which could all be considered a reflection of that time and societal focus.

The 1990s are within the academic literature on WB influenced by the wider narratives of western life in that time, such as the creation of wealth and associated materialism. Ahuvia and Wong (1995), in their article on personal WB, consider the implications of materialism. They confirm previous conclusions (Richins and Dawson, 1992; Kasser and Ryan, 1993) of the generally negative relationships between life satisfaction and materialism and allow for more robustness in the statement. They recommend future research to investigate the quality of the relationship between materialism and WB, and whilst that is not precisely what this study aimed to investigate, it did inform the set of questions to be asked when gathering quantitative data, such as to investigate correlation between the respondents' self-reported level of SWB and their self-reported level of financial comfort, preoccupation with money matters and materialism.

Csikszentmihalyi (1990), the author of the idea of Flow, criticised the focus of materialism and the terminology used around this notion. The critique here was however not the generalisation that materialism is of detriment to WB (Duh, 2015). Rather, Csikszentmihalyi (1990) concluded that there is evidence to suggest different kinds of materialism, and not all with negative effects on life-satisfaction. His 'instrumental and terminal' materialism represent forms of materialism that are

beneficial to relationship formation, such as family photos in the former, rather than just placing value in material objects in the latter.

The focus on economic indicators in the 1990s is perhaps unsurprising as the western society has very much moved on from the post-war era to very money-making, freedom-enjoying abandon, with a focus on the creation of wealth and materialism. Social scientists building on Herzberg (2008) investigated motivation and its relatedness to work performance (Robbins, 1993), as well as the effectiveness of behaviours at work (Csikszentmihalyi, 2003; Johnson, Robertson and Cooper, 2018). Lu (1999) considers work-motivation and its quality and influence on personal WB. Specifically, the intrinsic motivation positively affecting job satisfaction as an aspect of overall WB, which directly links to other studies into the quality of motivation (Sheldon and Elliot, 1999). Lu (1999) created a very convincing cross-sectional social study on work and WB, however, due to the study being conducted using demographic of workers in Taiwan, the conclusions are quoted here mindfully, based on cultural difference and socio-cultural conditioning which might affect the respondents' perception of what WB or work-related satisfaction are. The cultural background, values and indeed the view of what WB is, would undoubtedly influence gathered data.

Furthermore, Aknin, Norton and Dunn (2009) concluded that people overestimate the effect of financial wealth on their SWB. That has a twofold impact, where a person might believe that an increase in income will increase their SWB, or that a decrease in income would decrease their WB and therefore in the latter example that person might simply focus on not decreasing their income (Baumeister *et al.*, 2001). This is supported by findings by Kahneman and Deaton (2010), who

examined the effects of income on general mood and showed that respondents overestimated the effect of low income on mood. The paper is significant in the estimates that respondents made regarding the impact income variations would have on their SWB. However, it fails to acknowledge that their study, being based on data of only women and the relation to income, has limitations. However, it resonates with this project.

Lyubomirsky, King and Diener (2005) examined the relationship between WB and success from the angle of causation. Their article is a review of over 200 papers, of which only a small margin is not peer reviewed. They concluded that WB is indicated by level of life-satisfaction, and that those terms are interchangeable with happiness. Furthermore, happiness has a positive effect on goal pursuit and success if it is longer lasting rather than more intense. Lyubomirsky, King and Diener (2005) also stated that once a person with a positive view of their WB commences work, they are more likely to succeed at it and be positively evaluated as an employee. However, exponentially more literature looks at what causes happiness, rather than the effects of it on aspects of life (Dolan, Peasgood and White, 2008; Adler, Dolan and Kavetsos, 2017).

Remaining within the scope of economic aspects of WB in that decade, is the focus of studies examining goalsetting and WB. Riediger and Freund (2004) wrote a narrow-focus paper based on three separate studies and gaining information on how interference in personal goals affects WB and goal pursuit. The study has shown that goals that support each other or are interconnected have a positive effect on attainment and further on future goal setting and WB. Riediger and Freund (2004) did not balance the gender distribution within the demographic of respondents which

would contribute interesting additional data, but the study is a good example of the focus of WB research in this period. It also supports findings by Sheldon *et al.* (2004), who concluded that the quality of the goal as well as the motivation behind it affect personal WB. The authors here balanced the gender aspect within the respondent group, but not the varied ethnicity and socioeconomic backgrounds. This is studied further by MacLeod, Coates and Hetherton (2008), who concluded that goal setting and planning skills indeed have a causal link to WB and that WB can be increased by learning such skills. The study does not conclude any practical advice as to what those skills are and how to teach them. It would be of interest to conduct further research on the effects of goal setting and planning in relation to SWB, with a focus on practical advice.

The pro-agency goal setting focus feeds into the emergence of agency and structure consideration, which is very much at the centre of the SWB motivation problem. The agency and structure effects (Archer, 2003), in conjunction with the effects of believing in free will (Vohs and Schooler, 2008) on WB, are discussed further in section 2.6.

Aknin, Norton and Dunn (2009) contributed to previous reports in their conclusion on wealth of countries, their populations, and the reported increase in WB within some demographics. They also note that in countries where citizens enjoy adequate earnings on average, the effects on WB are influenced by such aspects as democracy or equal rights, and where nations get wealthier the WB remains the same. This is later confirmed by studies in behavioural economics, which show that an increase in income makes a person happier only up to a point, and that self-reported WB is split into how we perceive it and how we live our lives (Atkinson, 2010). These

reports inform this project and in return were expanded by its findings, such as in the exploration on how individuals view their WB and whether respondents claim financial aspects to be of significance in their motivators or barriers to exercise, or in the view of their WB. The quantitative data gathered information on whether a person with an existing sense of optimal SWB correlates with age and MTE, furthermore, examining the qualitative account of SWB attitudes across age groups and any changes over time. This aimed to build on the literature noted in the paragraphs above and to contribute supporting material, dealing with any gaps in the existing research.

The several sections above examined existing literature connected to exercise and WB in different demographic groups, and from the perspective of different aspects of those topics. Some paragraphs linked exercise and WB to motivation, which emerged as the review of literature progressed. The following sections are devoted to motivation as a primary focus, plus aspects of it as related to exercise, WB and depicting some theories on the subject.

2.5 Motivation

MTE, alongside WB, is the focus of this project in search for any variables and affective states reported by women in the UK. The sections below focus on motivation in conjunction with aspects of exercise and WB and outline the aspects affecting the relationships between them. There are many facets of motivation however, when studied on its own merit “motivation concerns energy, direction, persistence and equifinality - all aspects of activation and intention” (Ryan and Deci, 2000, p. 69). The following paragraphs outline theories of motivation, with several studies that follow the

motivation narrative in relation to WB exercise and the associated behavioural science.

2.5.1 Theories of motivation

From the mid-20th century, theories of motivation concerned themselves with their origins, the link to structure and perception, and the ingrained social narratives that guide us (Maslow, 1943; Herzberg, 2008). Maslow's theory of motivation is regarded as one of the corner stones of this field and is widely cited in academic literature (Deci, 1971; Sheldon and Kasser, 2001). Maslow (1943) states theories on satisfaction of basic physical needs and thus follows a logical thread in the post-WWII world, which was indeed concerned with re-building the basics. The import of Maslow's theory is in the grounding of other theories of motivation and is justified in the state of society of its time. The relevance to present-day research is more limited, as western societies have qualitatively different preoccupations and motivations in the current world climate. Using his views and theories as a point of reference other than historical background is also a challenge, due to his view on the role of men and women in society. He proposes that after the satisfaction of basic physical needs the motivation to satisfy the need for actualisation takes place and in case of women that might be being "an ideal mother" (Maslow, 1943, p. 10). He maintains that for a man self-actualisation can be in learning, inventiveness, creativity, or philosophy. This of course is once again justified within the social narratives and constructs of his day, however, cannot be built upon today. The question of gender, WB and motivation threads through this chapter and often becomes interlinked.

Within the context of theories of motivation in relation to WB, and in contrast to Plato's perfectionism (Brown, 2015), is the notion of laziness. Madsen (2018) presents it as an extreme lack of motivation, partially caused by social pressures and affected by external perception. Madsen (2018) describes a person who is lazy as someone who can do well, but cannot be bothered, essentially describing amotivation. The author acknowledges his focus to be within the realm of folk psychology and the epistemology which is grounded in 'common sense' (Madsen, 2018), thus observing the lack of scientific enquiry. His depiction of the interaction between societal moral expectations of how we ought to act and be, and our actual actions failing to follow is basically concluded as laziness, with very little credible background. This presents an obstacle to the validity of the author's conclusions despite of their potential to future research. Despite its limitations the Madsen (2018) paper shows the potential of laziness as a research concept within wider WB concerns, and that aspect is considered in this project. The quantitative phase 1 assessed the types of motivation experienced by different age groups and qualitative phase 2 enriched this data by reporting on the motivators and barriers to exercise, including the language that women use when contemplating the self-concept and the external pressures they report.

Csikszentmihalyi's (1990) idea of Flow is well known within the theories of motivation and widely cited in academic papers (Sheldon and Elliot, 1999; Ryan and Deci, 2000; Eid and Larsen, 2008). He links the concept of Flow to the activities which in themselves produce feelings of pleasure and considers extrinsic (EM) and intrinsic (IM) motivational states. He argues that to achieve Flow we need to participate in challenging tasks, which we believe we have the skills to complete. In relation to WB,

therefore, if a person believes that they can adhere to a long-term healthy approach to exercise and diet, whist acknowledging that it will be a challenging endeavour, a potential development of the sense of Flow will provide IM state for that task. Thus, creating not just habits and behaviours that help the overall sense of WB, but also creating a sense of WB based on the Flow itself. This relates to and agrees with the WB definition by Dodge *et al.* (2012), who concluded that when resources and challenges are in balance, a sense of WB occurs. Whilst the authors gathered sufficient data to support their theories, there seems to be no interest in practical input to aid a wider audience in establishing behaviours which create a long-term sense of WB.

This study did not aim to prove or disprove the above, however the qualitative data collection was focused on finding a link between healthy processes, which are challenging but in themselves enjoyable, and a sense of increased WB; as well as the correlation between processes or activities which are believed to create a sense of WB but prove to be too challenging and/or not enjoyable. The model of Flow (Csikszentmihalyi, 1990) is well suited for any investigation into human WB, especially because of the facet which sets intrinsically motivated people as advantaged. Flow as a theory is not directly related to the empirical investigation in this project. It seems open to the questioning of the value of EM, in that one might assume that when a person has a specific goal such as body weight, body size or the health of the gut microbiome, it equates to EM that provides enough power for the attainment of that goal. Others, in support of Csikszentmihalyi (1990), argue that even health concern is often not sufficient for long-term motivation towards WB optimising behaviours (Ronda, 2001). To establish a long-term goal would require IM state to motivate long-

term behavioural change. The sections below, devoted to SDT (Ryan and Deci, 2000) outline several types of motivation, some of which are extrinsic, but ingrained enough in one's self-conceptualisation to create a long-term motivated state with positive effects on WB and exercise adherence.

Also confirmatory of Csikszentmihalyi (1990), Utman's (1997) theory of IM shows the 'attainment of mastery' as the primary reward in performance and goal setting opposed to the goal itself, which would refer to EM according to Csikszentmihalyi (1990), but integrated or identified motivation according to Ryan and Deci (2000). Essentially Utman (1997) shows that the joy that a person experiences while working towards a goal can be more important than achievement of that goal. In fact, the goal might be associated with a negative emotional response. For example, enjoyment from exercise, as creating or being based on IM being of higher import to achieving a slim figure, would be based on EM. Whilst Utman's aim was to establish the generalisability of IM and EM over other disciplines, this study in its intended dissemination into professional practice aimed to build on his idea in establishing 'learning goals' versus 'performance goals' (Utman, 1997). In context this would be for example if a woman views her exercise routine as an enjoyable part of life, the motivation towards it will increase, and in return the feeling of external pressure to look or be certain way will be met with better resilience. That said, the above is an aim which is part of the dissemination of the findings of this research, not part of the research project itself. The Utman (1997) study unfortunately selected a narrow demographic of respondents and therefore limited the generalisability of its conclusions. Moreover, it is a publication that is illustrative of the wider context of motivation, but it leaves gaps in suitable methods. The data collection within that study

used tasks which are scored and in turn might increase the respondents' motivation to achieve a higher score opposed to work through the task.

IM and EM are indeed attractive depictions of motivation to the topic at hand. Aristotle (2012) described happiness as having its own value and being sought after for that value. Although his philosophical writings are over two thousand years old, he could see the effects that wealth or power, sought after for their attainment, have on our happiness. Aristotle (2012) has been mentioned above in context of the history of philosophy on WB and in some ways his theories could be considered as of little relation to present day motivation. However, his views were an inspiration for the design of the survey questionnaire in this study. Mainly regarding the aim to gather data which would illustrate the importance of physical WB in context of overall WB to the respondent.

The theory of motivation which underpins this project as based on the literature review of the theories of motivation, is SDT and a separate section, 2.5.4, below is dedicated to it.

The theories of motivation, when applied in practice, need to focus on transforming the emotion of motivation into action. Whether that is goalsetting (Locke, 1996; Fenner *et al.*, 2013) or a focus on long-term continuous SA (Miller and Thayer, 1989). This calls for further research into the associated topics, as well as research which evokes new ways in the promotion of sustainable exercise and quality of MTE. The following section focuses on the motivation for looking after the physical self, as another part of the multifaceted field of SWB and motivation.

2.5.2 Motivation for looking after the physical self

In the world of human development and self-care the theory that humans can drive their own healthy progress has been presented many times (Horowitz, 1987). However, the practical aspects of 'how-to' are rarely present and the presented models are over-complicated for real life implementation. On the other hand, popular literature has plentiful prescriptions for WB and self-care (Zukav, 1989; Narain and Phillips, 2017). However, from the perspective of academic research those pieces of literature are often unsubstantiated in science, with some rare exceptions such as Dolan (2019), Wootton and Horne (2015). More future publications are needed, that manage to combine scientific conclusions with the presentation of 'how-to' recipe for self-care within the real world. And as self-care indeed means different things to different people (Narain and Phillips, 2017), it is essential to be self-aware to be eventually able to act with long-serving behavioural consequences. Carrol, Gilroy and Murra (1999) include physical and recreational activities in their definition of self-care, which links their work to this project where exercise is understood as a way of self-care. In turn, Callaghan (2004) reports on the positive effects of physical activity on decreasing anxiety and depression. It rounds back to the motivation that is or is not present for action towards self-care to be taken. Perhaps personality is the key to unlocking the mystery (Chu-Hsin, Li-Yueh and Man-Li, 2007) or aspects related to personality, such as sense of vulnerability or sense of control over one's life (Hilli *et al.*, 2018). However, so far research has not delivered conclusive answers. Thus, there is not just scope for more research, but such research that will provide feedback on how respondents view their WB, the import of it for the individual, the agency that

individual feels in intentional action-taking and why some feel motivated whilst others do not.

There has been a reported growth in research into WB in the 2000s. Deci and Ryan (2008c), among other life domains, also focused on health behaviours and exercise-related behaviours, and specifically the effect of motivation on psychological WB. The authors based their investigation on the SDT and are highly cited in further literature on motivation and WB (Silva *et al.*, 2010; Klain *et al.*, 2015).

Research shows that even an illness or a health scare is sometimes not enough to motivate action towards more exercise and better WB (Toobert, Hampson and Glasgow, 2000), and whilst it might seem that ill health would be a great motivator to start self-caring, it seems that it is not always so. Ryan and Deci (2000) explain EM as external pressure and experienced as controlling, however a person can feel autonomous, whilst extrinsically motivated via internalising the initial external prompt, if their basic psychological needs are met. Whilst they explain the mechanisms behind EM, when and how it is effective, it remains a problem in people's experiences. A person, even if intellectually aware of the theory behind the quality of their motivation, might not act positively towards their WB. Further research that would examine how a person feels and what their cognitive processing is in the moment of the intention to act towards or away from their SWB, is needed.

A theory based on previous cognitivist theorising, SDT included, called Affective-Reflective Theory (ART) looks at physical activity and inactivity (Brand and Ekkekakis, 2018). Presented as a theory which aims to explain why people don't adopt exercise, other than for the reason of lack of motivation. It contemplates the cognitive processing at the moment of contemplation on action towards or away from

exercise and emphasizes the role of rational thinking in behavioural choices (Brand and Ekkekakis, 2018). The ART proposes a theory why many of us remain inactive. It says that 'the core affective valence associated with the current state of physical inactivity is more positive than the affective valence associated with exercise' (Brand and Ekkekakis, 2018, p.56). The term affective valence refers to all states, mood and emotions, positive and negative, that person is continually experiencing albeit at different intensities. The article shows how theories on behaviour and behavioural change evolve and it grows the field of theories related to exercise adoption.

MTE, as a topic of research, is concerned with what motivates people and how, what are the environmental conditions required for action to be taken and for adherence to be achieved (Horowitz, 1987; Buckworth *et al.*, 2007). Although the SDT assumes that "people are by nature active and self-motivated, curious and interested" (Deci and Ryan, 2008a, p. 14), the reality of motivation is clearly not that simple. Terminology for EM and IM is at times interchangeable with controlled and autonomous motivation. Deci and Ryan (2008b) distinguish autonomous motivation, that which includes IM and well-internalised EM state, from controlled motivation, which is associated with external influences and pressures. They concluded autonomous motivation to be not just an advantage to effective performance achievement, but also leading to a higher sense of satisfaction in life. This feeds back to the Flow by Csikszentmihalyi (1990) and the balancing of resources and challenges by Dodge *et al.* (2012), as considered above.

Deci and Ryan (2008a), amongst other subjects, inspected health behaviours and exercise adherence to a great extent. However, it would be of interest to the current body of literature if further research investigated whether respondents who

self-report lower SWB also report a higher level of EM, such as external pressure in the form of health issues. There is also the related question of extrinsic and intrinsic long-term goals, where extrinsic goals refer to external indicators and intrinsic goals refer to personal psychological needs (Deci and Ryan, 2008b). The conclusions show that intrinsic goals lead to better psychological WB (Maltby and Day, 2001) . Therefore, the focus on aesthetic appearance or social status affecting aspects of self-care will not result in an overall improvement of SWB.

The aspect of amotivation is also less present in academic research, and where a person does not value the potential outcome or is not able to adopt specific behaviour is mentioned by Ryan and Deci (2008b) only on the periphery of their article. Amotivation does feature in existing research (Madsen, 2018; Dolan, 2019), however would also benefit of further investigation and less negative connotations (Madsen, 2018).

Other papers on motivation and exercise support the above findings, in supporting material documenting autonomous motivation to have an overall positive impact (Hagger and Chatzisarantis, 2007; Pelletier *et al.*, 2001). Fortier *et al.* (2007) concluded in their paper that autonomous adherence to exercise in teenagers is positively affected by parents' prioritising autonomous behaviour. This also relates to Deci and Ryan (2008b), in that their conclusions state autonomous motivation to be supportive of effective performance, but also enhancing of overall life satisfaction. These points provide an interesting context to this project however future research, rather than this project, might contribute new knowledge.

Further research papers focus on the relationship between WB and cultural and social determinants (Diener and Suh, 2003; Fletcher, 2009). The gaps in the current

literature are reported above in relation to each theme. In summary the gaps are in the research methods used, thus there seems to be a gap in literature based on detailed qualitative narratives of respondents. Furthermore, there is a lack of literature specifically asking about the qualitative human experiences in relation to MTE and SWB. Quantitative surveys used in research provide valuable data on trends in MTE and SWB (Markland, 2009; Zabriskie and Ward, 2013) and other literature reports on qualitative data regarding motivators and barriers to exercise (Bredahl *et al.*, 2015). This study complements existing research in offering mixed-method study on the subjects, and their correlation.

The decade of 2010s in academic literature reports on WB in relation to self-care more than any other aspect of WB. This is surprising and clearly shows that despite the topic being popular and well reported on up to this point, there are facets that lack clarity and are provoking research. Amongst many, Plonczynski (2000) reports on measuring of MTE and supports previous findings that motivation is at the centre of the intention towards self-care (Dishman, Ickes and Morgan, 1980). As said in previous paragraphs, there is not a lack of literature that reports on motivation towards an aspect or aspects of SWB, however the focus is missing self-reported qualitative data, as well as a direct correlation between MTE and SWB. The fact that exercise is of import to an overall sense of WB is documented (Ryan and Frederick, 1997; Briki, 2018; Nezlek *et al.*, 2018) and yet large numbers within the UK population are not motivated to incorporate it into their lives (OECD, 2019). The focus of one of the research questions in this project is why some of us are more motivated to care for self than others. The answers tell the story of the respondents' thinking and feeling at the point of intention to act towards or away from their SWB. This essentially

adds to the existing literature by reporting self-reported data, by showing the narrative based on real life experiences and aspects of real life that affect WB related decision making. One could argue that motivation can be a temporary feeling, and unless followed by longer-term determination and discipline it can be fruitless. Intrinsic motivation can produce discipline to continue with a set behaviour and the self-determination aspect is further explored in Chapter 2.5.4 below. Further research, specifically into the self-reported thoughts and feelings at point of intention, would be of benefit, and the TPB mentioned above could provide suitable grounds for it.

To help to establish the background as to why some of us focus on self-care more than others, Kashdan and Steger (2007) examined curiosity as a pathway to create and maintain WB and sense of meaning in life. The original thought behind their project is intriguing, it is however somewhat underdeveloped and only provides confirmation of previous findings, rather than new knowledge or insight. The authors confirmed curiosity to be an indirect contributor to WB, as are many other aspects of our lives, such as social support or education (Kopsov, 2019). An article by Sheldon and Lyubomirsky (2007) looked specifically at the possibility of creating a better sense of WB and how. They also confirmed previous research findings in that wealth, whilst it continues to have self-reported assumed potential to decrease or increase life satisfaction, only has that effect to a certain point (Aknin, Norton and Dunn, 2009). This illustrates their research contribution to the socio-economic influences discussed above and confirms the correlational relationships shown in Figure 1.

Whilst some scientists presented personality traits as influencing self-care (Friedman and Kern, 2014), the argument here seems flawed from the onset, in that personality traits such as conscientiousness might be of benefit to any pro-health

behaviour. However, those with this trait as a prominent feature in their personality would arguably tend to apply it and hence not land themselves in a health–compromising lack of care for the physical-self position. It seems that whilst the social science on this topic documents such notions, the related professional practice does not benefit.

2.5.3 Motivation to exercise

The positive impact of exercise participation on overall sense of WB has been previously documented (Ryan and Frederick, 1997; Briki, 2018; Nezlek *et al.*, 2018). Additionally, literature shows the positive benefits of exercise to health (Callaghan, 2004) and additional statistical data illustrate the reasoning behind regular exercise participation in the European adult population (Ríos, Cubedo and Ríos, 2013). MTE has been investigated from various angles, such as SDT (Fortier *et al.*, 2007; Lindwall *et al.*, 2017), promotion of physical activity within specific demographic groups (Stentenpohl *et al.*, 2019), or impact of lack of motivation and a subsequent lack of participation in exercise on public health systems (Waddell and Burton, 2007) and their fiscal ability (Horowitz, 1987; OECD, 2001).

The contribution of this project lies in the expansion of the above literature, and in the creation of new knowledge of the correlational relationship among the proposed variables, specifically within the female population. Reliable data on the subject would aid the understanding of the underlying processes related to MTE in women and contribute to the professional field of industries that focus on increasing human health

and WB. Separately those factors have been investigated, however not from the angle of correlation with each other, or within the female demographic.

As noted in the sections above, documenting demographic specifications, the realm of research into female preoccupation with body image (Brunet *et al.*, 2013; Homan and Tylka, 2014) and specific health issues such as eating disorders (Dawson and Thornberry, 2018) in relation to exercise have been noted. However, the narrowed focus of those papers does not inform on the correlations proposed for investigation in this project, which utilised a mixed-methods design and reports in the Discussion chapter on the interaction of results. Exercise or MTE have been studied within specific demographics, such as athletes (Cresswell, 2005) or cardiac rehabilitation patients (Chew *et al.*, 2020). Quantitative research has been conducted on this in the general population (OECD, 2019), but the data serve as statistics, without further knowledge on the wider circumstances or personal narratives of the respondents. And so these pieces of previous research combined give a partial justification to the project aims.

There are some promising papers on motivation and exercise which look closely at adherence based on intrinsically or extrinsically motivated start of exercise participation (Ryan and Frederick, 1997). However, the choice of exercise activities seems very narrow to inform a conclusion relatable to general population. This project followed the line of MTE but bridged the gap by considering the potential generalisability of the research and implementing methods accordingly.

The motivators and barriers to MTE have been reported by literature as related to variety of aspects of life in general. Age and gender as variables have been considered. Age has been reported as a moderating variable in our perception of

motivators and barriers to exercise (Cohen-Mansfield, Marx and Guralnik, 2003) and further research reported gender and age differences in motivators and barriers (Hickey and Mason, 2017).

Examples of reported motivators to exercise include the need to optimise health and fitness (Schutzer and Graves, 2004). And specifically female populations with reported impaired health have noted this as a motivator (Brunet *et al.*, 2013; Clarke, Stussman and Nahin, 2015). Negatively perceived motivators such as externally motivated body image or externally influenced perception of one's own body have been said to have negative impact on mental health (Dawson and Thornberry, 2018). Social interaction was also shown in literature to be a motivator to exercise (Korkiakangas *et al.*, 2011; Lovell *et al.*, 2016; Othman *et al.*, 2022) as the way we relate to other people is an aspect of our psychological well-being (Ryff, 1989). Literature has also noted the impact of social support or lack of it in relation to exercise and diet adherence (Sallis *et al.*, 1987; Grunseit, Richards and Merom, 2018). Other examples of motivators previously reported by literature include mental health and feeling good (Frederick and Ryan, 1993; Deci 2012).

Barriers to the MTE have been further reported to include impaired health (Ingledew and Markland, 2008; Clarke *et al.*, 2015; Schutzer and Graves, 2004) and problems with access to venues or suitable sports equipment in special populations (Rimmer, 2008; Dondzila *et al.*, 2014). Perceptions affect our way of decision making in exercise motivation (Bredahl *et al.*, 2015) as does our sense of self-efficacy and autonomy (Sheldon, Houser-Marko and Kasser, 2006). Hence the perception of scarcity of time for exercise amounts to a barrier (Welch *et al.*, 2009; Korkiakangas *et al.*, 2011). Other barriers to exercise noted by previous research include body image

(Homan and Tylka, 2014).

This project aims to add to the already reported motivators and barriers. It is not the main aim, however based on the structure of previous research this project adds to what has been achieved already by implementing mixed methods and looking at the interaction of results from both phases. Motivators and barriers to exercise as investigated in the second phase of the project allow for richer understanding of women's narrative in this context.

It is interesting how literature that is connected to the theme of WB also comes up under the theme of motivation. As if those authors were either interested in both or found a connection between the two. Aristotle (2012), Maslow (1943) and Csikszentmihalyi (1990) have all philosophised over WB and motivation. To summarise the point of motivation and exercise here, one can consider the words of Bramble (2016), who concluded the difference between a life that is going well opposed to a life that is going poorly, as the simple balance between pleasure and pain. Those are powerful emotions but not always helpful (Fogg, 2019). Thus, one could argue that working on the acceptance of the temporary pain of hard work via exercise towards better WB can result in the long-term pleasure of living with higher WB. Sheldon and Lyubomirsky (2007, p. 141) summarise that "happiness takes work, but hopefully work that feels like play". This study built on those statements in that the methods used aimed to collect self-reported data on how a respondent processes their balancing between their motivators and barriers to exercise, and their rich narrative documenting the perception of their SWB.

The next section documents important motivation theory, upon which this study built some of its focus and methods.

2.5.4 Self-Determination Theory

SDT is a view on human motivation and personality, including the importance of evolved human ability for “personal development and behavioural self-regulation” (Deci and Ryan, 2017, p. 424). The theory investigates the conditions harnessing the human tendency for growth and the innate psychological needs that are the basis for IM. Ryan and Deci (2000, p. 68) identified the need for competence, relatedness, and autonomy, as the desired properties for optimum “growth and integration, social development and personal well-being” (as previously considered in Chapter 2.4.2 on the psychological aspects of WB). The SDT is important to this project, as it depicts why and how human behaviour and motivation are determined. It is further interested in the conditions that affect behaviour, thus providing a link to structure and agency as aspects that influence behaviours towards or away from, in this case, the optimisation of WB. SDT is further stated to be a reliable predictor of lifestyle exercise behaviours in women (Wasserkampf *et al.*, 2014).

The gap in the research is once again in the qualitative self-reported data on the cognitive and emotional processes in lived-in experiences of women. Whilst SDT is vastly cited in literature on motivation in general (Silva *et al.*, 2010), later research confirmed the application of the theory in the learning environment, in relation to persistence in a learning task being positively affected by an intrinsic type of motivation (Vansteenkiste, Lens and Deci, 2006). The study has shown that in an environment where competence, relatedness and autonomy are in place, intrinsic motivation and better learning also occur. Furthermore, intrinsically motivated goals, better relationships, as well as better engagement and understanding of the material

that is being taught arise (Vansteenkiste, Lens and Deci, 2006). This shows the effect of the situational environment on several characteristics in Figure 1 and the correlational relationship amongst them. Moreover, it supports the potential to create conditions in which personal growth and WB can thrive.

Ryan and Deci (2000) approach motivation from many angles which enhances the credibility of the literature and allows for a reliable link to this project in its focus on WB. The authors analyse motivation from physiological determination, but also the emotional and cognitive processes, and social structures perspectives. They speak of quality of motivation as a determinant for action and support their view by presenting an extensive literature review. There is a limitation in the consideration for autonomy and agency, and that section of their paper appears unfinished. Perhaps a separate article on that subject would be of benefit. The field of SDT is vast and the CSDT (https://selfdeterminationtheory.org/) provides material related to the theory, existing literature, and research. In relation to this project, the continuum of self-determined motivations as based on the SDT of motivation by Ryan and Deci (2000) is important and illustrated in Figure 2 below. The continuum depicts the regulation styles of motivation, starting with Amotivation as absent of regulation and continues from external motivation to intrinsic motivation on an increasing scale of self-regulatory behaviours. The Methodology chapter outlines the chosen instrument of measure of MTE for the quantitative phase 1 and links to the SDT as outlined here.

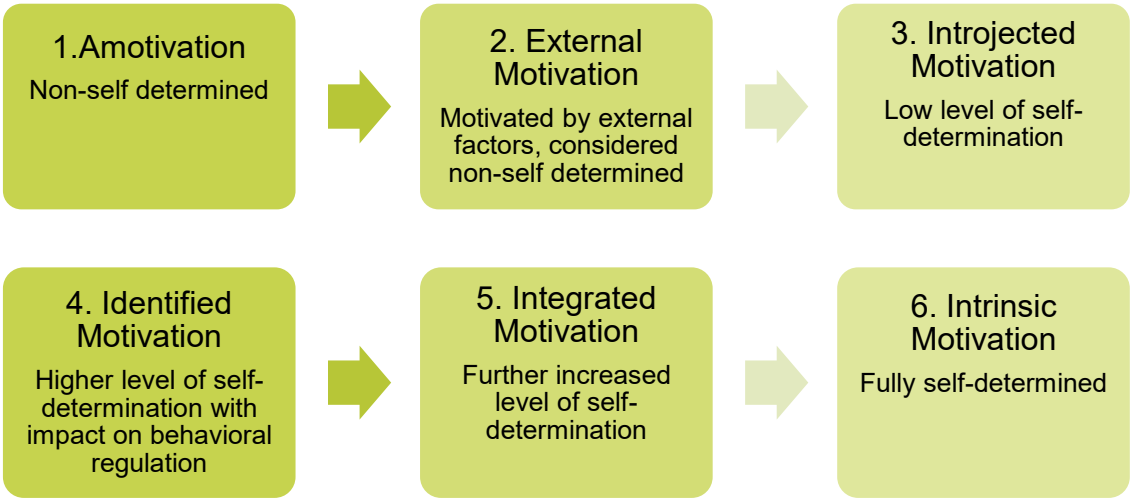

Figure 2: Increasing level of self-determination impacting behavioural regulation (Source: adapted from Ryan and Deci, 2000)

The definitions of the types of motivation as related to exercise and based on Ryan and Deci (2000) are as follows.

Amotivation to exercise – a completely non-self-determined form of behavioural regulation where a person lacks any intention to engage in exercise. It reflects a complete lack of MTE, resulting in lack of exercise. In this case a person can be described as non-self-determined (Ryan and Deci, 2000).

The remaining five types of motivation reflect the level of behavioural regulation, except perhaps for the IM, which sits at the opposite end of the scale to Amotivation and signifies fully self-determined motivation, where the immediate reward is joy of taking part.

External regulation – the person does not value the activity but might resentfully engage in it under external pressure such as medical advice. This is a type of non-self-determined regulation.

Introjected regulation – the person puts pressure on themselves to take part in exercise. This type of behavioural regulation is of low self-determination and often associated with guilt or anxiety. The external pressure has been internalised. Introjected regulation can also show in MTE, which is linked to other needs such as the need to look good, be seen as strong or able, and self-esteem levels are dependent on achievement within that activity.

Identified regulation - this type of motivation has a higher level of self-determination. It is accepted that to exercise is important to achieve goals that are personally important to the person, therefore any obstacles such as time restrictions or tiredness are less likely to be used as a barrier not to participate in the activity.

Integrated regulation is defined by an even greater level of self-determination and reflects the internalisation of identified regulation. Exercise is considered as an activity aligned with who the person perceives themselves to be and their sense of self. Exercise might be important for aesthetic reasons or to show an ability, but the person's self-esteem does not depend on the external approval.

Intrinsic regulation – a type of motivation that is fully self-determined. Here the activity is enjoyed for the pleasure of it. The person experiencing it is not concerned with any external pressures or benefits.

SDT links to the previous sections which noted the difference in intrinsically versus extrinsically motivated action being in the variance of outcomes (Csikszentmihalyi, 1990) and where intrinsically motivated activities make us happier. Additionally, the author concludes "it is only by controlling our inner experience that we can become happy" (Csikszentmihalyi, 1990, p. 1). There appears to be a contradiction with the SDT in that if Flow was the true recipe for enjoyment of all tasks requiring effort, it

would imply that whichever situation we find ourselves in, we can achieve a state of happiness by taking personal responsibility, managing our perception of the situation we are in and adjusting our approach. Here SDT offers a template on aspects of motivation and behavioural change, promoting intrinsic motivation as the main key. In contrast, Flow would mean that if a person is in a job that is not a choice but a result of circumstance, adjusting their attitude might lessen their despair and perhaps even create some temporary state of relative comfort, but long term it would surely be of detriment to their physical and mental WB to stay in said job. That is because staying in that job is extrinsically motivated action, and to achieve a sense of WB the person's energy would be better invested in aiming to change their job, within which in turn they might be able to establish better Flow. In essence, Csikszentmihalyi (1990) suggests that a sense of happiness can be achieved by self-management into Flow, in any situation where SDT stands with intrinsic motivation as the way to a happy state. In relation to real life experiences, Flow certainly seems easier to apply and manage. Where SDT is a sound theory, the application in the reality of life, even if the theory is intellectually absorbed, would be considerably more challenging. It would be of benefit for further research to contribute knowledge where respondents' lived experiences confirm or disprove the above. There are other theories on aspects affecting motivation and WB.

2.5.5 Self-efficacy and behavioural change theories

As stated in section 2.4, Bandura (1995) noted self-efficacy in relation to, amongst others, the aspects of WB to be a major contributor to the motivational states

we experience. Not all might be aware of the agency vs structure debate (see section 2.6), and even those with intellectual knowledge of it might not act in full recognition of the conditioning they are under or all the structures they live in. Magklara and Morrison (2016) have related self-efficacy and psychological WB in pre-surgical patients and have concluded self-efficacy as a reliable indicator of faster recovery and sense of well-being post-surgery. Whilst my research was based on demographic of largely healthy respondents and in that it did not directly link to Magklara and Morrison (2016), in summary their findings are predictive of WB and self-efficacy correlation if not causation. Considering this concept to be of broad application when facing adversity and in the perception of outcome of adversity, this could create a self-realising cycle as found in practice-based research into stroke survivors' recovery by Balchin (2011). Put differently, if successful outcome and perception of an outcome are positively influenced by the level of self-efficacy, higher self-efficacy could be created by achieving the desired outcome. Thus, creating a self-fulfilling cycle. Concluding the opposite to be true, Ryan, Deci and Grolnick (1995) have observed diminished vitality because of conflicts and demands affecting sense of self-efficacy and autonomy. These findings outline the link to SWB and the states of motivation we experience and were further explored in data collected from suitably phrased survey questions in this research. Additionally, Balchin (2011) has based his research on the personal story of his own recovery from stroke and level of self-efficacy and could have therefore unknowingly concluded superficial causation.

In relation to self-efficacy and the states that affect it, downward and upward social comparison have been reported as such (Zheng, Wang and Xu, 2016). There still seems to be lack of practical tools to use in real life situations where self-efficacy

is at sub-optimum. Earlier proposals of this research considered this, with the aim to contribute to the field by adding some practical tools in the research summary in a way of possible interventions. However, due to the refinement of this study's focus and in order not to dilute the project, at this stage the need of more contribution to this aspect is noted.

Self-efficacy in relation to a specific task essentially refers to the perceived ability to conduct said task. Fogg (2019) in his model of behavioural change, states that we are fundamentally lazy as humans and proposes the practical tool of small target behaviours to create simplicity and a sense of ease to aid behavioural change. His paper is largely about behavioural change in relation to persuasion, and how by observation we can see what works and what does not. This resonates with the author's professional practice, and what findings this study concluded will be disseminated into professional practice with focus on aiding behavioural change. It will be interesting to observe if simplification of behaviours towards exercise, motivators, barriers or SWB would be helpful to the recipients.

Moreover, to the notion of self-efficacy Bandura (1995), whose largest portion of work comes in the 1990s, in his publication on Social Cognitive Theory introduces 'prediction of behaviour' in line with self-perceived level of self-efficacy judgments. He states that the perception of our self-efficacy can predict our performance more than the expected outcomes (Bandura, 1995) in a diverse spectrum including addictions, sport, and psychological imbalances. Bandura (1995) also reports on the physiological efficacy of post-cardiac illness patients. The report is informative to the present study. Bandura (1995) concludes 'perceived physical capability' to be a better predictor than actual cardiac ability in re-engagement in normal physical activities and in the active

life of a patient. As the publication is more than 30 years old, the mention here is mindful of its citation for more than academic literature background. Further review of literature shows that self-efficacy is indeed a better indicator in smokers' motivation to end their addiction than health warnings are (Diclemente *et al.*, 1991), thus confirming Bandura's findings. The interventions to positively influence behaviour of course include judgements of self and others, and a healthy level of self-efficacy can aid the process towards positive exercise behaviours, as well as provide us with a level of compassion towards self and others.

Marsh (1997) argues that an increase in exercise leads to an increase in perceived self-competence, which presents a path from an external behaviour to a change in self-esteem. This idea rounds back to Bandura (1986) and reciprocal determinism where success at tasks influences positive self-efficacies and those influence further success. As mentioned above, the author considers these behavioural theories an important part of the multifaceted field of MTE and WB. However, in the narrowing of this project and for the purpose of its validity, they are not directly included in the data collection design.

2.5.6 Behavioural science

Behavioural sciences, a term often used interchangeably with social sciences, encompasses scientific studies of human behaviour (Smelser and Baltes, 2001). This frequently takes place in conjunction with other disciplines from economics, psychology, biology, and policy making. Behavioural scientists, therefore, can have a background in a variety of disciplines, from marketing to climate change to WB.

According to Professor Paul Dolan of London School of Economics (LSE), behavioural science in the last decade focused on aiding policy makers to help nudge the population toward positive behaviours, whilst respecting personal freedoms (Dolan, 2019). In the next decade the forecast is for behavioural science to cooperate with other disciplines to help to understand human behaviour in terms of evidence and to influence by interventions. WB has been investigated in the past either on its own merit as happiness or life satisfaction. Or it has been investigated in relation to one aspect of it and the effects of that aspect on an overall sense of WB such as diet or exercise or financial wealth. Behavioural science, as presented by the LSE, paves a way to better understanding of WB as a grouping of behaviours over a period.

Professional practice evidence points precisely at that. As if no behaviour or action happened in a vacuum. Behaviours, actions, and habits appear to affect each other, as if following the principles of reciprocal determinism mentioned above. This project is based on the need for better understanding of how this process happens and how better interventions can be applied in practice. For example, a personal trainer might wish to focus on physical exercise because of their professional interest and because the client expressed their need to lose weight, but if the collective of potential clients and trainers understand that excess weight does not happen instantly and in isolation, the interventions we approach and prescribe would reflect that. Behavioural science aims to create a better understanding of what creates long-lasting behavioural change. This research therefore falls under the large umbrella of behavioural sciences, as it investigates not just one aspect of human WB, but also what are the motivations, feelings and thoughts behind WB affecting action. Perhaps future research will also include a search for a better understanding of what the

interventions are that might influence behaviours impacting health and WB. In many ways the behavioural science aspect of this research links to the discussion of SDT and behavioural change theories. All the above theories and sections are concerned with human behaviour, the understanding of it, as well as the aim to establish ways to help create long-lasting positive change in behaviour. It is also of importance to understand that not all changes towards what is by theory or society considered a change for the better, are always right for everyone or at any time. In that regard the awareness of what is our level of agency and how influenced one is by structure is essential.

2.6 Agency and structure

The subject of agency has been already mentioned throughout this chapter, as linked to socio-economic impact on WB in section 2.4.6. and WB in section 2.4., and in relation to SDT on p.19. The concept of agency versus structure is further considered in section 2.6.1 on Healthism, in relation to aspects of MTE viewed as a virtue. Looking at this construct through a theoretical lens, further literature shows three ways of approaching it. Archer (2003) is pro balance between agency and structure and concluded her studies with summaries of both, regarding the way structure is internalised by individuals and the internal conversations we conduct with ourselves based on it, prior to establishing intentions for actions. Secondly, Durkheim (2014) summarises structure to be of fundamental importance and having more influence on our behaviours than agency, contradicting the next approach. The third view is pro-agency, represented by Vohs and Schooler (2008) and others, such as

Giddens (1991), and the Structuration theory stating agency and structure to co-exist in equal importance. These views, that build on Archer (2003), combine agency, and structure and vote for a compromise in theories on human behaviour (Atkinson, 2010). This includes the depiction of individualisation within mixed social background demographics, and of course Giddens (1991) and the mutually enacting agency and structure in his Structuration theory.

The above shows the quantity of research into the role of agency and structure on our behaviour, however there is considerably less literature specifically looking at agency and structure relating to exercise motivation and SWB. Ryan and Deci (2000, p. 68) incorporate the concept in their work on motivation and state human beings to be “proactive and engaged or, alternatively, passive and alienated, largely as a function of the social conditions in which they develop and function”. There is a pattern and multi-connection thread amongst the effects on WB, as shown in Figure 1. The postulation of Healthism in section 2.6.1 shows where agency and structure visibly matter.

In his book, Haybron (2008), briefly considers the history of WB and happiness, and further philosophises on the subject, claiming that "we should consider incorporating identity-related fulfilments into an account of well-being as part of self-fulfilment" (Haybron, 2008, p. 193). The differentiation between the individualist and contextualist view on WB, is where the individualist view puts importance on letting individuals determine for themselves what constitutes their sense of WB, whilst the contextualist focus is on people’s needs for community, meaningful work, and relaxation. Similarly, Synnot (1992) claims that the physical body is in this context a social construct, and that with each new age the body is re-constructed. Meaning, the

way we, as western society citizens, view it as influenced by the structure imposed by society. The idea of freedom of choice is central to western countries in relation to all aspects of life, and it would be unimaginable to be limited. An example of this, is the ban of television that citizens of Bhutan were subjected to up until 1999 for the sake of overall promotion of WB of those citizens and the community (Haybron, 2008). However, Bhutan is also mentioned in statistical literature on WB in relation to its government inclusion of the 'national happiness and well-being' aspect of measurement of the country's overall success, unlike raw GDP being the only measurement up until recently in western countries (ONS Census, 2015). There have been several statistics published which show various measures of WB and do not necessarily focus on causation, but on the ramifications, which of course in turn are of interest to governments and economies (ONS Census, 2015). There have been other earlier efforts by governments to consider the WB of citizens as a measure of the country's success, and women have reported a higher level of life satisfaction than men (OECD, 2014).

The topic of agency and structure is vast and worthy of its own thesis however, it is also important to the contemplation of MTE and WB behaviours. The above paragraphs outlined these principles. Furthermore, to combine the earlier Self-Determination Theory with agency and structure, De Charms (2013) said "self-determination is a basic human need and people will feel more self-determined if they perceive themselves being in control", thus outlining the locus of causality. To summarise this section, the author offers a quote by Indian 20th century philosopher Jiddu Krishnamurti, "all our thinking is a result of our conditioning. It comes from our accumulated experiences, memories, fears, hopes. Such a mind is obviously not free"

(Krishnamurti, 2019, p. 7), which resonates with this project and encourages its focus. The following section somewhat contrasts the agency and structure notion, and places personal responsibility for the WB behaviours on individuals.

2.6.1 Healthism

The term Healthism was first used in 1980 by Richard Crawford, a political scientist who positioned health and disease as a problem at the level of the individual (Crawford, 1980). He further grounds his theory in personal responsibility and accountability, by saying that WB is to be achieved primarily by change of lifestyle, which is personal responsibility. This can be linked to the rise of neoliberalism and other movements that put the responsibility for self on the individual, and consequently the opposing Structuration theory by Giddens (1991). It seems that healthism poses a contradiction between the advocated agency of a person to pay attention to positive exercise behaviours and the standards for it as dictated by structures in the contemporary world. Healthism puts the stress on personal responsibility for personal health, as a route to achieving optimised WB. It ignores the structure-driven aspects of life that a person is subjected to and so leads to blaming and judgement and ranking of people according to their health. This can have undesirable consequences where a person might feel internal oppression, which will lead to lowered motivation to improve their WB. So, the structure-dictated health image could compromise one's agency to act freely when making decisions about health and WB. This notion is related to other themes in this review, mainly via Figure 1, but also the demographic issues outlined in section 2.4.5. Hyland (1988), advocating against healthism, states that age, gender,

and ethnicity make a real choice impossible. This study anticipated data findings incorporating age, gender, and ethnicity, as variables affecting MTE and WB.

The western society considers personal responsibility virtuous (Resnik, 2007). Additionally, actions that result from a population acting with personal responsibility towards their health, contribute to better management of healthcare budgets. However, we are all different as individuals and such interventions, even if well meant, might not make all people happy all the time. The differences, physical, mental, emotional, cultural, or social, and the respect for those, could create more positive narratives within the population, in turn lessening the pressure to abide by a socially- or culturally driven ideal image of self. This research aimed to gather data which would likely show the level of perceived pressures that women consider themselves to be subject to and how that affects their WB journey. Based on the experiences from professional practice, the author aimed to effectively disseminate the findings of this study and intended to contribute positively to individual clients and professionals in understanding and establishing their own personal image of the ideal-self and with that their personal level of responsibility, compassion, and self-efficacy.

The concept of structure in relation to healthism is examined by Dolan (2019). He argues that the responsibility for better health and WB is a notion that is largely redundant, due to our lack of ability to influence SWB, because of the structure we were born into and raised in. Professor Paul Dolan is a considered figure in the academic field of happiness research and his book is supported by data, the contemporary context and acknowledgement of rudimentary life and its constraints. Perhaps it could be argued that Dolan (2019) in his conclusions presents distinctions that are too black-and-white and do not allow for gradation. The differences in our

individual circumstances, socio-economic and other demographic backgrounds indeed present an explanation to our actions and behaviours as outlined in section 2.4.5. These aspects pose a basis for our level of motivation, action towards SWB and personal responsibility. However, there is still scope for agency. Perhaps trying to better our SWB with compassion for ourselves would be of benefit in real life situations, opposed to using structure as an explanation of our limited agency to a point of freedom and personal responsibility being redundant. Archer (2003, p. 15), in her depiction of agency, outlines this notion as internal conversation in which we "reflexively deliberate" the extent of our agency within our structure. In doing so, one is interacting with the social environment, and their agency in turn interacts with their structure. In relation to this, there was an anticipation for findings in this project to produce rich data illuminating the differences in respondents' inner speech (Archer, 2003) and the perceived effect of structure on agency on their behaviours. This personal narrative notion would provide a basis to the exploration of the respondents' conscious ability to act positively towards their SWB.

Healthism is indeed an interesting view and further research builds on it (Steinbrook, 2006; Stamp, 2019). The way we shame ourselves within our inner speech for failing perceived societal expectations in the way we fail to exercise or diet (Stamp, 2019), links to the inner speech concept by Archer (2003). This is based on the belief that social pressures present some level of required standard of behaviour or way of presenting ourselves to the world around us. Linking the above together, Steinbrook (2006) states health to be part of a social identity, and consciously practised responsibility for it a sign of virtue. This also dispenses the level of judgement and potentially leads to perceived blame, with adverse effects on our level

of positive IM. Steinbrook (2006) further uses language which refers to ‘good patients’ as those who take personal responsibility for their health. He grounds his argument in the support for creating economic stability if individuals act responsibly, with less interest in the personal level of happiness of those individuals. Once again, a compromise might be of benefit here, where aiming to try for betterment of self but in conjunction with compassion for self and others, could produce better results for the collective.

The personal responsibility perspective is unfortunately often littered with words that apportion blame or praise virtue (Brownell *et al.*, 2010), and as such do not provide constructive solutions for those who would welcome them. Even literature that aims to report objectively on the benefits of personal responsibility within a specific spectrum (Howarth, Swain and Treharne, 2011) acknowledges the wording within neoliberalism to be challenging. It is perhaps of cultural importance to be watchful of the language that is used when prescribing a degree of personal responsibility. However, to arrive at the desired outcome, in this case the increase in effort towards betterment of personal WB, some level of honesty with self is needed (Dolan, 2019). Within the culturally affected appropriateness of language lies the subsequent avoidance of personal responsibility as an issue within motivation and SWB. The assignment of responsibility to governing bodies (Brownell *et al.*, 2010), such as NHS or others rather than self, often takes place in real life. As within the food industry, where governments are under pressure to affect the health of citizens positively, by limiting or penalising the sale of sugary drinks (Scarborough *et al.*, 2020), it is similar within other aspects of human WB that directive towards personal responsibility is lacking (Dolan, 2019).

2.7 Qualitative experiences of SWB

The qualitative phase 2 of this project, where data were proposed to be collected via semi-structured interviews, was intended to incorporate questions about the participants' attitude to their SWB, and any changes they experienced. In essence, the aim was to establish what the participants consider to be a part of their WB, and if their views changed with age. The psychological aspects of WB, as discussed above, are vastly documented. This study's investigation incorporates the notion of 'approach-avoidance conflict', which refers to an event with positive and negative effects making it concurrently appealing and unappealing (O'Neil *et al.,* 2015). In other words, going for a walk as a form of exercise has an appeal for the benefits of fresh air and increased sense of WB, however it requires effort, thus being appealing and unappealing at the same time. This aspect of the investigation links to section 2.5.3, on MTE. O'Neil- *et al.* (2015) also state that when we approach a goal with conflicting feelings, the acknowledgement of negative feelings increases, creating indecision and potentially the avoidance of the goal. This brings us to the heart of the experience, as well as the behaviour of the decision maker. Approach-avoidance conflict might play a role in decision making regarding WB, and the concept was incorporated in the data collection design. The semi-structured interviews, as a way of collecting qualitative data, reported in detail on respondents' experiences and self-reported narratives. How much they exercise empathy for self and others would arguably have an impact on their sway towards a positive goal in the approach-avoidance scenario. Inevitably there are as many qualitative, subjective experiences of WB as there are people in a population. The way these have been measured are outlined above as largely

quantitative (Eid and Larsen, 2008; Diener *et al.,* 2009). This study aimed to bridge the gap by approaching the problem from a mixed-methods design.

2.7.1 Measuring of subjective well-being

WB has been measured over last several decades in variety of ways and from an even wider variety of angles. Often some of the general societal preoccupations of the time are reflected in the literature. Subjective measure of WB emerged in the 1920s in studies on marital satisfaction and personality psychology, and further on in mental health and social indicator measures in the 1960s (Angner, 2011).

Campbell (1976) battled with the then current state of reporting on the WB of American society, openly criticising the reporting on WB in economic terms. He mentions the speech by Dr Tolman in 1941, which predicted the shift from 'economic to psychological man' and thus from economic needs to an ego-driven need for dominance, prestige, and achievement, and how that prediction did not quite materialise at the time. It is worth to mention that this focus resonates with Maslow's hierarchy of 'higher needs' (Maslow, 1943), which states that when basic needs are satisfied, there is a scope for person's growth and actualisation, and motivation for education and success in other terms naturally occur. Campbell (1976) illustrates the progress within the western society from WWII into the 1970s, the re-building of economies and the effect of that on how our WB is measured by economic statistics. It seems that his effort was to show the importance of self-reporting on SWB in terms of a variety of subjective indicators. As part of his critique of the economic growth measures being measures of human WB, he states the economic growth happening

over a period, which also represented the “phenomenal growth in crime, public violence, drug use and fragmentation of families” (Campbell, 1976, p. 117). With the focus on psychological WB, he builds on Bradburn’s Scale of Affect Balance (Bradburn, 1969) as mentioned in section 2.4.1, which is a self-reporting measure of quality of life. Both authors provide early support to the self-reporting of WB, thus relating to this study. In practical terms however, there is lack of relatedness of present-day western society to that of a second-generation post WWII. It would have also been of benefit to future research and for comparison of survey styles over time, for Campbell (1976) to provide information in practical terms on how he proposes to gather self-reported data, including samples for the purpose of replication.

Moreover, Bradburn (1969) summarises the study of psychological WB as a dependent variable and the positive and negative effects of life on psychological WB, where WB is the combined function of the two variables. Some of the findings propose that self-reports are to an extent flawed because respondents, and people in general, do not, cannot or will not tell the truth. From the perspective of this research therefore, it was of interest to see if self-reported levels of WB correlates with other measures, such as age or exercise motivation. The trends emerging from qualitative interviews could indicate interdependence on specific trends within the quantitative data. The other useful point made by Bradburn (1969) is that of the difference in WB experience amongst ordinary individuals conducting their lives best they can, related to the degree and duration of hardship experienced more by some and less by others. These variations, he states, are not random and are dependent on socio-economic aspects, which rounds this section to earlier accounts in section 2.4.6. Hence, as above, this informs the research in the variables criteria and interrelatedness, specifically in the

above-stated aspects. One could also argue that, whilst respondents might not always give an accurate account, the level of not telling truth is dependent on culture, social norms, and the time in history. Some cultures encourage honesty, whilst others encourage politeness (Holmes, 2013; Youmans, 2017) and with that corresponds with the spoken or unspoken social narratives of that culture. Equally, the time in which we live comes with its own set of social rules, depending on where in the world one resides. On this basis, it is reasonable to conclude that present day data collection from a sample of UK based respondents is likely to produce valid data.

Griffin (1988) considers agency, as well as moral and ethical grounds of WB studies, and the potential ways to measure it in a book titled title *Well-being.* The title provides anticipations for somewhat different information than what it provides. The book is a vast philosophical pondering of the author who, whilst considering the measures of WB, simply concludes those to be quantitative, and any qualitative potential is lost in the speculative theorising. There is one point that the writer considers, which links to this research, and that is his consideration whether it is "effectively possible to compare one person's well-being with another's" (Griffin, 1988, p.76). The issue suggests that the term 'subjective well-being' might be of use here, which paves the way to the next decade and to further research.

It is important to mention the development of methods and methodologies in academic literature about exercise and WB. Pavot and Diener (1993) presented an overall summary of SWLS, which has been widely used in social sciences since it emerged in the 1980s, as an instrument of measurement for WB. Pavot and Diener, in their 1993 article state, "…in making life satisfaction judgement, the SWLS emphasizes the person's own standards of evaluation…" (Pavot and Diener, 1993, p.

170). This provides information to be considered for the choice of methods in this research. There are of course limitations to the SWLS in that the respondent has less freedom to express themselves, and their answers might therefore be distorted or misrepresented. Pavot and Diener (1993) note that the SWLS cannot be used as a direct measure of emotional well-being and that it measures the cognitive but not the affective aspects of SWB. This is a very useful review in that the report directly informed the choice of methods in both the quantitative and qualitative data collection, where this study aimed to gather quantitative data to establish trends and supplement this with semi-structured interviews, to gather rich qualitative information of the respondents' life experience. This combination, which the mixed-methods design allowed for, would therefore contribute clearer and better represented respondents' views and answers.

The Organisation for Economic Cooperation and Development (OECD) started officially measuring human WB in the 1990s, in relation to the WB of nations and social capital (OECD, 2001). The 1990s offer research with more varied methods in research of happiness and its effects on success in life in general, from the perspective of the western population (Lyubomirsky, King and Diener, 2005). Social sciences, which relate to this research in the methods used (Diener *et al.*, 2009; Layard, 2010; Forgeard *et al.*, 2011), are further explored in Chapter 3 on Methodology.

Furthermore, the CSDT (https://selfdeterminationtheory.org/questionnaires/) offers previously used and validated methods of data collection on both, vitality as a measure of WB and exercise motivation. The next section outlines the interest in statistical measures of WB.

2.7.2 OECD, ONS, SAGE and statistics on human well-being

There are several organisations which gather statistical data on human WB. Where used by governments, the data are focused on WB of populations or nations, often in relation to the economic progress. As previously mentioned, there are governments that use statistical information about their citizens' sense of WB to measure the overall success of their country. Whilst most governments still focus on economic factors to measure the WB of the population, statistical reports on the various aspects and qualities of WB are ever increasing. Based on the actions of Bhutanese leadership (see section 2.6), the UN general assembly in 2011 recognised happiness as a fundamental human goal, and in 2012 published the first WHR (Meier and Chakrabarti, 2016). The WHR 2020 (Helliwell *et al.*, 2020), based on information from 156 countries around the world and the Gallup World Poll, based in Columbia University and supported by several other organisations, has focused on environmental issues. It reported that caring for others contributes to one's happiness and so to happiness of the nation. Furthermore, it reports "the same social connections that favour current happiness are also likely to support actions to improve the quality and security of the environment for future generations" (Helliwell *et al.*, 2020, p. 9). This shows the importance of WB of individuals and the subsequent impact on future generations. This research intended to not only produce further information on the topic. Furthermore, based on the author's professional experience, working on a variety of aspects of SWB including self-doubt and a lack of long-term motivational states, this research project's questions produced first-hand reports from respondents.

In 2003 the Centre for Economic Performance (CEP), attached to the LSE, began research following lectures by Richard Layard on happiness and social science. His views explored the paradox of western societies getting richer and the population not getting happier. Consequently, in 2020 he produced a book which proposes how we can create a happier society. Over the years the CEP has produced articles based on longitudinal studies, as well as short-term studies, into the variety of WB aspects. Presently, the CEP focuses on mental health, which is unquestionably of import in the current COVID-19 affected world.

The OECD (2001) confirms that GDP is limited at best as a welfare measure of a population and supports the measurement of WB which has expanded exponentially between 2008-2018. It also states that the measuring of WB is only one facet of the problem and findings are of value but need to be implemented in government policies. This further supports the need for more awareness of what constitutes our WB, and the refinement of the questions surrounding it. The OECD (2001) further proposes a conceptual framework of WB, which accounts for Health status, Work-life balance, Education, and skills, social connections, Civic engagements and governance, Environmental quality, Personal security and SWB, as well as material conditions such as Income and Wealth, Jobs and earnings, and Housing. Some of those have been explored in the paragraphs above, whilst some have not. Those that have, are closer to this research and therefore more relevant. The OECD specialises in governmental policies, and it approaches WB from a somewhat different angle than this project. It is however important to include as many angles as reasonably viable, to understand the issue fully, and implement definitions, advice, measures, and policies that have the potential to be implemented effectively.

The Office for National Statistics (ONS), since 2010, measures the national WB of populations based on international comparison. Their data are a combination of OECD, Gallup World Poll, United Nations, World Health Organisation, and others. ONS views personal WB as a "subjective assessment of how people feel about their own lives" (ONS Census, 2019, p. 3) but focuses on overall satisfaction with life, whilst this research intended to establish the level of WB within a life of an individual respondent, as well as the related aspects. The last report on this subject offered by the ONS was prior to COVID-19, and the pandemic-associated issues were therefore not included.

Lastly, whilst SWB is reported the most common measure of WB (Diener, Lucas and Oishi, 2018), there are several ways previously advocated as a suitable measure of WB include subjective and objective aspects of WB (Diener *et al.*, 2009).

2.8 Chapter summary

The literature review chapter outlined the existing literature on WB, motivation, MTE, and related aspects. Furthermore, it concluded gaps where research is limited, specifically to aid the formation of research questions. There are various aspects of WB and many theories related to the subject. Only some have been noted above to best relate WB to other possibly affecting variables considered within the project. The physical self and care for self via exercise has been considered, once again to determine the gaps that underpin this study's RQs. Each section detailed the literature's theoretical framework, concepts, the tradition from which publications emerge, and the objectivity and credibility of the knowledge they present. The review

of existing literature was conducted in relation to the proposed research and its justification (see section 1.2 in the Introduction Chapter 1), as based on the revealed gaps in the literature. The research questions and overall aim of this research are in part built on that knowledge:

RQ 1. What is the relationship between the motivation to exercise and overall subjective well-being in women? (Quantitative)
RQ 2. What are the common motivators and the barriers to exercise for women? (Qualitative)
RQ 3. Does a woman's age play a role in the reported dominant type of motivation to exercise? (Quantitative)
RQ 4. Does a woman's age play a role in the reported level of well-being? (Quantitative and Qualitative)

The gaps in previous research on MTE have been established to be in relation to its effect on WB in women in the UK. The literature on WB provides an outline of the varied definitions of WB and the gaps in the theory of overall WB, inclusive of physical, mental, and emotional WB. The measures of WB used in previous research show gaps in data based on personal detailed narrative, largely due to the use of quantitative methods. This study aimed to contribute to the existing knowledge by the provision of valid and reliable results by adoption of a mixed-methods design and was set to determine the correlation between MTE and WB, incorporating age and ethnic background and a UK based female population sample.

Several theories related to motivation, self-regulation and other related concepts have been included in this chapter. They all provide important context of the topic and show what had been done already. Not all outlined theories and their aspects could have been included in the project due to its scope.

The next chapter outlines the Methodology of this project, the justification of methods as based on existing literature and the intended implementation.

Chapter 3: Research Methodology

3.1 Introduction

The Methodology chapter builds on the previous chapters, which introduced key concepts, provided definitions, and reviewed existing literature. Some of the sections below include a repetition of the theoretical frameworks, objectives, and research questions, to link those to the methodology and methods. Furthermore, this chapter considers reliability, validity, generalisability, and transferability, as well as sample specifics and ethical considerations. It introduces the methods used for data collection and analysis, as a prefix to the following chapters. In the concluding paragraph the methodology and methods, and the justification of the project from the perspective of those, are summarised.

To remind the reader, the research aims and objectives which are outlined in detail in Chapter 1, set out to assess different types of MTE and the correlation with the overall subjective, self-reported WB in women in the UK. The aims, as reflected in the research questions (RQs) and hypotheses (Appendix 12) were to ascertain whether age affects the prevalent type of MTE and reported levels of WB, and to identify some of the main motivators and barriers to exercise from a woman's experience perspective. The RQs reflect the aims and objectives. This chapter considers the underlying aspects of methodology, including the epistemology and philosophical perspectives, leading to the use of specific methods to answer research questions and address aims and objectives.

3.2 Epistemological stance and philosophical perspectives

This project was a part of Professional Doctorate studies, based on the professional experiences in the researcher's field of work, knowledge acquired over time within the researcher's profession, and in their academic interest in the topic. The philosophical stance developed over time and at commencement of the study was based on the above experiences. The researcher's wider interest, as based on professional knowledge and experiences, was in overall human WB, the individual perspectives on what it is to be 'well' and the states of motivation to look after our own WB. This knowledge underpinned the philosophical stance and positioning of the researcher within the project. The learned researcher objectivity, for example, was consciously enforced due to the awareness of pre-existing assumptions. These assumptions occurred as professional knowledge was acquired, and the insider positionality was consciously managed by adopting the 'observationalist' view (Labaree, 2002). The above considerations applied especially to the stages of the interpretation of data.

In this study the epistemology was observable, whilst subjective and the underlying philosophical view was pragmatic. In the context of the project the aim was for the dissemination of findings in professional practice and the creation of the foundation of practical meaning of new knowledge (Saunders, Lewis and Thornhill, 2016). The researcher's values, observing pragmatic axiology, played a role in the data interpretation, as well as the study's conclusions. The axiology as a study of value judgements have played a role in the design of this project’s methodology and applied methods. However, the ontology here was somewhat interpretivist in the view

of enquiry because the respondents' opinions on WB have been subject to social and cultural conditioning (Giddens, 1991). It is noted that the interpretivist approach suits research which formulates a hypothesis, based on data findings, which was not the case in this study. Thus, triangulation of stances and philosophies was part of the researcher's positionality.

Pilling (2019) states that only in time of economic prosperity and financial ability does an individual's WB become a cognitive pre-occupation. The motivation to care for the needs of our WB comes after our basic physical needs have been satisfied (Maslow, 1943). Furthermore, there is a difference in views on the subject within different demographic groups (www.ons.gov.uk/peoplepopulationandcommunity/wellbeing). These statements show that a variety of aspects of a woman's life would potentially influence how she perceives her WB and her MTE. Hence, the challenge to establish epistemic objectivity was carefully considered throughout the entire project. This is also partly based on the investigation being grounded in a subjective perspective within professional practice. There is some evidence of the use of a mixed philosophical view within research projects in the field of medical intervention in mental health affective WB (Gross, Uusberg and Uusberg, 2019). The Gross, Uusberg and Uusberg (2019) paper outlines an investigation within the field of WB and shows the effective use of mixed philosophical perspectives.

As stated above, the epistemology of this project was subjective in the respondent's personal narrative and observable in the researcher's analysis of the data (Saunders, Lewis and Thornhill, 2016). The ontology, however, was more interpretivist in focus, due to the social constructs' impact. It could be argued that as one attends to the

needs of their WB after satisfying basic needs (Campbell, 2016), the order of subsequent needs is subject to socially and environmentally constructed pressures rather than being the representation of personal freedom and agency. The existing literature that covers published research on this topic in social sciences, shows varied philosophical approaches, dependent on the specifics of the research project. There is some evidence of similarity in the philosophical approach in some research papers within health and WB. Domínguez-Serrano, del Moral-Espín and Gálvez Muñoz (2019) showed similarities to this project in the structure and planning of their research, aligning their philosophical perspectives with methods and at length expressing the researcher's approach with clarity and transparency. Although their paper stated critical realism as the overarching philosophy, and so differed from this projects' pragmatic approach, their structure and focus on the central matter examination throughout the study was, to an extent, an inspiring format.

As philosophical stance is not necessarily directly referred to in research papers, the underlying philosophy must be at times determined based on the author's approach. The chosen research methods, the write up itself in the ontology, epistemology and axiology expressed within it are also useful indicators. Johnson's (2008) book, documenting the spread of cholera in 19th century London and the fight of the medical profession to discover the reasons beyond the spread of the disease, showed how assumptions can negatively influence the search for answers. Johnson (2008) states, "…dominant intellectual paradigms can make it more difficult for the truth to be established, even if the people involved are smart and attentive and methodical in the research…" (Johnson, 2008, p. 165).

This project aimed for objectivity, with a consciously pragmatic view of ontology and epistemology, describing personal reality as very complex. The methodology and subsequent use of methods were based on an alert knowledge of philosophical approaches and the effects of those, as described above. These steps were carefully observed to contribute to existing research and to professional practice in a meaningful manner.

As stated above, the aims of the project and therefore the subsequent research questions, were partly based on existing professional experiences and knowledge. To then design a research project that would in an effective way answer those questions, suitable methodology had to be decided on, further adhering to the philosophical approach. The methods used in social sciences research and outlined in existing literature varies (Johnson, Robertson and Cooper, 2018; Mogilner, Hershfield and Aaker, 2018). Fox (1997), noted in the Literature Review chapter, advocates multiple methods of investigation to increase validity of findings, where single method of investigation cannot provide a complete picture of the riches of human thought and behaviour. This is in relation to the behavioural science of WB and care of the physical self via exercise. Based on a lengthy process, mixed-methods research was determined to be the best fit for this project. The mixed methods design in the first stage, and via the quantitative questionnaire, collected data showing trends. In second, but equally important stage, semi-structured interviews collected rich qualitative data. Saunders, Lewis and Thornhill (2016) summarised research methods as secondary to the issue of paradigm, and the researcher's own view and beliefs were anticipated to somewhat guide the investigation. However, one could argue that with or without knowledge of philosophical paradigms, the project strategy would have

been the same, whilst missing the awareness of insider positionality and its effects. As a part of the doctoral research journey, new knowledge was acquired and with that an appreciation that allowed for more conscious objectivity and overall effectiveness.

Pragmatism as a philosophical stance allowed for knowledge from professional practice to be combined with academic work, in preparation for the research project itself. It also underpinned the type of data collected, and the reciprocal contribution of findings to the professional field. It fitted well with the mixed-methods approach, which in turn accommodated the research questions. Lastly, pragmatism anticipates the researcher's values to affect the data interpretation. Creswell (2014) gives some practical definitions to pragmatism, following an extensive body of literature devoted to philosophy in early 20th century (James, 1995; Dewey, 1998), to modern times (Rorty *et al*., 2004). Pragmatism as a view of the world arises in actions and situations, rather than antecedent circumstances such as in post-positivism; it is concerned with a practical application (Bryant, 2017). The focus is on the research problem and methods as tools to be used to solve that problem (Creswell, 2014). Pragmatism in social sciences was conveyed by Tashakkori and Teddlie (2010) in mixed-methods application.

It ought to be noted that whilst the umbrella philosophy for this project is pragmatism, which allows for pragmatic knowledge claims and for the choice of best-suited methodologies for the project (Tashakkori and Teddlie, 2010), there are various approaches to the problem and alternative research could choose a different stance. For example, Creswell (2014) outlines the befitting paradigms within the explanatory sequential design as postpositivist for phase 1 and constructivist for phase 2. The author accepts that researchers use multiple philosophical positions and explain the

shift from postpositivist to constructivist philosophy within the mixed-methods design. The researcher is stated to start from postpositivist stance to develop instruments and measure variables in phase 1 and move onto assumptions of the constructivist paradigm to appreciate the multiple perspectives and in-depth descriptions of the qualitative phase 2. It is noted that the positivist approach is suited for the quantitative method, with a hypothesis tested by data analysis.

Further to the multiple philosophies regarding the different stages and aspects of this project, to draw on those statements of mixed philosophies and to marry those with the mixed-methods approach, potentially adding an additional paradigm of critical realism at this stage might be useful. Critical realism considers entities to be partially perceived and existing independently to perception in part, and knowledge to be partial, incomplete, and uncertain (Creamer, 2018), which certainly resonates with the conclusions of this project. The mixed methods are suited to multiple paradigms and were compatible with the separate strands. Schoonenboom and Johnson (2017) draw further attention to the careful consideration of all primary dimensions of the mixed-methods design, including the purpose and the theoretical drive. Based on the above the plan for action using mixed methods within this project was implied by the reasonable conclusion inferred from the literature.

3.3 Research design

> In the publication *Subjective Measures of Well-being* the author states:
>
> Social indicators cannot be classified as either ‘objective’ or ‘subjective’ since there are many gradations. Neither can one measure well-being in the main, because that term denotes different matters that cannot be meaningfully summated. The most subjective measures of subjective

> wellbeing are self- reports of satisfaction, and the most comprehensive measure of that kind is satisfaction with life-as-a-whole, shortly called life-satisfaction or happiness (Veenhoven, 2007).

This paragraph eloquently summarises one of the most important aspects of research into subjective issues and as such is best quoted rather than paraphrased. This project was designed in its methodology and use of methods with great attention to detail, respecting each respondent and their views, as well as the academic research process.

The project planning followed the 'research onion' (Saunders, Lewis and Thornhill, 2016) in the way of designing and strategizing and was concluded as follows:

Philosophy: Pragmatism, with a wider Positivist approach to RQs and hypotheses being tested by the data findings

Approach: Deductive, Explanatory phase 1; informed by phase 2 which followed the Inductive Exploratory approach

Choice: Mixed method sequential design (phase 1 followed by phase 2)

Strategy: 1. quantitative phase (questionnaire)

2. qualitative phase (semi-structured interviews)

Time horizon: Cross sectional

Sample: female respondents over the age of 18, residing in the United Kingdom. The desirable population sample size was based on previous research sample sizes (ONS Census, 2019)

As the RQs were rooted in professional practice experience and the review of existing academic literature, so was the methodology of this project. Existing literature

showed gaps in the research itself, as stated in Chapter 2, as well as in the methods and methodologies used. This project aimed to fill some of those gaps in fulfilling the potential of this research. In recent years the prevalent choice of methods in social sciences research, specifically within the health and WB sector, was quantitative (Fortier *et al.*, 2007; Layard, 2010; Kopsov, 2019). The instruments of measure varied from SWLS to Interdependent Happiness scale (Zabriskie and Ward, 2013; Hitokoto and Uchida, 2014; de Souza *et al.*, 2015).

Krys *et al.* (2019) measured life satisfaction across four countries and concluded family WB to be of higher importance than personal WB. Research into MTE has been based largely on quantitative data collection via survey and closed questions (Deci, 1971; Deci and Ryan, 2008a). This presented a gap where respondents lacked the freedom to express the detailed narrative of these subjective topics. Considering this, the approach of this study was set to establish trends via the quantitative phase 1 of the mixed-methods design, but to also, and with equal importance, collect rich qualitative data from the personal narrative of the respondents, based on and informing those trends in the qualitative phase 2. Therefore, a more detailed examination of existing literature led to the sequential explanatory research design (Saunders, Lewis and Thornhill, 2016) that gave structure to all the aspects of the investigation. However, it was noted that the qualitative phase 2 has qualities of an exploratory approach, in that it aimed to inform the phase 1 by collecting rich qualitative data. Essentially, the aim was to collect data on strong trends within the female demographic and allow for subsequent detailed interviews to inform those trends, specifically from female perspective. The terminology and questions asked in the phase 2 semi-structured interviews were

based on the emerging trends from the phase 1 questionnaires. Therefore, ensuring that any conclusions would effectively contribute and relate to existing knowledge.

Starting with the quantitative phase, grounded in explanatory design, to examine and explain relationships between variables, both sets of data were determined to be of equal value, with the qualitative data bringing weight in its rich narrative. Therefore, both sets of data were to be of equal importance and equal status (Greene, 2006). The design was such that the two sets of data would interact and "the outcomes they produce were integrated during and at the end of the research process" (Schoonenboom and Johnson, 2017, p. 112). Both sets of data underwent equal rigorous scrutiny. The quantitative data brought up the emerging themes, however the RQs were answered by both, the quantitative and qualitative phases. Furthermore, in the analysis of the qualitative data the aim was to draw on phenomenology to view the data as a reflection of events that the respondent perceived, not of reality as existing in vacuum (Aspers, 2009). The qualitative phase uses hypothesis with a qualitative aspect. The use of hypothesis in qualitative research is for fundamentally different function than in the quantitative research. In qualitative research, instead of testing of the hypothesis, a hypothesis is used in the form of a 'clear statement concerning the problem to be investigated. Unlike in quantitative research, where hypotheses are only developed to be tested, qualitative research can lead to hypothesis-testing and hypothesis-generating outcomes' (Chigbu, 2019).

The table below provides a summary of aspects of quantitative and qualitative approaches, thus outlining the combined mixed-methods approach.

Table 1: Potential contributions of qualitative and quantitative approaches to a mixed-methods study by phase (Creamer, 2018, p. 9, adapted table)

Research process phases	Quantitative	Qualitative
Design	- variable oriented (offers breadth) - addresses 'what' and 'why' questions	- case oriented (offers depth) - process oriented - can also address 'how' questions
Data collection	Numbers	Words
Sampling	Allows for generalisability	Can pursue negative case or exemplary case
Analysis	Deductive Confirmatory Used to test theory	Context bound Inductive and sometimes emergent Exploratory Used to produce or modify theory
Inferences	Interpretations that extend the data	Interpretations that extend the data

To address the research problem, the mixed-methods research design is both, methodology and a method (Creamer, 2018). It involves collecting, analysing, and mixing qualitative and quantitative approaches (Creswell, 2014). As a methodology it "involves philosophical assumptions as a guide" (Creswell, 2014, p. 4). As a method it combines the quantitative and the qualitative approach in collection and analysis of data, to create better comprehension of issues in research, more so than those individual methods alone. Creamer (2018) states that a fully integrated mixed-methods design combines the quantitative and qualitative in all five phases of a project (design, data collection, sampling, analysis, inferences). A meta-inference (Creamer, 2018) which is closely tied to the analysis results merges results from the two phases and further compares, contrasts, and modifies inferences generated by the two strands (Tashakkori and Teddlie, 2010). It is noted that that analysis of qualitative data, whether using TA or other means of analysis, includes potential of bias. Furthermore, the qualitative analysis is subject to interpretation bias by the author as a sole executor of the analysis. The meta-inference of the two phases, and whether the qualitative phase confirms or contradicts the quantitative phase findings can pose a useful tool for confirming results and refuting bias. Using a typology-based way to the mixed-methods design as a guiding framework, a sequential mixed-methods design (Tashakkori and Teddlie, 2010), specifically a sequential explanatory design, which compares relationships between variables was implemented (Creswell, 2014). There are many theories in the integration and interaction of data in the mixed-methods design including Morse and Niehaus (2016) and Guest (2013).

Whilst it is noted that the mixed-methods design can be challenging to implement, it was carefully chosen for the specific needs of this project. The

complementarity of the two methods creates an expansion within the data and as those reasons were set from the start, others could surface during the study. Whilst interaction of the two strands in mixed methods can occur at different points of research, the point of interface (Morse and Niehaus, 2016) or when the two strands interact, was anticipated to be at the point of the quantitative data analysis stage when the qualitative questions emerged. However, some of the qualitative RQs presented themselves much earlier and only one additional question was added post-quantitative data analysis. Hence the two strands began to interact within the process of design. The quantitative data were analysed first, followed by the qualitative data collection and analysis. The interactive strategy of merging allowed for the results to be related to each other in comparison and interpretation (Creswell, 2014). The selection of phase two participants was based on phase 1 data, and the follow-up explanations variant of the exploratory design was chosen over the quantitative-preliminary variant (Morgan, 1998), with the belief that this variant was better suited for the phase two. The mixed-method sequential strategy fitted the research problem and allowed for the project to be manageable and logical in flow. The purpose of the explanatory sequential design can be, among others, the want to use the respondent data to guide purposeful sampling in the qualitative phase (Creswell *et al.*, 2006; Tashakkori and Teddlie, 2010). The strengths of the explanatory sequential design are in many ways related to the somewhat straight forward implementation with a strong quantitative start, where the second phase can be designed based on the first phase findings (Creswell, 2014). In terms of reporting of findings, the design has a clear delineation in the report, where quantitative section is followed by qualitative section. The

anticipated challenge presented by the mixed methods was the protracted timeline of the project.

3.4 Quantitative phase 1 methods

3.4.1 Introduction

The Quantitative methods chapter is split into sections outlining separate aspects resorting under the Methods heading. Those are: Sample, Data Collection, Pilot study, Data management and analysis.

As stated in previous paragraphs, the mixed-methods strands were, from the initial stages of the project, set to inform each other. To reflect that, the RQs were noted as having quantitative or qualitative aspects but were dependent on each other in most cases. The methods of data collection and analysis then respectively reflected the RQs and hypotheses. Equally, the population sample reflected the aims and objectives of the project.

3.4.2 Sample

Sample of population in research is documented to be a subset of population from which data is gathered and said collection reflects specifics of that population (Singh and Masuku, 2014). In this study the female demographic was set as the population to be studied. The ONS (2012a) states the UK population to include 50.7% women, with those over the age of 18 accounting for just over 25 million in the UK.

Whilst representation and generalisation are important in most research, the sample size and selection did not aim to represent the overall adult female population of UK, in part due to the adaptation of the MTE instrument of measure and use of only 5 subscales, as detailed below. With the aim to collect data leading to valid conclusions, with some ability for generalisation, the sample size followed existing literature (Markland, 2009; Lovell *et al.*, 2016). It was acknowledged that the size of the population, in relation to the size of the sample, was such that the generalisability would be limited. A larger sample size would increase the statistical precision and avoid type II error (Saunders, Lewis and Thornhill, 2016). However, the limitations of this study in terms of time, cost and logistics also had to be considered. Hence the approach to follow existing literature when selecting a sample (Markland, 2009; Lovell *et al.*, 2016) was determined to be most practical, and in addition the calculation of sample size for 10+/- precision level was considered, where 95% confidence level and p=0.5 at 100 respondents in population above 100 thousand was set as acceptable (Israel, 1992). It ought to be noted that the project did not aim to represent the whole of female population of the UK. The representation was limited to women of adult age of 18 or over, and those who experienced some type of motivation to exercise minus amotivation.

The initial strategy was to collect data from 120 female respondents in the quantitative stage, and 10 respondents from that sample for the following qualitative stage. This preliminary number was based on existing research in social sciences and as close to the specific themes of this project as possible (Markland, 2009; Lovell *et al.*, 2016). The design stage set a benchmark to accommodate up to 10% of data if ineligible. If above 10%, further data collection would have taken place to achieve an

active response rate at an acceptable level. However, this contingency plan was redundant, as the actual number of participants was higher in both stages. The strategy for sample size was consciously based on using previous research as the best indicator for size of the sample (Edmunds, Ntoumanis and Duda, 2008; Markland, 2009; Markland and Tobin 2010; Lovell *et al.*, 2016), in combination of said research also using one of the formats of the BREQ scale as an instrument of measure. The sampling strategy accounted for possible sampling error by carefully screening the collected data from the sample. Whilst there is always a chance that the sample will not represent the true population value, the analysis and screening of the data prior to it, aimed to arrive at a confidence level showing the true picture of the population. The degree of variability for the largely homogenous population (female, adult age, varied ethnic background) created the need for a sample size that represented the population, but could be based on existing literature. The size of the sample was also determined with consideration to saturation issues, to collect meaningful data.

The main demographic specifications for this project were for the sample to be of female population, over the age of 18 and residing in the UK. The distribution of the survey was such that not all the above could be reasonably controlled. The demographic questions at the start of the survey partly ensured that the collected data fell under those parameters and allowed for a required level of control. The distribution was via groups with some connection to positive exercise and diet behaviours, using bodies external to the researcher to reasonably eliminate response bias.

The sampling methods for the qualitative phase 2 was informed by the quantitative phase 1 regarding the age and ethnicity. The quantitative phase 1 results showed a representation over four age groups and 18 ethnic groups. The sampling

within the qualitative phase 2 therefore aimed for the representation of age groups and ethnic groups to replicate phase 1.

The demographic questions included age group, based on recommendation by GSS (*GSS*, 2020). Searle (1996) states that a vast variety of factors can influence 'actual human efforts', age and gender amongst those. The age determinant of the sample was set by following guidelines from GSS and recommended by ONS data collection standards for the census 2012. The standardisation applied to this project specifically followed guidance for Grouping B standardisation (https://gss.civilservice.gov.uk/policy-store/age-and-date-of-birth/), with additional change to accommodate the over 18 age requirements of this project. Therefore, the age demographic question was phrased accordingly (Appendix 1). There were five age groups: 18-24, 25-44, 45-64, 65-74 and 75+. The representation of age groups in quantitative phase 1 informed the sampling for qualitative phase 2. This strategy ensured collection of data that is relevant and representative of the sample, hence the analysis could produce valid findings. Once more, the generalisations made, based on the research findings, had to be made carefully and with respect to the age groups represented by majority. Therefore, all age groups which were represented in the quantitative phase were also in equal terms represented in phase two.

This project aimed to be a single culture analysis however, with additional demographic question on ethnic background to collect richer data to understand the examined population from a variety of cultural backgrounds. The ethnicity that a respondent identifies with plays a role in their life narrative (Blanchard *et al.*, 2003), which draws on views on a variety of factors influencing actual human efforts in the quest for the representation of reality in a true form (Searle, 1996). The demographic

question of ethnic background in the questionnaire was designed as recommended by GSS (*GSS*, 2020; ONS 2012b) (Appendix 1). All respondents were female and residing in the UK, however which ethnic group they identified with could have influenced the two variables of exercise motivation and WB.

Furthermore, some of the initial screening of the data showed unequal representation within demographic groups. However, due to practical reasons the survey was not extended to collect an equal amount of data for each group. Instead, a decision was made to accept the data results and acknowledge the limitations to generalisation of findings. However, the unequal representation within phase 1 was respectively applied in phase 2 where respondents were selected to, where possible, mirror the representation of ethnic backgrounds from phase 1.

Regards to the gender demographic question and its phraseology, ONS guidelines for census 2021 were followed. The ONS Census (2021c) recommendations are based on rigorous research and indicates that participants appreciate when rights to their expression are respected: "Knowing a gender question will follow is reassuring and helped to reduce dropout from answering the Census" (ONS Census, 2021). The ONS further recommends following the GSS harmonisation (*GSS*, 2020) when collecting age demographic data, where harmonisation is the process of making statistics and data more comparable, consistent and coherent. This harmonised standard sets out how to collect and report statistics to ensure comparability across different data collections in the GSS. Additionally, as the title of the research project clearly stated that it is concerned with a female demographic and was subsequently distributed to that demographic. However, it was nonetheless essential to include the gender demographic question to give

respondents the opportunity to freely show which gender they identify as. Additionally, this was to ensure effective sample screening and allowing for the analysis of data collected from respondents who state their gender as female.

One of the aims of this project was to produce findings with the potential for generalisability and transferability, thus probability sampling would have been preferable. However, non-random sampling method (Saunders, Lewis and Thornhill, 2016) also known as the non-probability method, where strategies allow for selection of sample with some element of subjective judgment, was determined to be most suitable for this project, based on the Pilot study. Distribution of the quantitative survey was initially planned to utilise existing professional relationships between the researcher and sports venues in South-East England. The initial plan was also to base the research on population sample from South-East England. However, the differences in financial prosperity amongst regions in the United Kingdom have been taken into consideration and to collect data from more heterogenous population the scope was widened to the whole of UK. It was acknowledged from the start of the project that the generalisability and transferability of the findings would be limited in some respects, considering the potential as well as limitations of the scope of the project. Existing literature showed that economic status and stability influence WB (Taylor and Monica, 1970; Kasser and Ryan, 1993; Aknin, Norton and Dunn, 2009). The potential pool of respondents was large and based on statistical data from the ONS regarding the structure of the UK population. The British Heart Foundation published in 2015 that 55 % of 19–65-year-old women participated in exercise every week (Townsend *et al.*, 2015). Cancer Research UK showed that six to 10 adults in the UK are overweight or obese, based on data from 2018-2019

(https://www.cancerresearchuk.org/health-professional/cancer-statistics/risk/overweight-and-obesity). The ONS published in 2019 that the self-reported WB levels in the UK population had increased between 2011-2016 and this was a continuing (ONS Census, 2019). It ought to be in this case noted however, that ONS measures the WB of the population based on economic prosperity. These examples provide the outline of the potential population sample that might have a potential interest in the study, and therefore in participation in the survey. Additionally, the existing professional relationships with sports venues could recruit respondents and therefore have a positive impact. However, the nature of the relationship could equally have a negative impact on construction of knowledge and the integrity of the project (Creamer, 2018). In the reflexive approach, the role of the researcher in the production of knowledge was reflected upon, and the decision made to limit negative influences where possible. Hence, alternative sample sources for the survey were decided on. These were established via external relationships within the health and WB industry, such as nutritional specialists, rowing coaches and social media groups with a WB focus, a Pilates studio owner. The researcher contacted the administrator of these groups and asked whether there was an interest in taking part in the survey. Where agreement was established, a written format of it was saved. The HR department or owner of that platform then distributed the survey within that group. Hence, the researcher had no pre-established contact or relationship with the respondents and the integrity of the data was reasonably preserved. No reward was offered to either the administrator or to any of the respondents. The interest to participate was purely based on the interest in the topic of the study. The sampling was non-random purposive sampling (Saunders, Lewis and Thornhill, 2016), by the

choice of WB-related organisations. There was an anticipation of a potential snowballing effect after the initial distribution via each organisation to the potential population sample. Estimated response rate was not established for the population, because the survey was distributed electronically, and the snowball effect was equally via electronic re-distribution. Therefore, there was no clarity as to how many potential respondents viewed the survey. However, a reasonable estimation of a 30% response rate was assumed, based on existing literature (Baruch, 1999). All the above considerations allowed for a convenient sample suiting the scope of the study.

Several issues regarding the sample were detected early based on the Pilot study, and the project strategy was adjusted.

3.4.3 Data collection instrument design

The project, from its initial phases, was proven to be a non-linear process. Each stage required additional editing or adjusting, as the following stage unearthed further aspects for consideration. That same non-linear process applied to each stage itself, and in the case of data collection the challenges included several formats of the phase 1 survey and its distribution.

Based on existing literature on MTE and WB, the CSDT was considered a reliable source of information and potential instruments of measure. Prior to the selection of an appropriate instrument of measure, the existing scope of academic literature on the topic was assessed to compare the validity and effectiveness of existing instruments (Plonczynski, 2000). The initial drafts of the quantitative phase 1 questionnaire included 2 instruments supplied by the CSDT. The Pilot study (section

3.5.5) determined those to be not an appropriate fit for a UK-based sample, largely due to some language restrictions. The CSDT is a USA-based organisation and the instruments it supplies use American English, including phraseology and expressions that were considered by the Pilot study sample to be hard to understand. Hence, following the Pilot study, several alternative formats of the questionnaire were considered. The final questionnaire (Appendix 1), as amended after the initial Pilot, included Participant Information Sheet (Appendix 2), Consent Form (Appendix 3), demographic data questions (Age, Gender and Ethnic group), self-reported level of WB questions and Exercise Motivation questions.

The Participant Information Sheet (Appendix 2) included information in as clear and honest a format as possible, to give respondents the opportunity to decide whether they wished to participate in the survey (Appendix 1). It included information about their right to withdraw at any stage during, or within 2 weeks post completion of the questionnaire, as well as contact details for the researcher and supervisors. In the electronic format which was used for distribution, the first page was separate, and the respondent could make a choice of not progressing to the following page by simply closing the page. The formatting of the Participant Information Sheet was based on recommendations by the University of Sunderland and on examples of previous research in Social Sciences.

The Consent Form was the second page of the survey and included the circumstances under which the respondent agrees, or not, to take part (Appendix 3). The reader had an opportunity to either not continue to the following page or to state their name as a signature on the Consent Form. Following these two pages, the questionnaire itself began.

The questionnaire began with demographic questions on separate pages and in the following order: age, gender, ethnic background. The guidelines used for the demographic data collection were provided by the Office for National Statistics (ONS) and GSS (*GSS*, 2020) as published in census 2012 and 2021. (ONS Census, 2012a; ONS Census, 2021c). Additionally, the GSS further recommended placement of demographic data questions at the start of the survey.

Section 3.5.2 outlines the sample and the recommendations followed regarding the demographic question on age. As further stated above, the age demographic question was phrased so that the respondent indicated which age group they belong to. Following the Grouping B standardisation by GSS (https://gss.civilservice.gov.uk/policy-store/age-and-date-of-birth/) the five age groups were: 18-24, 25-44, 45-64, 65-74 and 75+. The age demographic question features in the questionnaire (Appendix 1) as Question 1 (Q1).

The ethnic background question, as a part of the demographic questions, also followed the recommendation by GSS (https://gss.civilservice.gov.uk/policy-store/ethnicity-harmonised-standard/#questions-for-england). The ethnic background question features in the questionnaire (Appendix 1) as Question 3 (Q3).

The gender question, as stated above, was identified as essential despite the determined demographic for the study being female. On the first page of the survey the reader was informed that those invited to take part in the questionnaire are women over the age of 18 residing in the UK. However, the gender question was part of the survey to accommodate for the respondents' freedom to show which gender they identify with and to ensure that subsequent analysis was conducted using data from the female demographic. Furthermore, and as demonstrated in Appendix 1, the

gender question, whilst phrased as recommended by GSS, (https://gss.civilservice.gov.uk/policy-store/gender-identity/) had an option to insert the respondent's own gender identification if appropriate. The gender question features in the questionnaire (Appendix 1) as Question 2 (Q2).

Additionally, demographic data collected for gender, age and ethnic background that the respondent identifies with, combined with the prevalent trends in WB and MTE, allowed for a comparison between age groups and ethnic groups. Following the demographic questions, the questionnaire proper was designed as a two-factor instrument of measure, including questions regarding self-reported WB (2 questions) and MTE (20 questions). The two factors were combined from established sources, both instruments were used previously and were validated by previous research.

As stated above, the Pilot study showed that the phrasing of the WB questions, which was based on the CSDT (https://selfdeterminationtheory.org/) Subjective Vitality Scale, was not positively received by the Pilot study participants.

Therefore, the WB questions were replaced by two questions adopted in their entirety from OECD guidelines on measuring subjective WB (OECD, 2013). The WB questions feature in the questionnaire (Appendix 1) as Questions 4 and 5.

The set of two questions followed a 0-10 scale, where 0 = not at all, and 10 = completely.

The first question, 'Overall, how satisfied are you with your life nowadays?', is an experimental evaluative SWB question. It has been previously tested in the Annual Population Survey (2012) and the Opinions Survey (2016), both conducted by the ONS. The OECD (2013) stated this question as a primary question and a core

measure for which there is “strongest evidence for validity and relevance, and for which international comparability is the most important” (OECD, 2013, p. 11). Whilst this project did not utilise international data, the evidence for the tested strength of the question determined its validity and reliability for this research, and for its potential replication. The question covers overall life satisfaction and is intended to “capture the respondent's evaluative judgement of how their life is going while imposing the minimum level of respondent's burden” (OECD, 2013, p. 253). Whilst being a measure of SWB, it is also stated to be suitable as a single measure where required (OECD, 2013). The question focuses on how a person feels nowadays, rather than specifying a period. The purpose here is to gain data regarding the person's cognitive evaluation of their level of life satisfaction.

The second WB question, 'Taking all things together, how happy would you say you are?', is an overall happiness question and is an alternative way of measuring the same underlying construct as the primary measure (the first question). This question was intended as an additional measure that adds value, it has been adopted in full (OECD, 2013) and was previously used in the European Social Survey of 2006/07. The overall happiness question was originally developed by Hadley Cantril in 1961 (Cantril *et al.*, 1961).

Both WB questions have been published in the OECD guidelines for measuring SWB and adopted in full. The OECD (2013) WB questions have been used in previous research and validated, hence using an existing instrument of measure added to the validity of this project. Previous research and supporting literature state self-reports as suitable and a valid assessment of SWB, both the affective and cognitive components (Creswell *et al.*, 2006). The most common reported measures

are SWLS (Pavot and Diener, 1993), Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988), and experience sampling methods for assessing SWB in situ (Scollon, Kim-Prieto and Diener, 2003). More comprehensive assessment of self-reported WB requires a multimethod approach. The OECD (2013) guidelines were considered the most comprehensive and the noted questions as most suitable for this project and its aims.

The MTE questions followed as Question 6 in the questionnaire (Appendix 1) and were formatted as a table of 20 questions with a 5-point Likert scale, with a range from 'Definitely not true' to 'Very true'. The phraseology was supported by the Participant Information Sheet where the respondent was asked to give an answer as a reflection of their life and not as how they though life ought to be. Each question was asked to be treated separately. The table of questions was based on the BREQ, specifically a format BREQ 3. Drawing on SDT, Mullan, Markland, and Ingledew (1997) developed the BREQ to measure the continuum of behavioural regulation in exercise context (Markland and Tobin, 2004). The 20 questions were adopted in their entirety as 5-subsets of a BREQ 3 original 6-subset questionnaire, provided by Bangor University (http://exercise-motivation.bangor.ac.uk/breq/theory.php). The MTE questions were equally critiqued by the Pilot study participants and on reflection of the feedback, in consideration with the population sample and the focus of the study, the sixth subset of questions for Amotivation was removed. The BREQ 3 assesses factors of the self-determination continuum and indicates the degrees to which we regulate our behaviours and perceive experiences. The BREQ 3 was chosen from a vast variety of scales. The 5 subsets used here were: Intrinsic motivation, Integrated motivation, Identified motivation, Introjected motivation and External motivation. Each

subset included four questions, and the order of questions within the questionnaire was adopted from the original BREQ 3. The definition of each type of motivation is included in Chapter 2, Literature review, in section 2.5.4. The validity of this instrument of measure lies partly in the previous literature reporting the use of the BREQ 3 (Cid *et al.*, 2018; Mullan, Olivier and Thogersen-Ntoumani, 2021; Cavicchiolo *et al.*, 2022). The Bangor University advised on the use of the BREQ 3 as an instrument in its entirety or as a set of required sub-scales. Previous research which validated formats for BREQ include Markland and Tobin (2004) and Rodrigues *et al.* (2020).

The last page of the questionnaire was devoted to giving thanks to the respondent for participation and further inviting them to express interest in taking part in the qualitative phase 2 by stating their email.

The paragraphs above have outlined some of the aspects of the process of data collection and the preceding design stages of it. In summary, the mixed-methods design incorporated two phases of data collection. Phase 1, the quantitative phase, followed by quantitative phase 2. The quantitative questionnaire included clear questions, which could be answered without hesitation and therefore supported the credibility of the study.

3.4.4 Data collection instrument delivery

The data collection for the quantitative phase took place via Qualtrics software. Qualtrics, which enabled the design of the questionnaire in a practical sense by providing a platform within which the Participant Information Sheet (Appendix 2), Consent Form (Appendix 3) and the actual questionnaire questions (Appendix 1) were

combined into a questionnaire. This software was supplied by the UoS as a free software tool. Qualtrics allowed for the questionnaire to be distributed via email and by an anonymous link, which could be posted on group boards and social media pages. Each email and link were a single use platform and could not be used repeatedly by the same server, therefore accounting for multiple submissions by single respondent. However, the anonymous link could be repasted repeatedly which allowed for snowball effect where appropriate. Each email or message with the anonymous link included a very short invitation to take part in a research study and included the title. By opening the link in their email or clicking on the anonymous link, the respondent would have opened the survey on the first page, which included the Participant Information Sheet followed by Consent form and the questionnaire proper.

The Qualtrics software also collected completed responses. Whether the respondent used an emailed format or the anonymous link once they opened the questionnaire on their device Qualtrics registered the input as the starting point of the response. There were of course those who did not open the link to the survey at all, and those did not get registered by the software. Once the respondent completed the questionnaire, the software saved the completed entry. Based on information from Qualtrics the questionnaire took no more than four minutes to complete. This timeline is based on the average time taken to complete, not including those entries that figured as outliers. Qualtrics allowed for an entry to be opened repeatedly until completion, with a maximum set time of 5 days. Once the survey was completed the link to it became inactive, which allowed for additional control of repeated entries by the same respondent.

The questionnaire design and delivery went through its own cycle of trial and error. Several types of software were considered, including Typeform, SurveyMonkey and GoogleForm. Qualtrics as a software was decided to be the most suitable and provided an efficient platform for aesthetically pleasant design, and delivery systems friendly to all age groups. The Qualtrics collection of data systems allowed the researcher to transfer data smoothly to the following Analysis stage SPSS software.

3.4.5 Pilot study

The pilot study took place after the design of the questionnaire. 10 women took part in the Pilot and provided feedback. The Pilot study exercise showed the strengths and weaknesses of the proposed strategy up to that point. The recruitment of participants for the Pilot study was from the author's immediate group of work colleagues, friends, and research cohort colleagues.

The initial adjustments of the survey distribution as based on the Pilot were:

- corrections made to the software design of the survey so it was suitable for distribution via email, or an anonymous link posted on social media. This measure was put in place to allow for wider distribution and to accommodate older age groups with potential limited access to technology.
- corrections made to the software design so the survey could be opened and completed on a PC, laptop, phone (iPhone or android), iPad or Tablet.
- structure and phraseology in Participant Information Sheet and the Consent Form were adjusted to create more reader friendly documents.

Further changes related to the combination of WB questions and Exercise Motivation questions, as outlined in section 3.5.3.

The Pilot study took place prior to the survey proper, and all data gathered from the Pilot study have been stored in line with UoS guidelines. The Pilot study for the qualitative phase 2 is outlined in section 3.6, Qualitative data.

The Pilot study affected the subsequent distribution of the survey and the selected sample. The Participant Information Sheet specified that the demographic studied by the research was female, over the age of 18 and residing in the UK. Whilst the initial intention was to collect data specifically from respondents that have at some point in life engaged in exercise or other SWB focused behaviours, the pilot study also clarified that. It showed that those who do not have the personal connection or interest in either subject simply do not wish to take part in the survey. That would become obvious by the respondent simply not responding to the invitation or when they did not continue to read through the survey after reading the first page, which included the Participant Information Sheet. This was later confirmed by the Qualtrics software which showed the percentage of respondents that opened the survey and spent a short time on the first page, then closed the survey. Hence, whilst the recruitment of participants took place via platforms which were likely to include a demographic with an interest in exercise and WB, this interest was not specified as a prerequisite. The original number of those who did accept the invite to take part was 181, but some did not progress past the Participant Information Sheet. The final number of responses which were analysed was 146, post data screening details of which are listed in the Results chapter, section 4.2.1 This further showed that the specification to have an interest in WB and exercise was not needed, and the title of the research together with

the Participant Information Sheet ensured that only those who were indeed interested and, in some way, active in the field took part in the survey. In part, the Pilot study accounted for validation of the project.

3.4.6 Data management and analysis

In the process of the primary data collection care was taken to collect data that aids the achievement of the research aims and objectives by answering the research questions. Therefore, the process of preparation for data collection considered the efficiency of data collection, management and storage. One of the first steps was to gain Ethical Approval (Appendix A) for the project, which gave the initial confirmation for data collection plans. This section of the Methodology chapter separately assesses the management of data in the quantitative phase 1 and outlines what has been done in the analysis. This informs the Results chapter, which presents findings and the following Discussion chapter, which interprets them.

In the quantitative phase 1 the data collection was initially managed by the Qualtrics software. Post collection the data were saved on a portable hard drive and stored in safe storage, in accordance with UoS guidelines. The Qualtrics software collected a total of 181 responses between 28 June 2021 and 2 August 2021, however only those entries that fulfilled the criteria for the research were tested. The first step after data collection and prior to analysis was data screening. These data were then transferred to IBM®SPSS software. During data screening responses were assessed for unfinished (31), questionable response patterns (1) and partially finished surveys (3). Where found, these cases were assessed for inclusion in the final phase.

All questionable and unfinished responses were removed. However, the partially finished surveys were maintained, as they only did not answer the final question (regarding the respondent's willingness to engage in the second phase of the research) and as such were considered complete from the Quantitative statistics perspective.

The entries that were omitted from the analysis included those that were incomplete and two entries which were invalid. The results chapter presents details of the initial screening (section 4.2.1) and the final number of responses which were analysed. A further two weeks were added to the active survey to accommodate for any withdrawal of participation post-completion of the survey, as outlined in the Participant Information Sheet (Appendix 2) as part of the rights of every respondent. The chosen software used for analysis was, after lengthy consideration, determined as the IBM®SPSS®Statistics. The software format IBM SPSS Statistics 26 was provided by UoS. Whilst the Excel spreadsheet and Statview software carry their own benefits, the SPSS and its functions were the most suitable fit for this research. Both categorical and numerical data have been collected, as anticipated based on the research questions. The questionnaire design and phraseology produced descriptive and ranked (ordinal) data. A variety of analytical techniques have been used to translate the collected data into meaningful information (Saunders, Lewis and Thornhill, 2016). Mathematical tools and structures such as graphs, charts and tables were included in the data analysis and used for the presentation of the descriptive and inferential statistics in the Results chapter.

The preparation of data prior to analysis included the transfer of responses from Qualtrics to SPSS, screening and anonymising of the data. Therefore, the Data

View within SPSS was adjusted, and email address, latitude and longitude of the responder's location, name and IP address were removed, thus the view allowed for complete anonymity of the respondent. The Variable view was then adjusted. The variables were coded, so their classification was clear and obvious to the reader. The 20 MTE questions were separately identified, by adding an alphabet character to distinguish each of the 5 subsets characterising types of MTE, and to allow for clarity when selecting each type of motivation for analysis. The two WB questions were also clearly identified as a separate scale. The demographic questions of Age, Gender and Ethnic background were identified via Label in the Variable view. The above management of the data within SPSS allowed for an effective start of the analysis.

The Cronbach Alpha test was conducted to establish internal consistency as a measure of the scores generated for items that claim to reflect on the same topic. The Cronbach Alpha reports on the reliability of a scale. In this case it was used to establish the reliability of each scale: each of the five subsets of MTE questions, the entire BREQ 3 (minus Amotivation) and the two WB questions as a scale. As items within each scale were phrased in the same positive manner, it was expected that items would achieve acceptable scores. The formula used to determine the internal consistency reliability was as follows:

$$\alpha = \frac{\mathrm{N}.\bar{\mathrm{c}}}{\bar{\mathrm{v}} + (\mathrm{N}-1).\bar{\mathrm{c}}}$$

In this formula the N = the number of items (questions), $\bar{c}$ = average covariance

between item pairs and $\bar{v}$ = average variance. Whilst it is reasonably simple to calculate Cronbach's Alpha using an Excel spreadsheet, the SPSS was used for the calculation. The result of the test where internal consistency reliability is excellent would be $\alpha \geq 0.9$, and where $\alpha < 0.5$ the result is not acceptable. The Results chapter presents the findings for the internal consistency of the instrument of measure scales in this project. The results of this calculation determined how the rest of the analysis would proceed, as well as recommendations for future research.

The collected data, as presented within SPSS, were in most cases numerical data and treated as such within the analysis. The categorical data collected from the ethnic background questions were accommodated within the SPSS to allow for meaningful presentation. As expected, due to the design of the survey, the collected data were measured by descriptive statistics and ordinal measurement, with visual presentation of the analysis in graphs and histograms. The inferential statistics were applied to some of the data, where appropriate in response to the hypotheses associated with RQs with a quantitative aspect.

Regarding the demographic questions on Age (Q1), Gender (Q2) and Ethnic background (Q3), descriptive statistics for demographic data were used and results are illustrated in the Results chapter, section 4.2.3. The descriptive statistics allowed for the calculation of the representation of each age group and ethnic background. The gender question results were anticipated to yield 100% female representation and only data from respondents who identified as female were used in the analysis. The descriptive statistics to establish representation of age and ethnicity allowed for the understanding of how overall findings can be generalised to the UK female population. Frequency distribution tables Table 2 and Table 3 offer a visual illustration of results

for Q1, Q2 and Q3 as part of the Results chapter. It was noted that the generalisability of the research would be impacted by the results of the descriptive statistics of the demographic data. Specifically, if the results showed unequal representation, the generalisability would be negatively impacted and would be limited to the group represented by majority.

Descriptive statistics for the instrument scales were then applied and included calculations for the Mean, Standard Deviation, Minimum and Maximum. The results are presented in Table 4 in the Results chapter. The descriptive scores for WB and each of the five types of MTE were calculated.

In all the quantitative questions the scoring phraseology was adopted from previous instruments, together with the questions. The descriptive statistics for scales were implemented to understand how the participants responded for each scale, namely the range of answers and the average. The Standard Deviation would indicate whether the answers within the sample were consistent. The Inferential statistics would at a later stage elaborate on the results, by using those in more complex calculations.

The WB questions were scored 0 to 10, where 10 corresponds with a 'completely' statement and 0 with ‘not at all' statement acted as a scale anchor, and this score was used on the basis of evidence (Bradburn, Sudman and Wansink, 2004; Diener *et al.*, 2009; Diener, Inglehart and Tay, 2013).

The MTE questions range was based on 'very true for me/definitely not true for me' phraseology. The reasoning behind this choice was largely based on evidence from previous research and literature, where the use of 'agree / disagree' scale format has been reported to carry “…increased risk of acquiescence and socially desirable responding” (OECD, 2013, p. 51).

Tests of normality followed, and the Mean of the scale variables was tested to determine whether data were parametric. Statistical tests assessed the normality and produced graphic presentation for visual inspection. The scales which were assessed were each of the five subscales for MTE (External Motivation, Identified Motivation, Introjected Motivation, Intrinsic Motivation and Integrated Motivation), and the WB scale. The Shapiro-Wilk test was used as suitable testing for the small size sample, as a means of numerical testing for normality. The results values for Shapiro-Wilk, if greater than 0.05 would deem data to be normal, and if below 0.05 would show that data significantly deviated from normal distribution. In either case, a suitable follow-up testing would be determined post Shapiro-Wilk depending on the results. The normality of data can be further tested by visual inspection of skewness within graphical presentation of data findings in Q-Q plots. Table 5 in the Results chapter illustrated the tests of normality findings; Appendix 6 includes Figure 13 with Q-Q plots as a visual illustration of the results.

Additional new variables in the SPSS view were added to allow for calculation of the Mean Score of each type of MTE for each respondent, as well as for Mean Score of WB for each respondent, and for overall highest scoring Motivation within the sample's age groups. These were to be used in the following statistical testing.

Further in the analysis the Inferential statistical testing was applied for each RQ with a quantitative aspect, all RQs and hypotheses are listed in Appendix 12. The Inferential statistics for assessment of RQ 1 used Spearman's correlation. RQ 1 asked whether there is a correlation between MTE and WB in women. For the associated Hypotheses 1.1, 1.2 and 1.3 a Spearman's correlation was conducted to assess if any of the five types of motivation to exercise significantly related to the individual's WB

score. Spearman's correlation was used to reflect the non-parametric data. The results were further illustrated by scatter plots. Appendix 5 summarised results for this section in Table 7. When reporting correlations in results it is important to note the meaning of the values. In terms of interpreting the Spearman's Rank Correlation Coefficient r_s values it is important to link this number to how strong the correlation is. When range 0.00 - 0.20 is considered negligible; 0.21 - 0.40 as weak correlation; 0.41 - 0.60 as moderate; 0.61 - 0.80 as strong and 0.81 - 1.00 is considered a very strong correlation. Section 4.2.5.1 in the Results chapter outlines the findings for the above.

The Inferential statistics applied for assessment of RQ 3, and the associated Hypothesis 3.1 were as follows. The RQ 3 asked whether a woman's age played a role in the predominant type of MTE. Prior to the analysis a new variable was established to represent the highest ranked motivator per participant. In other words, the type of MTE that the participant most reported as highest scoring via the questionnaire. The new variable was used in the Pearson's Chi-squared test, chosen to test how participants responded to the categorical variables namely, to see the distribution of the highest motivator in the age groups. Hypothesis 3.1 stipulated that age plays a role in dominant MTE. Figure 9 in the Results chapter offers a visual demonstration of the results and section 4.2.5.2 in the Results chapter outlines the findings.

The Inferential statistics for assessment of RQ 4, which asked whether a woman's age plays a role in her reported levels of WB, used the Kruskal-Wallis test to reflect the non-parametric data. The results were to show the level of significance between age groups reporting on WB. Should data show a significant difference between age groups, further post hoc analysis was to be ran to determine which

groups significantly differed from each other. The Mean as calculated for each group would report a value comparable to each other group and lead to support for Alternate Hypothesis or Null Hypothesis. Section 4.2.5.3 in the Results chapter presents the test findings.

In conclusion, the data collection and analysis were conducted using the Qualtrics and the SPSS software packages. To reflect each RQ with a quantitative aspect, and the associated hypotheses, appropriate testing was implemented to see whether there was support for the Alternative or Null Hypothesis, thus refuting or accepting said hypothesis. Appropriate statistics and graphs within the Analysis were chosen to reflect the type of data produced by the data collection and the Tests of Normality. Nominal variables were reported by Frequencies and Bar charts. Scale variables were reported by Mean, Standard Deviation and Histograms. The saturation point was considered, but not anticipated to be reached in the quantitative data collection. The Results chapter presents the findings for all the above. The following section outlines the means of data collection and analysis in the qualitative phase 2.

3.5 Qualitative phase 2 Methods

3.5.1 Introduction

The aim of the qualitative phase 2 of the project was to collect and analyse data which enriches the findings from the quantitative phase 1 and answers any outstanding RQs. All RQs and hypotheses are included in Appendix 12. The use of hypothesis in the qualitative phase serves the need to verify the statement made in

RQ. The paragraphs below detail the process of data collection via semi-structured interviews and the following management and analysis of data in the qualitative phase 2 semi-structured interviews. The semi-structured interviews took place between 14 October and 9 November 2021.

A research interview is a purposeful conversation between two or more people (Saunders, Lewis and Thornhill, 2016). An objective and subjective approach to interview as a method can be applied. Within this project the subjective approach was deemed the most appropriate, because it is linked to the perspective that "views about the social world are socially constructed" (Saunders, Lewis and Thornhill, 2016, p. 568). It was anticipated for data to be socially constructed, with the views of the participant and the interviewer interpretations to influence the findings (Denzin, 2001; Heyl, 2005). The role of the interviewer was recognised as a central role "in the process of constructing meaning and the need for reflexivity, to reflect on and evaluate his or her approach to interviewing" (Saunders, Lewis and Thornhill, 2016, p. 390). The nature of the semi-structured interview in this project was determined by the RQS and objectives and the purpose of the study. In line with one of the typologies of interviews, as qualitative research methods, it was determined that a semi-structured interview model was the best fit for the qualitative stage of this project and the explanatory design. The strategy of the non-standardised semi-structured interviews was based partly on some of the initial research questions, for example Q2: 'What are the main barriers to your motivation to exercise?'. And partly on data findings in the quantitative stage, for example based on Hypothesis 4.2, 'Has your attitude towards your well-being changed over the time, and if so, how?'. All interview questions are included in Appendix 9.

The semi-structured interviews allowed for data to explain or validate themes that emerged from the findings in the initial quantitative stage of the research. Each step in the design of the qualitative phase 2 and the preparation for data collection ensured consistency between RQs and objectives. The purpose of the initial explanatory design was to find trends in relationships between variables and in the second, more exploratory phase, enrich those findings by understanding how respondents' specific attitudes inform it.

3.5.2 Sample

In preparation for the qualitative data collection, the phase 1 questionnaire asked respondents to provide their email address if they wished to take part in phase 2 interviews. Those respondents who provided their email address as a form of agreement were subsequently contacted via email and asked whether they still agreed to participate. Whilst 34 survey respondents provided their email address as a contact to the subsequent interview invitation, 11 were selected to reflect the age groups and ethnic background representation in Phase 1. All 11 women agreed to take part in the interview, and all completed the interview in full.

The choice of respondents for phase 2 was based on:

- their re-confirmed interest in participation
- age group and ethnic background (to allow for equal distribution of responses from each of the groups represented in phase 1)
- the availability of the respondent and the researcher for a mutually convenient date, time, and location of the interview

The four age groups represented in the quantitative data collection were represented in the second stage. To create as similar as possible representation of each age group two participants from the age group 18-24 were invited to the interview, four participants from the 25-44 age group, four participants from the 45-64 age group, and one participant from the 65-74 age group.

The ethnic background representation in the first stage was also reflected in the second stage, to ensure validity and an ethically appropriate approach (Shaw, 2003). Furthermore, the qualitative stage reflected the structure of the UK society as varied in ethnic background representation (ONS Census, 2012) There were six participants who identified as White British invited to take part in the interviews, one participant who identified as South African, one participant from Eastern European background, one who identified as Chinese and one who identified as Swedish. This split was selected with the aim to mirror the phase 1 and the UK population's split of ethnic backgrounds. With only 11 participants in the phase 2, it is acknowledged that the generalisability would be negatively affected. All participants identified with female gender.

3.5.3 Data collection design

The issue of reliability and dependability, specifically in relation to the collected data being similar if another researcher conducted the interview, was managed by careful attention to the non-standardisation and the potential interviewer bias (Saunders, Lewis and Thornhill, 2016). Acknowledging the researcher's responsibility

over these potential issues has in part ensured that the value of the collected data was not compromised.

To account for the response bias, care was taken to organise and conduct the interview in as relaxed and honest a fashion as possible. The perception of the interviewee could affect the answers they give. If, for example, they felt that the information they were asked to provide was sensitive, they might give only a partial answer to be perceived in a socially desirable fashion (Saunders, Lewis and Thornhill, 2016). The time schedule was set to 30 minutes per interview, partly to account for participation bias where the respondent could feel somewhat less motivated to take part in a longer interview.

The cultural differences between the interviewer and the interviewee were also considered. Not all cultural differences could be accounted for, due to the potential of such cultural conditioning, as responding in agreement to be polite. Additionally, the researcher at the time of the interviews identified with the White British ethnic group, however by birthplace identified with Eastern European cultural background. Therefore, in the analysis stage careful interpretation of data was conducted with a mindful focus on the management of cultural bias on behalf of the researcher.

Validity and credibility have equally been considered in line with the acceptance of potential cultural bias. In the quantitative phase the data were subjected to validity testing to analyse the validity of data. To account for it in the qualitative phase, the scope of the interview was carefully managed. Reliability and dependability in the qualitative phase differed from the quantitative phase in that replication was less feasible due to the circumstances of the respondents being subject to change over time, especially in relation to the project's topic.

The aim was to collect naturally occurring data (Saunders, Lewis and Thornhill, 2016) from an authentic and organically evolving interview. The verbal approach to questioning included carefully and clearly phrased questions to increase reliability of the obtained data (Saunders, Lewis and Thornhill, 2016) and an appropriate approach with neutral tone of voice. All questions were kept short, and their complexity kept to a minimum.

There were three procedural steps in the sequential research design in the project. Firstly, the quantitative data collection and analysis. Followed by the development of the qualitative questions for phase 2 semi-structured interviews, purposeful sampling procedures and phase 2 data collection protocols developed, based on the quantitative data results. Lastly, qualitative data collection and analysis (Creswell, 2014).

The Participant Information Sheet and the Consent Form were prepared. As these forms were part of the initial quantitative phase, some editions were made to accommodate the qualitative phase and its set-up. Hence, those participants that took part in both phases completed these forms for each phase. The participants were further assured of anonymity and reassured that the themes of the interview questions will not delve into sensitive or personal subjects, unless the participant chooses to direct their narrative that way.

The following sections detail the qualitative data collection and provide the basis to the Results chapter.

3.5.4 Data collection implementation

The data collection in the qualitative phase 2, via the semi-structured interviews, consisted of the six predetermined interview questions and additional, probing questions where appropriate (Appendix 9). The semi-structured interviews were arranged on an individual basis and took place by preference of the respondent either in their home or in a public place with some space for privacy. The interview questions were based mainly on the RQs and hypotheses with a qualitative aspect. Some were based on the results of the quantitative phase 1, to elaborate on the findings from the rich qualitative data analysis.

The interview questions were as follows:

1. What are your main motivators to exercise?
2. Have those motivators changed over time for you?
3. What are your main barriers to exercise?
4. Have those barriers changed over time for you?
5. What does well-being mean to you?
6. Has your attitude to your well-being changed over time?

Prior to the interview the respondent was provided with the Participant Information Sheet (Appendix 7), specifically adapted for the qualitative phase 2, and asked to sign a Consent Form (Appendix 8), also adapted for this stage. Each interview was voice-recorded, and the recording saved on a portable drive under a cipher, in a safe location, preserving the anonymity of the respondent and adhering to the UoS guidelines.

The Participant Information Sheet stated that in the context of the project, exercise can be one of many different types of activities. The open-ended questions allowed for freedom to express thoughts and feelings on the subject.

The researcher abstained from leading questions in order not to contaminate the data. All questions were also grounded in the aim to understand the real-life experiences of the participants. The interview questions encouraged self-analysis of feelings, thoughts, and subsequent behaviour. The semi-structured interviews followed the planned route throughout. Some minor changes took place in the direction of each interview during its progress, in the form of additional questions to clarify the respondent's answers.

The interview questions were not immediately or obviously sensitive, however any narrative can potentially touch on a sensitive topic from the perspective of the respondent's experience. Anything from the feeling of guilt if the person feels not motivated to exercise at present, to feelings of shame if their perceived WB is not where they think it ought to be. Any perceived pressure from the interviewer could also cause the respondent to alter their answers. Therefore, the interviewer's relaxed manner and carefully prepared outline of the interview script were applied to create a level of trust, calm and comfort for the participant. The nature of the tone of the interview was set in the preparation stages, by informing the participant of what to expect and of the themes that would be covered in the interview questions.

In preparation for each interview several aspects were considered. The arrival of the researcher and the participant, the positionality within the environment to each other, re-introduction of the research and subsequent collection of the signed Consent form. Prior to the start of the voice recording the researcher checked that the

participant was comfortable and ready to start. Time was allocated to opening questions, main body and closing questions, as well as thanking the participant.

In addition to audio recording, notes were taken during the interview. An interview schedule (aide-memoire) was used during the interview to aid the researcher (Appendix 9). The document included all interview questions and the additional probing questions. Additionally, the Contextual Data Sheet was used to record contextual data during the interview (Appendix 10).

The interviews were transcribed immediately after, and the contextual data were noted by the researcher for each interview to aid the subsequent data analysis.

The stages of the data processing which followed, are detailed in section 3.6.6.

3.5.5 Pilot study

A pilot study was conducted with one participant. No major issues emerged from the Pilot. The interview questions were reported to be clear and concise. The Pilot study participant gave generally positive feedback. The Pilot study was useful in that it showed some initial data patterns and what data can be anticipated from the interviews proper. The Participant Information Sheet (Appendix 7) and Consent form (Appendix 8) edited for the qualitative data collection stage were also tested during the Pilot, as were the Aide memoire (Appendix 9) and Contextual Data Sheet (Appendix 10).

The Pilot aided the development of questions for the semi-structured interviews. Those were subject to scrutiny, being in-part based on the results of the

quantitative phase. The interview questions therefore underwent thorough preparation and careful design process and were also further reviewed post Pilot.

3.5.6 Data management and analysis

The data collection from the semi-structured interviews supplied the main scope of data for the qualitative phase 2 and the analysis. Additionally, the Contextual Data Sheet was used to collect contextual data during every interview. This allowed for the record of such data as the place of the interview, background noise and first impressions of the interview. The Interview Schedule Aide-memoire included the interview questions and additional probing questions to aid the researcher in the process of the interview.

Interviews were voice-recorded using a smart phone and a built-in voice-recording app. Immediately after the interview, the recording was exported onto a portable hard-drive to ensure safety and participant anonymity. The hard drive remained as data storage and, when relevant, was used to access data. The interviews were all between 25 and 30 minutes long.

The voice recordings were manually transcribed by the researcher using a personal computer and word processing software, and transcriptions saved in NVivo 12 software provided by the UoS. NVivo 12 software provided a useful platform for the data analysis structure.

All recordings were listened to, and transcription read several times to get a sense of the data. To accommodate the use of TA, the transcription followed the Jefferson Transcription System (O'Connell and Kowal, 1994). The text transcription recorded

speech verbatim, including all utterances. Speech errors, false starts, slang, stutters, and repetitions were also recorded. Sounds for affirmative and negative were transcribed as Mm-hmm and Mm-nmm respectively. To represent a sound of pondering or a pause, 'hmm' was used. The transcriptions were done by the researcher listening to the recording and typing in a Word document simultaneously. Each 15 minutes of an interview took approximately 90 minutes to transcribe. Each transcription was titled by code which matched a code on the recording, thus allowing for anonymous data handling and subsequent storage of data and associated materials.

All 11 transcriptions were imported to NVivo 12 software prior to analysis proper. Well-organised time management and administrative care was required during the qualitative stage, including transcription. As anticipated, the transcription was time consuming as not only what was said but the way the respondent phrased and delivered their statements was reproduced verbatim (Saunders, Lewis and Thornhill, 2016) and who spoke was stated. A variety of summaries was used to supplement analysis, interim as well as document summaries. The interview transcripts allowed for the use of the most suitable qualitative methods.

Data cleaning then ensured accuracy and correction of errors by listening to the recordings and re-reading transcriptions. Screening of the qualitative data deemed all 11 interviews as valid. The analysis at all points had been completed by the author and the trustworthiness and potential bias issues have been noted in the section 3.6.1 on validity and reliability. Consideration had been given to all the four criteria of trustworthiness: credibility, transferability, dependability, and confirmability (Stahl and King, 2020). These have been addressed in line with

existing literature guiding qualitative research standards such as Saunders, Lewis and Thornhill (2016). Ryan, Coughlan and Cronin (2007) also offer the notion of rigour as interchangeable with trustworthiness. The note rigour to be the ‘means of demonstrating the plausibility, credibility, and integrity of the qualitative research process’ (Ryan, Coughlan and Cronin, 2007, pp. 742)

The data was then analysed using the TA as the main analytic strategy. TA allowed for grouping of codes into themes. The TA also allowed for consideration of background influence, and how culture and history might have influenced the participants’ answers. The analysis, as expected, commenced during the interview, as informed by the researcher's knowledge of the quantitative analysis findings and insider knowledge rooted in professional practice. The qualitative data processes reflected the inductive exploratory nature of this phase from the early stages of development of the research questions, and throughout design and implementation stages a careful preparation took place (Hanson *et al.*, 2005).

“Thematic analysis is a method for identifying, analysing, and reporting pattens (themes) within data” (Braun and Clarke, 2006, p. 79). Saunders, Lewis and Thornhill (2016) state that data collection, analysis and the emergence of themes happen interconnectedly. The data analysis proper followed four stages: defining the analysis, classifying data, making connections between data, and conveying the findings. The strategy from the design point was to analyse the gathered data qualitatively to answer the RQs and to find out how and why respondents navigate their world of WB and exercise motivation. Some of the RQs were answered by the phase 1 quantitative analysis, but others were set to be answered by phase 2.

As mentioned above, the transcripts were exported and saved in NVivo software in preparation for the analysis. One of the first stages of the TA consisted of assigning codes to grouped data from the transcripts reflecting a common thread. The software was used to read and re-read the transcripts and to add a memo note to each transcript which included the researcher's general impressions of the interview and some contextual data. The software then presented a platform within which codes could be established, and under each code saved in NVivo several references from relevant transcripts were saved, corresponding to the code. The coding proved to be a non-linear process and repeated re-coding of the qualitative data took place. Grouped codes then provided the basis for themes. Re-coding continued until a meaningful report of themes was established and allowed for collection of knowledge, to a level where obtained findings did not require further coding of the data. The references saved under codes were words or sentences, which provided relatable stories and perspectives.

The coding process began during the first readings of the transcripts. The number of codes grew and was assessed periodically to allow for some codes to merge and new ones to emerge. Each code was labelled, and a short description of the code specifics was attached. Data were coded over a concentrated period to avoid definitional drift and to ensure accuracy in consistent coding.

The initial codes were driven by existing findings from the Quantitative data, RQs and Hypotheses, and the narrative-driven codes were added during coding. TA was determined to be best suited for the project, over analytical or descriptive coding. This supported the use of Thematic analysis.

TA was first developed by Gerald Holton in the 1970s and has been used as a distinctive method in social science (Braun and Clarke, 2006). In this project the use of TA allowed for the investigation into the implicitly and explicitly stated opinions of the participants. TA, when used well, interprets data, and makes sense of it (Maguire and Delahunt, 2017). The aim in this project was to not just use interview questions as a base for themes, but also analyse the data for themes emerging in vivo. When analysing data and establishing themes a priori and In Vivo code were distinguished (Table 8, Appendix 11). The a priori codes were anticipated and emerged as a direct result of the interview questions focus. The In Vivo codes emerged spontaneously from the respondents' narrative and were not anticipated but noted as a rich addition to the data collection. Additionally, semantic, and latent themes (Braun and Clarke, 2006) were recognised. Semantic themes reflected on what is said, whilst latent themes looked at underlying ideas and conceptualisations to inform the semantic themes (Table 6, Results chapter). By using TA, the researcher aimed to find and demonstrate patterns across the qualitative data, as well as seeking to understand the life experiences of women in detail. Themes capture something important about the data in relation to the RQs and represent some level of patterned response or meaning within the data (Braun and Clarke, 2006). It is essential to see if a theme captures something that is important to the overall aims and objectives of the research and connects to the RQs. The theory and method were applied rigorously. The six phases of TA applied according to Braun and Clarke (2006), provided grounding for a successful analysis. The first phase included reading through the data, following transcription and noting ideas. Initial codes were then generated in a systematic way. Initial themes emerged from that stage. Reviewing themes included re-reading data,

re-coding and inevitably re-considering the existing themes. Defining and naming themes followed. The last phase consisted of reporting the themes in the Results chapter.

As mentioned above, some themes were based on the interview questions, and some emerged spontaneously. Those themes based on interviews questions and therefore on RQs, were collection of a priori codes. Those themes that were data-based were groups of In Vivo codes. The Results chapter is split into Quantitative and Qualitative sections. The Qualitative section is then divided into a summary of findings related to screening, transcription, sample, coding and eventually themes. The themes then show how a priori codes provide a basis to the themes answering RQs or contributing to the Quantitative findings, and how the In Vivo codes provide a basis to themes that led to new propositions or additional explanations of existing data.

3.6 Ethical approval

Ethical considerations and the management of ethical issues are critical aspects for the success of any research (Saunders, Lewis and Thornhill, 2016). Attention to ethics within research ought to permeate the project from design through data collection to analysis of data, so rights and WB of participants and the researcher are respected. In turn the research project is justifiable and can be defended.

Ethical approval application for this project included detailed a Project Proposal, Participant Information Sheet and a Consent Form. The researcher and the initial project supervisor, Dr Thorben Haenel, discussed the ethical approval in May 2020 and agreed on refinement and further scrutiny before ethical approval application

could be granted. The final approval was submitted on 19 May 2021 and granted on 7 June 2021, following further research and cooperation with supervisors, Dr Angela Cartwright and Dr Solomon Afework. The UoS Research Ethics Review panel granted approval for this project (Appendix A).

Ethical considerations regarding respondents:

The respondents invited to take part were of adult age, 18 or over, and were asked to confirm their age in the signed Consent Form in both phases of the project (Appendix 3; Appendix 8). The sample included adult women responding to questions about their exercise motivation and WB, doing so freely and was informed of their right to withdraw at any time during data collection, without having to state a reason in the Participant Information Sheet (Appendix 2; Appendix 7). The population sample therefore indicated a demographic that was not immediately vulnerable. No further legislative considerations were taken, and UoS guidelines were adhered to. However, the researcher was aware of the code of ethics within academic and corporate organisations and relevant scrutiny was applied in line with the nature of the project and those involved. Saunders, Lewis and Thornhill (2016) advise the standards of behaviour that guide conduct “in relation to the rights of those who become the subjects of the project or are affected by it' to be the centre of ethics in research. Any issues regarding 'confidentiality, anonymity, privacy and copyright”. These were addressed as part of the ethical aspect of this project. Furthermore, data management and storage complied with UoS guidelines. As the researcher was also female, the ethical issues arising from potential vulnerability of female respondents were partially counteracted, however verbal and behavioural conduct on the part of the researcher, especially as the interviewer in the qualitative phase, were carefully considered.

Integrity and objectivity of the cognitive processing and behaviour of the researcher were paramount throughout the process. The opinions and stance of the respondents were respected. As their attitudes became part the discussion within the qualitative phase 2, the researcher encouraged honesty and authenticity by displaying those in kind as the interviewer. There was no immediate danger or lack of safety in the interaction between the respondent and the researcher, which was largely based on the specification of the adult sample population, the freedom of choice to terminate the contact at any point, and the entirely voluntary participation of both parties.

Ethical consideration in data handling:

Strict privacy in the data handling and storage was applied, following UoS guidelines. The anonymity of respondents was ensured in different ways in the quantitative and qualitative phases. The quantitative data was screened, which included the removal of email address, name, latitude and longitude from the SPSS data view prior to analysis. The qualitative data was transcribed, and each transcription was assigned a code which (if need was to arise during potential audit of the project) could be matched with corresponding interview recoding, hence the transcription remained anonymous. Any reports of data and findings were anonymous.

Ethical challenges:

Some ethical issues surfaced during the project, specifically during the Pilot study and were addressed accordingly. The Participant Information Sheet was edited to allow for the respondent to be adequately informed about their rights and to allow for transparency. The Consent Form was amended to allow for the respondent to make an informed decision about their participation, and to protect the researcher by stating their conduct in writing. Both forms had alternative editions, corresponding to

phase 1 and 2 respectively (Appendices 2, 3, 7, 8). Adequate time was devoted to the design of the project, the ethical considerations and approval. Equally, sufficient time was given for data collection, especially during the arrangement and conduct of the semi-structured interviews in phase 2, to create a non-pressured environment for the respondent to navigate their answers. The qualitative interviews Participant Information Sheet and Consent Form were adapted for the purpose (Appendices 7 and 8) from the phase 1 formats (Appendices 2 and 3). Moreover, confidentiality and privacy were taken into consideration when arranging the environment and time for the phase 2 interviews.

The responsibility and accountability for each stage of the project rested solely with the researcher. The respondents took responsibility for their participation in the project by signing the Consent Form and acknowledging that they had read the Participant Information Sheet. No financial award was given in exchange for participation, which additionally removed the risk of response bias.

This project showed the need for general ethical awareness on part of the researcher and regard of all others with respect and dignity. The Participant Information Sheet, Consent Form, arrangement of distribution of the instrument of measure and data collection, screening of data and data analysis in both phases of the research were viewed as parts of the research with separate ethical dimensions (Shaw, 2003). The research aim was to benefit the existing academic literature and the field of professional practice by offering new knowledge. There was no conflict of interest and no risk to participants that would at any point outweigh that contribution. In relation to ethical considerations, the sourcing of respondents, which as stated above was done via external bodies in phase 1, and their agreement to distribute the

survey invitation to their contact list was stipulated in writing. Additionally, the following sections, 3.5.2 and 3.6.2, provide details regarding the sample population, hence they outline what ethical considerations were taken during the choice of the sample and some existing literature supporting aspects of sample population in research.

3.6.1 Validity and reliability

Validity and reliability are paramount to create a research project of acceptable quality (Saunders, Lewis and Thornhill, 2016), specifically in social science. Equally reliability is central to the ability to replicate said project and collect data resulting in the same findings. These aspects have been taken into consideration and impacted the design and subsequent processes of the project, including a detailed thesis which would provide a basis for replication.

Triangulation (Denzin, 2009) further describes integration of multiple methods in research to reach more comprehensive knowledge of the subject. Moreover, Creamer (2018) notes the use of triangulation to enhance validity as one of the main values of mixed methods in research. However, Creamer (2018, p. 19) also acknowledges the challenge of the use of mixed methods in the difficulty of “honouring fundamental philosophical assumptions” of the individual strands. This is further to the data collection in the sequential design and its equally important components. The design being sequential-dependent, it draws on sequential validity legitimation (Johnson and Onwuegbuzie, 2007).

Furthermore, consistency in methods of data collection and analysis was ensured. The data analysis was scrutinised to arrive at findings which were valid and

were the result of reliable testing relevant to the RQs and hypotheses. However, the analysis has been completed solely by the author and therefore the potential issue of trustworthiness and bias ought to be considered in relation to the reliability of the findings. Stahl and King (2020) offer summary of the Lincoln and Guba (1985) publication on trustworthiness and qualitative research and offer standard guidance on application. Operationalising of variables in the quantitative phase 1 analysis, with consideration to validity and reliability, ensured variables were measured in an accurate and consistent manner. The validity and reliability of the questionnaire was partly ensured using instrument of measure subscales, which were validated by previous research. Additionally, the quantitative data were tested in Cronbach's Alpha to determine the internal consistency of the instrument. Both sets of data have been continuously checked during the process of the research, including checking for preconceived ideas of the researcher (Saunders, Lewis and Thornhill, 2016). The quantitative phase encountered issues which had a direct impact on reliability. Cronbach's Alpha determined that the use of the adapted BREQ 3 scale as a collection of five subsets is not suitable when analysed as a whole. The subsets themselves measured well, however future research might benefit from being aware of the positive versus negative weighing of some of the items which creates negative values in the inter-item Cronbach's Alpha.

3.6.2 Generalisability and transferability

Additional benefits of the mixed-methods design include the potential for generalisability, more so than perhaps a case study (Saunders, Lewis and Thornhill,

2016). Generalisability was carefully considered in this project, during the design of the phase 1 and 2 data collection instruments. The demographic questions in phase 1 were based on ONS recommendations for question construction to collect data and produce findings that can be generalised to the population. The phase 1 questionnaire is attached as Appendix 1.

The potential generalisability of the project was, amongst other aspects, subject to the variety of ethnic backgrounds represented in the sample. Further, the equal representation of selected age groups was based on the Government Statistical Service (*GSS*, 2020) recommendations for the format of data collection including age. The results Chapter 4 and Discussion Chapter 5 outline the findings and their meaning in relation to generalisability and transferability of this research. It was the aim of this study to apply a sampling method which produces a representative sample. Naturally, and whilst respecting the point of saturation, more data would have the potential for wider generalisation and transferability. However, realistic expectations, time restrictions and convenience have to an extent dictated the scope of the project. The transferability of the findings of this study was considered in line with the potential application in other contexts and studies.

This research did not aim to explore causation in the variables or create vast generalisations applicable to the population. However, as any respectable piece of research, it aimed to create conclusions that have some value in their addition to the academic field and existing literature, and the professional field in the transferability of the findings. This aim resonated throughout the process of data management and data analysis.

The following section, 3.5, reviews the preparation and implementation of data collection and analysis in the quantitative phase 1. This is followed by section 3.6 which focuses on the qualitative phase 2.

3.7 Data management record

Research records storage and management refers to any documents or data that have been collected from respondents. The integrity of data was considered when planning storage and retrieval, and all data was saved in a format that allowed data to remain legible and complete. In this project the collected data amounted to:

- electronic format of completed questionnaires (including Consent Forms)
- voice recordings of interviews
- electronic format of interview transcriptions
- copies of email correspondence with external bodies

All data were dated, and the researcher was clearly identified. Moreover, all data were stored on a portable hard drive and in safe location, following UoS guidelines.

Furthermore, the anonymity of data was ensured by separate storage of interviews and transcriptions from phase 2, and those were married by a code for possible retrieval in case of an audit. An audit of the data would be able to confirm statements made in the thesis, as all data have been saved in a suitable format and in their entirety.

There were no research funds records or other intellectual property in need of secure storage, and there were no collaborators in this project that ought to be included in the storage process.

The anonymity of the participants was further controlled by storage of the data. The interview recordings and transcripts were stored separately from the contextual data notes, and a cipher was used to marry those where access was required. Each interview was saved as a separate file and a cipher used to match documents but keep them separate to ensure anonymity and confidentiality. Each transcript had an associated Memo attached, with a summary of the researcher's impressions and notes related to that transcript.

3.8 Contribution to research by methodology

The contribution of a research project is grounded in the review of existing literature. In this study the initial Literature Review showed at length the existing research in the social sciences field of MTE and in self-reported SWB. Following a brief introduction of existing literature on the topic in general, this section outlined the existing literature as related to Methodology and methods, for the purpose of explaining the potential contribution to research in that regard.

The literature on motivation dates to William James (1842-1910), and precedes his work on pragmatic philosophy, in terms of motivation being centred around our instincts (Gollwitzer and Oettingen, 2015, p. 938). In line with that model and affected by the evolution of western society, Maslow (1943) expanded the view of motivation, based on basic physiological needs and only radiating into self-expansion when those basic needs are satisfied. A large body of literature outlines motivation research from Herzberg (2008) through Deci (1971) to Csikszentmihalyi (1990). The MTE in a female

demographic has been researched by Homan and Tylka (2014), Sattler *et al.* (2018) and others.

Homan and Tylka (2014) looked at exercise-induced positive body image issues in a female demographic. The study was informative in the topic focus, as well as in the methods procedure approach, in that it used validity questions to assess inattentive and random responses. The project was conducted in the USA and used female adult undergraduate students as a sample, which presented some limitation to the study. Sattler *et al.* (2018) assessed differences between male and female genders in relation to weight-based stigma and MTE. The gender focus was a useful background to this project and informed the methodology structure. However, the sample itself, it included individuals with concerns about their weight and the strategy itself included multidisciplinary interventions which presented a considerable difference in focus. All existing literature contributed in some way to the project and the huge scope of existing research was appreciated.

Existing literature on SWB dates back even earlier to Aristotle in 4th century BC (Aristotle, 2012), through to the last several decades of writings by Csikszentmihalyi (1990), Lyubomirsky, King and Diener (2005), Kahneman and Deaton (2010), Rath, Harter and Harter (2010) and behavioural science (Smelser and Baltes, 2001; Dolan, 2019).

The combination of exercise and WB has also been researched (Ryan and Frederick, 1997; Briki, 2018; Nezlek *et al.*, 2018), however not specifically in relation to the MTE aspect. The SWB topic in the female demographic has also been a subject of academic writing from Joshi (2010), who investigated the differences in male and female WB in the corporate setting, to Helgesen and Goldsmith (2018) who offered a

practical guide in coping strategies for women, in relation to western society and its perception of female behaviours.

This project aims to address the perceived gap in existing literature on the relationship between SWB and exercise motivation in the female demographic in the UK. Further, whilst building on the all the above contributions, views the topic via an alternative lens of analysis of their correlation. The project maps the interaction of the exercise motivation, age and simultaneously their view of their level of SWB. Moreover, the project considered the concepts already developed in the academic field of social sciences and examined their correlation as affected by age and gender.

Both topics, MTE and WB, have also been researched in relation to different age groups. Charles, Reynolds and Gatz (2001) looked at a longitudinal sample in age-related differences social psychology study. The study, whilst removed in its core interest, was informative in the use of methods, especially in the self-reported measure of health, which was used as one of the sub-scales. Charles, Reynolds and Gatz (2001) assessed positive and negative affects over three generations, using a scale with psychometric properties within WB scales. A study by Steltenpohl *et al.* (2019) showed the qualitative changes in exercise motivation with age. They concluded that exercise motivation becomes an emotionally driven present-day focus in older adults. The study was closer in its primary topic, but used focus groups as a sample, and direct content analysis with iterative categorisation. The existing studies and their methods informed this research and provided essential grounding. In addition to these studies, this research combined aspects of WB and exercise motivation to determine the potential correlation and effect of age-related changes in a mixed-methods project.

The methods used in existing research provided the basis to the design of this project, as a mixed-methods study. The research into MTE to date has largely used quantitative methods of data collection (Briki, 2018; Weman Josefsson, Johnson and Lindwall, 2018) and the SWB studies have equally not offered rich narrative data (Deci and Ryan, 2008c; Layard, 2010). The quantitative data collection has the potential to produce reliable and valid data, and to build on this trade, this project used a phase 1 quantitative data collection, with a phase 2 qualitative data collection, to also merge the gap in the existing literature. To contribute in a meaningful way this project asked respondents who participated in phase 1 to elaborate on their scale answers by adding rich narrative in the phase 2 interviews. The Literature Review chapter further linked the contribution of this project to the academic field of behavioural theories, exercise motivation, WB and other related sub-topics. The contribution from the perspective of methods as partly outlined above, was grounded in the consideration for the correlation of variables specifically in the quantitative phase 1.

The age aspect was determined as an independent variable to see how the dependent variables of MTE and WB were represented over different age groups. Furthermore, the qualitative data searched for further evaluation of the themes emerging from phase 1. Previous research often set variables, such that types of MTE and exercise itself served as predictors of adherence to exercise or WB (Teixeira, 2012; Sylvester *et al.*, 2018). The BREQ 3 scale used in an adapted format in this project had five subsets, which are based on the SDT and in previous research showed its value in determination of exercise behaviours (Fortier *et al.*, 2007; Teixeira, 2012). The limitations in research are in the SDT constructs, such as WB in relation to exercise, but also in the instruments of measure. The original plan for this project was

to use two instruments, which were both based on the SDT, however, the WB scale proved unsuitable due to the American English wording of questions, which were rejected by the Pilot study. The BREQ 3, whilst grounded in the SDT, is provided by Bangor University and was received well by the UK-based female demographic in the Pilot study. Therefore, to fill the gap the project design combined the adapted BREQ 3 and the OECD (2013) SWB measure questions to create a questionnaire which provided the same phrasing in both instruments and combined well.

This project then aimed to determine the processes in behavioural regulation. The existing literature provided the basis to this project and the project findings provided additional new knowledge to fill some of the existing gaps in the literature. Additionally, one of the aims of the project was to contribute to the existing professional knowledge and experiences of the researcher.

3.9 Contribution to professional practice: impact of reflexive practice

The researcher's professional practice in the field of health and WB dates from 2001 to the time of the conducted research. That included work with hundreds of female clients and exercise class attendees. The years of experience, of input from women of all ages and circumstances, have resulted in the interest to work on this research project. In turn, the findings and conclusions of the study aimed to directly contribute to professional practice by providing new knowledge and allowing for better practice.

The fitness and sport industry comprises a wide range of professional positions within which qualified professionals aid sport’s participants, personal training clients and members. The industry is in many aspects currently standardised by CIMSPA

which provides standards for education and regulation. Those who wish to work in the sector of sport, leisure and fitness can gain professional qualifications and education, which are science and evidence based, via CIMSPA. The institute also provides a wide range of CPD courses and membership based on regular CPD.

The science of sport and physical activity has a depth of knowledge grounded in empirical research, evidence and theory spanning over several decades. Some of the theories that underpin professional practice have been noted in the Literature Review chapter. Many of those theories such as Theory of Planned Behaviour or ART give basis to those professional courses supplied by providers like CIMSPA. In theory therefore, the state of professional practice ought to reflect those theories via the education provided by a standardised body. However, it appears that the knowledge that an exercise professional gains via training is not always applied in practice as evidenced by the author's professional experiences which gave impetus for this study. This project was in part designed to learn more about the motivations and behaviours of physical exercise participants. The findings provide additional material which could extend the CPD education material currently provided, or the in-house training provided by an employer. The specifics of what would that look like in reality is a matter for future dissemination of findings into professional practice via the cooperation between the author and professional bodies and organisations.

It is equally essential that the author's own practice grows post-doctoral studies because it will inevitably include aspects learned during the research process and implementation of findings into her own clinical practice. Evidence based practice, especially in occupational practice, is an essential element in the provision of advisory guidance related to exercise and wellbeing. In that context the combination of

information provided by a client, experience gained within clinical practice and existing research, form the evidence-based practice for fitness and exercise professionals. What this project contributes to the author's own practice experience lies within all three. The project provides findings that inform new knowledge on women's perception of MTE and WB, it outlines a review of existing research, and contributes new and confirmatory findings. Whilst the initial impetus for the project was based on the author's professional experience, in its findings it added a new element to it.

Furthermore, the contribution to other professionals and professional bodies that operate in the field of health and WB would be of value. The dissemination of results aims to include the delivery of WB workshops to teachers, instructors and coaches who work with their own students and clients in variety of functions from exercise to nutrition, as well as to the general female audience.

The dissemination of findings in the academic field could constitute written material in the form of peer-reviewed academic journal articles, however there is no active intent at the time of this writing. Reflexivity has been a constant during the process of this research and became an opportunity to combine professional experience and knowledge with academic research. The current issues that influence the state of the profession include the effects of the global pandemic of COVID 19 amongst others. The contribution to practice as well as profession would have the potential to address the effects of the subsequent fallout in mental health and SWB of women.

Section in the Conclusion chapter outlines realistic aims for dissemination of findings into professional practice and as a contribution to research, as based on the actual results.

3.10 Chapter summary

This chapter, following the Literature Review, prepared the ground for the next step of analysis, as outlined in the Results chapter. The non-linear process of the project included several stages of design of the quantitative phase 1, which was finalised post-Pilot study, including 10 female participants. The data collection was determined to be via a questionnaire, incorporating age, ethnic background, and gender questions (*GSS*, 2020; ONS 2021c), followed by WB questions (OECD, 2013) and MTE questions based on a 5-point Likert scale BREQ 3 (Bangor University, 2022). Age, gender, and ethnicity questions were based on GSS recommendations and the ONS census 2021, where age followed Grouping B standardisation (*GSS*, 2020). The 0 to 10 scale WB questions were sourced from the OECD (2013) recommendations. The MTE questions were adopted as 4-question 5 sub-scales in their entirety, including External, Introjected, Identified, Integrated and Intrinsic motivation questions. The Amotivation sub-scale was not included, based on Pilot study feedback. The BREQ 3 draws on Self-Determination Theory (Mullan and Markland, 1997) to measure the continuum of behavioural regulation in exercise context (Markland and Tobin, 2004). It has been validated by previous research into the determination of exercise behaviour (Ingledew, Markland and Ferguson, 2009; Teixeira, 2012). The BREQ 3 original 6-subset questionnaire was provided by Bangor University (http://exercise-motivation.bangor.ac.uk/breq/theory.php).

The questionnaire (Appendix 1) was constructed in and distributed via Qualtrics software, provided by the UoS. A number of 181 completed questionnaires were collected and the final 146 were prepared for analysis via SPSS. Post-data screening,

Cronbach's alpha was used to report on the consistency of the instrument of measure. Descriptive statistics for the instrument scales and demographic questions included calculations for the Mean, Standard Deviation, Minimum and Maximum. Inferential statistics addressed RQs via testing of associated hypotheses. The Shapiro-Wilk test was used for testing of normality of data. For RQ 1 the Spearman's correlation reflected non-parametric data, as did Pearson's Chi-squared test for RQ 3 and Kruskal-Wallis for RQ 4. The full analysis is detailed in Chapter 4, Results.

Sampling for the phase 1 accounted for the need for meaningful data collected from a sample representing a UK female population. Potential respondents were identified via sources within the Health and Fitness industry: WB and Pilates studio, local rowing club, Nutrition advisory service client database, and a company database of corporate gym attendees. The sampling was therefore non-random purposive sampling, by the choice of those organisations. However, that was the extent to which the author determined the sample. The strategy for sample size was based on previous research (Markland, 2009; Lovell *et al.*, 2016).

The qualitative phase 2 data collection was planned to be semi-structured interviews as a most suitable fit for the study (Saunders, Lewis and Thornhill, 2016). The interview questions (Appendix 9) were designed to address the qualitative aspects of RQs and remaining hypotheses. The Pilot study included one participant and did not present any significant issues for correction, however, it did inform the Interview Schedule Aide-memoire (Appendix 9) and Interview Contextual Data sheet (Appendix 10). The sample selection was based on the following criteria:

- to select from a pool of phase 1 respondents who, at the end of their questionnaire, agreed to take part in phase 2 by providing their email address

- to replicate the distribution of ethnic backgrounds in phase 1 sample
- to replicate the distribution across age groups from phase 1 sample

The final number of participants was 11, and the semi-structured interviews took on average 20 minutes of recorded conversation. Use of TA was deemed the most suitable qualitative analysis strategy.

The following Results Chapter 4 provides the results of the data analysis. There is also the follow-up interpretation of the interaction of quantitative and qualitative results and what has been achieved in relation to the purpose of the study in the Discussion Chapter 5.

Chapter 4: Results

4.1 Introduction

For collected data to present meaningful information, to answer the RQs and deal with the associated Hypotheses, a variety of analytical techniques have been used (Saunders, Lewis and Thornhill, 2016). This chapter presents the quantitative phase 1 and qualitative phase 2 data and the data findings. Furthermore, the chapter is divided into two sections, to reflect the two phases.

In section 4.2, the quantitative results are presented, starting with the results of the data screening (4.2.1), followed by an assessment of the instrument reliability (4.2.2). The descriptive results for the demographic data of the survey (4.2.3) are then presented, followed by descriptive statistics of the instrument scales (4.2.4). Thereafter the results of the inferential statistics (4.2.5) are provided, followed by a summary of the key quantitative results (4.2.6).

Section 4.3 presents the results of the qualitative semi-structured interviews analysis. The sample characteristics are introduced first (4.3.1), followed by data screening and NVivo 12 coding specifications (4.3.2), and then the introduction of emergent themes (4.3.3). The a priori codes-based themes (4.3.4) which directly address the RQs, and hypotheses constitute a large part of this chapter, followed by a shorter section on In vivo codes-based themes (4.3.5). The summary (4.4) outlines the qualitative results presented in this chapter.

This descriptive Results chapter is followed by the analytical Discussion chapter devoted to the interpretation of the findings.

4.2 Quantitative data

4.2.1 Results of data screening

Following data screening 146 out of 181 responses remained for subsequent analysis. Data were coded for clarity during the analysis. The Mean score for each instrument scale (Intrinsic motivation, Integrated motivation, Identified motivation, Introjected motivation and External motivation; and SWB score) was calculated as a new variable (Table 4). Additionally, the highest scoring type of Motivation within the sample's age groups was calculated. Following the calculations, the reliability of the instruments was assessed followed by descriptive analyses of the demographic and instrument variables.

4.2.2 Instrument reliability

To test for internal consistency between the scale items Cronbach's Alpha calculation was applied. The results showed positive inter-item correlations, which was expected, as all items were phrased in similar positive wording. Cronbach's Alpha scores were calculated for the two-item SWB scale, as well as for each of the five exercise motivations four-item scales. Finally, Cronbach's Alpha scores were calculated for the entire BREQ 3 (minus the Amotivation scale).

Acceptable Cronbach's alpha scores were achieved for each variable assessed: Well-being (0.956), External motivation (0.847), Integrated Motivation

(0.902), Intrinsic Motivation (0.904), Introjected Motivation (0.856), and Identified Motivation (0.760).

The overall 20-item BREQ 3 scale, with the Amotivation subscale removed, was also assessed, resulting in a $\alpha = 0.905$. However, the whole scale inter-item matrix showed negative values in External and Introjected motivation. The items were recoded to determine if this may address the identified issue. There were no substantial changes detected for the Cronbach's Alpha score. Therefore, the decision was made to use the instrument in its original format, with the 5 subscales used separately within analysis, not as a whole BREQ 3 instrument. All scores are summarised in Table 4 below.

4.2.3 Descriptive statistics for demographic data

Demographic data regarding the participants were determined to categorise the study sample. The frequency and percentage representation were determined for gender, age, and ethnicity.

When considering gender, the demographic question allowed for an inclusive range of demographic choices, but data collection showed a 100% female demographic within the sample (Table 2).

Regarding age, the sample represented the age group 18 - 24 in 7.5% of respondents, 25 - 44 in 47.3%, 45 - 64 in 41.1%, and 65 to 74 in 4.1% of respondents (Table 2). The 75+ age group was not represented at all, and it was therefore not included in the data analysis. The bar chart of the age groups distribution within the sample is included in Appendix 4, as Figure 12.

Specification was made for only those residing in the UK to take part in the survey, however the ethnic background question additionally allowed for richer data, showing which ethnic background the respondents identified with. From the respondents, 82.2% identified with a White British ethnic background and the interpretation of the data within the Discussion chapter reflects that. The next highest representation was Indian ethnic background at 4.1% of the sample. Overall, there were 18 ethnic backgrounds represented by the sample. Table 3 provides results of the representation of all the ethnic groups within the sample.

Table 2: Demographic data for gender and age

Demographic		Frequency	Percentage
Gender	Female	146	100%
Age groups	18 - 24	11	7.5%
	25 - 44	69	47.3%
	45 - 64	60	41.1%
	64 - 74	6	4.1%
Sample size		146	100%

Note: *These refer to backgrounds as defined by the respondent
(Source: SPSS analysis by the author)

Table 3: Demographic data for ethnic background

Ethnic groups		Frequency	Percentage
White British		120	82.2%
Other white background*	Australian	2	1.4%
	Eastern European	1	0.7%
	Italian	1	0.7%
	Polish	1	0.7%
	Serbian	1	0.7%
	South African	2	1.4%
	Swedish/British	1	0.7%
	Swedish/Norwegian	1	0.7%
	White European	1	0.7%
	Unspecified	1	0.7%
White and Asian mixed background		1	0.7%
Other mixed background*	Latino American	1	0.7%
	Unspecified	1	0.7%
Indian		6	4.1%
Pakistani		2	1.4%
Chinese		2	1.4%
Caribbean		1	0.7%
Sample size		146	100%

(Source: SPSS analysis by the author)

4.2.4 Descriptive statistics for instrument scales

This section presents the descriptive statistics for how the participants responded for each scale. The descriptive statistics calculated for the scales included the Mean, Standard Deviation, Minimum and Maximum (Table 4). Specifically, the descriptive scores for WB and each of the 5 types of motivation to exercise were calculated.

The mean score for the SWB 0 to 10-point Likert scale was 6.84, showing that respondents scored generally high on their self-reported level of WB. The minimum reported score was 1 and the maximum 10, showing a wide range of levels within the sample. The standard deviation (SD) for the SWB scale was 1.68. Figure 3 presents a visual illustration of the results on a histogram.

The MTE scale was a 5-point Likert scale, ranging from 'Definitely not true' to 'Very true' for all five subscales.

External motivation reported a Mean of 1.67, with a minimum of 1 and maximum of 4.75, with SD of 0.77. This shows that respondents reported low levels of external motivation. Figure 4 presents a histogram of the results.

The Identified motivation reported a Mean score of 4.17, with a minimum of 1 and maximum of 5, with SD of 0.71. This showed the highest scoring for a type of motivation within the sample. Figure 5 presents a histogram of the results.

The Introjected motivation Mean score was 3.14, with a minimum of 2 and maximum 5 scores, and SD of 1. This showed that none of the respondents strongly disagreed with that question.

The Intrinsic motivation Mean was 3.86, with a minimum of 1 and maximum of 5, with SD 0.89. This showed the second highest scoring for type of motivation within the sample.

Lastly the Integrated motivation Mean was 3.52, ranging from 1 to 5 and SD of 1.14.

When assessing the variability in responses for each of the scales, Standard deviations were low, suggesting that responses to scales were consistent in the sample. This was particularly true for Identified and External motivation. The results are further elaborated on within the inferential statistics.

Table 4 summarises the results stated above.

Table 4: Descriptive statistics for instrument scales

VARIABLES	MEAN	SD*	MIN.	MAX.	Cronbach's Alpha
Subjective Well-being questions	6.84	1.68	1	10	a = 0.956
External Motivation questions	1.67	0.77	1	4.75	a = 0.847
Identified Motivation questions	4.17	0.71	1	5	a = 0.760
Introjected Motivation questions	3.14	1.00	2	5	a = 0.856
Intrinsic Motivation questions	3.86	0.89	1	5	a = 0.904
Integrated Motivation questions	3.52	1.14	1	5	a = 0.902

Note: *Standard Deviation
(Source: SPSS analysis by the author)

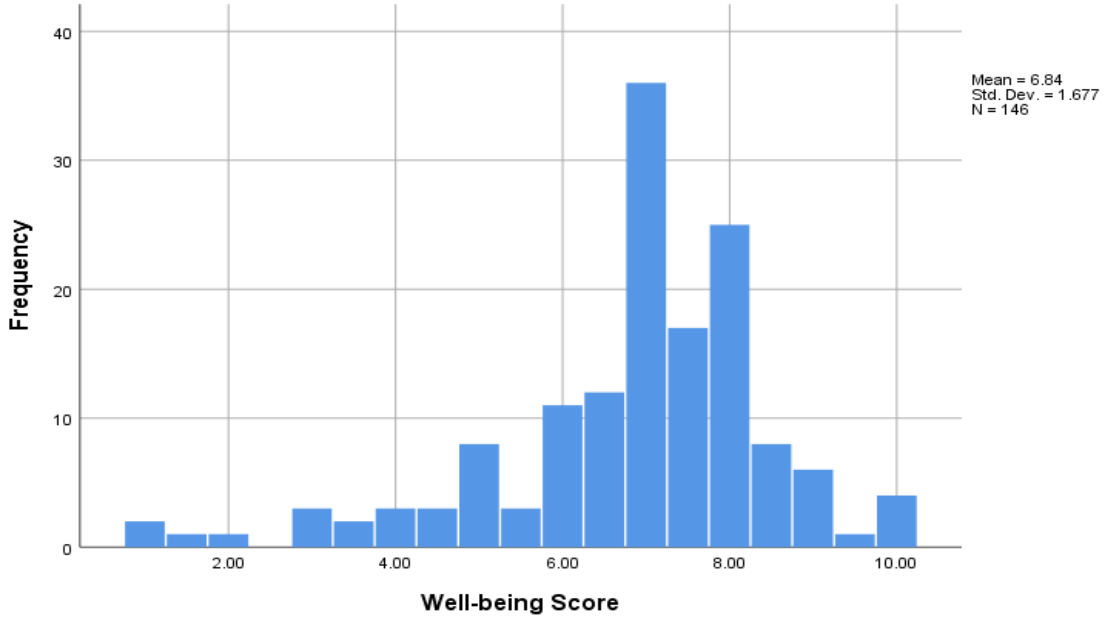

Figure 3: Well-being score histogram

(Source: SPSS analysis by the author)

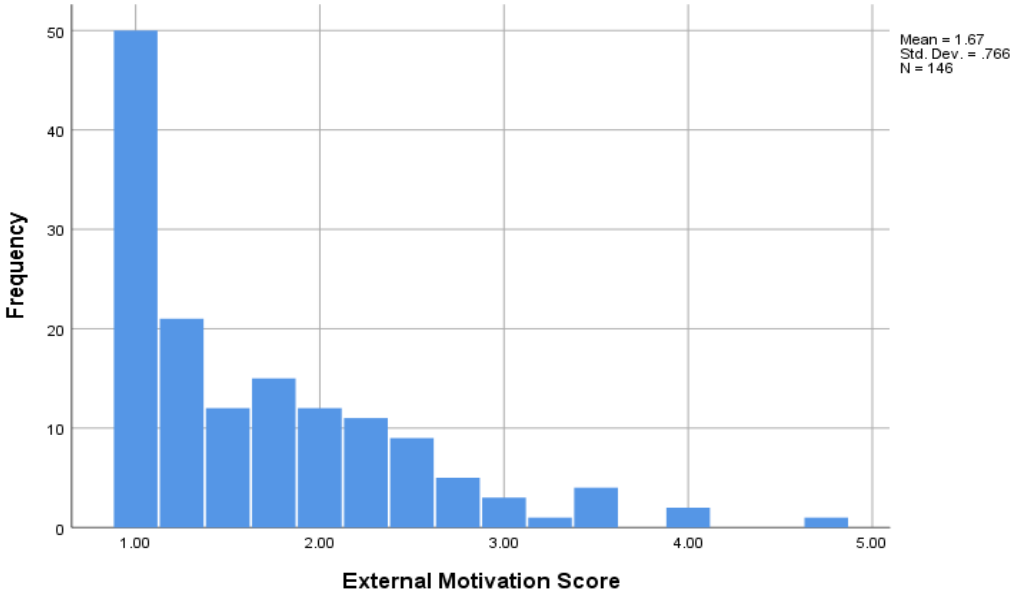

Figure 4: External motivation score histogram

(Source: SPSS analysis by the author)

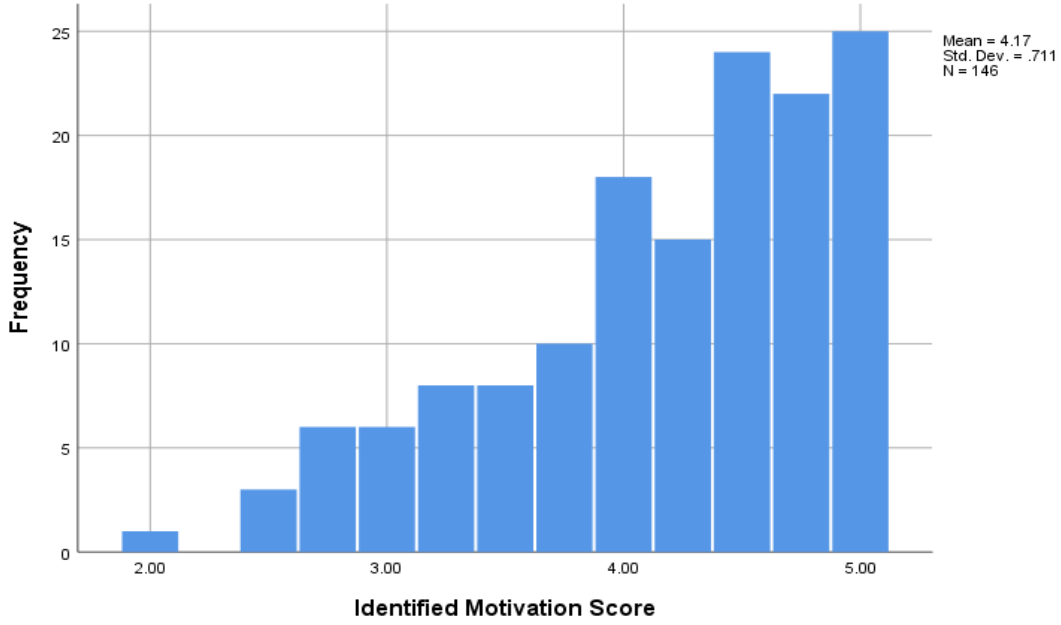

Figure 5: Identified motivation score histogram

(Source: SPSS analysis by the author)

4.2.4.1 Tests of normality

The means of the scale variables were assessed to determine if the data were parametric or not. The normality was determined by assessment of statistical tests and by visual inspection of the graphical presentation. The scales assessed were the Well-being scale, External Motivation, Identified Motivation, Introjected Motivation, Intrinsic Motivation, and Integrated Motivation.

Based on the sample size the Shapiro-Wilk test was adopted as numerical means of normality assessment. The Sig. value of the Shapiro-Wilk test was below 0.05 for all the variables. This meant that the data significantly deviated from a normal distribution, thus normality cannot be assumed (Table 5).

Further tests included skewness and kurtosis values to determine normality. All the assessed data reported lower than 3 for kurtosis, meaning that the distribution was light tailed relative to normal distribution. The following scales reported negative kurtosis values, meaning that more data were located closer to the Mean and less in the tails and therefore with a lack of outliers. Identified Motivation kurtosis = -.161, Introjected Motivation kurtosis =-.482, Integrated Motivation kurtosis = -.551), Intrinsic Motivation kurtosis = -.168. A summary is presented in Table 5.

The skewness of the data reported a lack of symmetry and therefore more support for non-parametric data classification. There was negative skewness reported for five of the scales, Identified Motivation skewness = -.794, Introjected Motivation skewness = -.244, Integrated Motivation skewness = -.509, Intrinsic Motivation skewness = -.537, Well-being skewness = -.1.174. The negatively skewed data indicated that the data were skewed left. The summary is presented in in Table 5. Skewness close to zero would be identified by symmetry on a visual aid and would indicate that the data are normally distributed. Negative values for skewness indicate skewness to the left on a visual aid and positive values would show the right tail on a graph to be long in comparison to the left tail.

Furthermore, the Q-Q Plots (Figure XIII) of the score for all scales have been visually inspected for normal distribution. The graphical illustration of the results confirmed non-parametric data distribution. Q-Q Plots are included in Appendix 6.

The above tests reported not normally distributed data. As Likert scale data were used in the questionnaire, this was not unexpected, but necessitated the use of non-parametric statistics in the subsequent Inferential analysis.

Table 5: Tests of normality

Variables	Shapiro-Wilk		kurtosis		skewness	
	Statistic	Sig.*	Statistic	SE**	Statistic	SE**
Subjective Well-being	.906	.000	2.083	.399	- 1.174	.201
External Motivation	.833	.000	1.749	.399	1.339	.201
Identified Motivation	.911	.000	- .161	.399	- .794	.201
Introjected Motivation	.974	.007	- .482	.399	- .244	.201
Intrinsic Motivation	.937	.000	- .168	.399	- .537	.201
Integrated Motivation	.933	.000	- .551	.399	- .509	.201

Note: *Significance level, **Standard Error
(Source: SPSS analysis by the author)

4.2.5 Inferential statistics

The inferential statistics present specific calculations that were conducted for those RQs and associated Hypotheses which had a quantitative aspect. The complete list of RQs and hypotheses can be viewed in Appendix 12. The numerical order of the sections below presents the results as related to RQs and Hypotheses. The quantitative RQs and Hypotheses are:

Research questions with a quantitative aspect:

1. What is the correlation between the 5 different types of motivation for exercise and overall subjective well-being in women?

3. Does a woman's age play a role in the reported dominant type of motivation to exercise?

4. Does a woman's age play a role in the reported level of well-being?

Hypotheses based on research questions:

Hypothesis 1.1: Reported external motivation and introjected motivation to exercise correlate with a lower reported subjective well-being in women.

Hypothesis 1.2: Reported identified and integrated motivation to exercise correlate with a higher reported level of subjective well-being in women.

Hypothesis 1.3: Reported intrinsic motivation to exercise correlates with higher subjective well-being in women.

Hypothesis 3.1: Age plays a role in the reported type of motivation to exercise.

Hypothesis 4.1: Age plays a role in reported levels of well-being.

4.2.5.1 Inferential statistics results for assessment of research question 1

For the first RQ and the associated hypotheses 1.1, 1.2 and 1.3, a Spearman's correlation was conducted to assess if any of the five types of MTE related significantly to the individual's SWB score. Spearman's correlation was used to reflect non-parametric data.

The results showed a weak negative correlation between External Motivation and WB, which was statistically significant, (r_s = -.201; p = .015). This means that as External Motivation increases, SWB decreases, thus supporting the alternate Hypothesis 1.1.

Similarly, the Introjected Motivation and SWB also showed a weak but significant negative relationship, (r_s = -.232; p = .005). This equally signifies a relationship where when Introjected Motivation increases, SWB decreases, also supporting the alternate Hypothesis 1.1.

A statistically significant, weak, positive relationship between Intrinsic Motivation and SWB was detected, (r_s = .170; p = .040), showing that when Intrinsic Motivation increases, SWB also increases, therefore supporting the alternate Hypothesis 1.3.

All significant relationships are visually illustrated as scatter plots in the figures below.

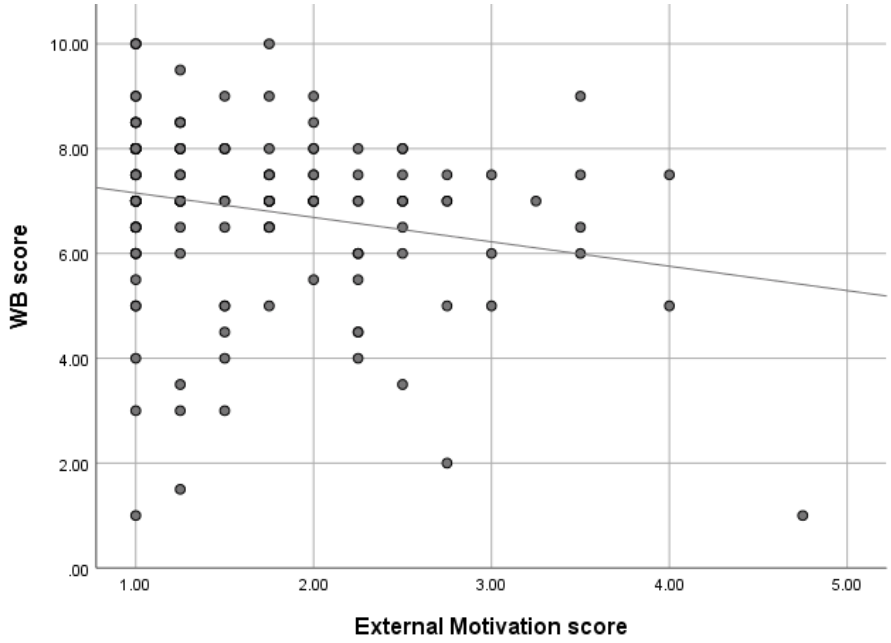

Figure 6: Scatter plot: Fit line of Well-being score by External motivation score (Source: SPSS analysis by the author)

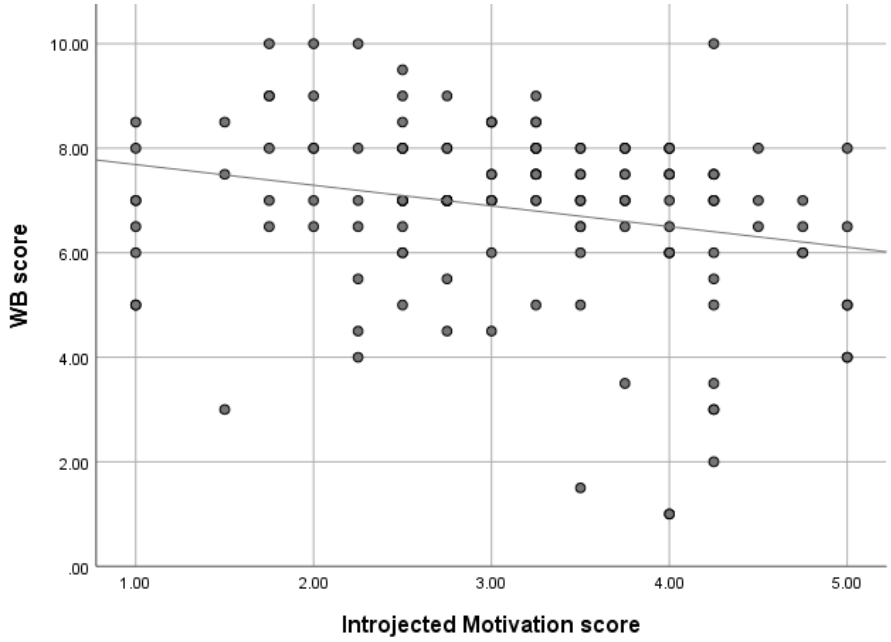

Figure 7: Scatter plot: Fit Line of Well-being score by Introjected Motivation score (Source: SPSS analysis by the author)

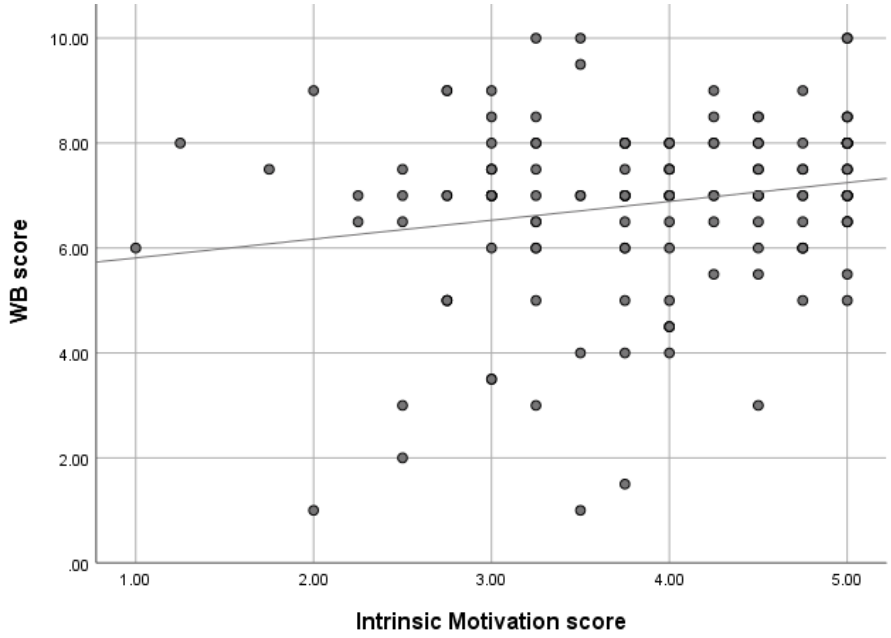

Figure 8: Scatter plot: Fit Line of Well-being score by Intrinsic Motivation score
(Source: SPSS analysis by the author)

In case of Hypothesis 1.2 no significant relationship was found, thus the Null Hypothesis was accepted. This hypothesis related to Identified Motivation, which was not significantly correlated to SWB (r_s = .028; p = .738), and Integrated Motivation which did not significantly correlate with WB, but trended towards significance (r_s = -.134; p = .108), thus a larger sample size might provide further clarity.

Appendix 5 summarised all correlations in Table 7.

4.2.5.2 Inferential statistics results for assessment of research question 3

RQ 3 sought to assess if the most prevalent MTE type differed across age groups. To investigate the associated Hypothesis 3.1 and determine if age groups differed in what their leading type of exercise motivation was, a chi-squared analysis

was run. To run this analysis a new variable was created, which represented the Highest ranked motivator per participant. This new categorical variable was used in a Pearson's Chi-squared test to determine if there were any associations in how participants responded to these two categorical variables. No significant association was detected ($X^2(12, N = 146) = 18.043$, $p = .114$), suggesting that leading motivations were expressed irrespective of age. Thus, these results failed to reject the Null Hypothesis 3.1 showing that nothing drives the relationship between the two variables in one direction. Figure 9 shows the visual illustration of the reasonably uniform pattern in scoring of the two highest scoring motivators (Identified and Intrinsic motivation) in the age groups 25-44 and 45-64, however these results are not statistically significant.

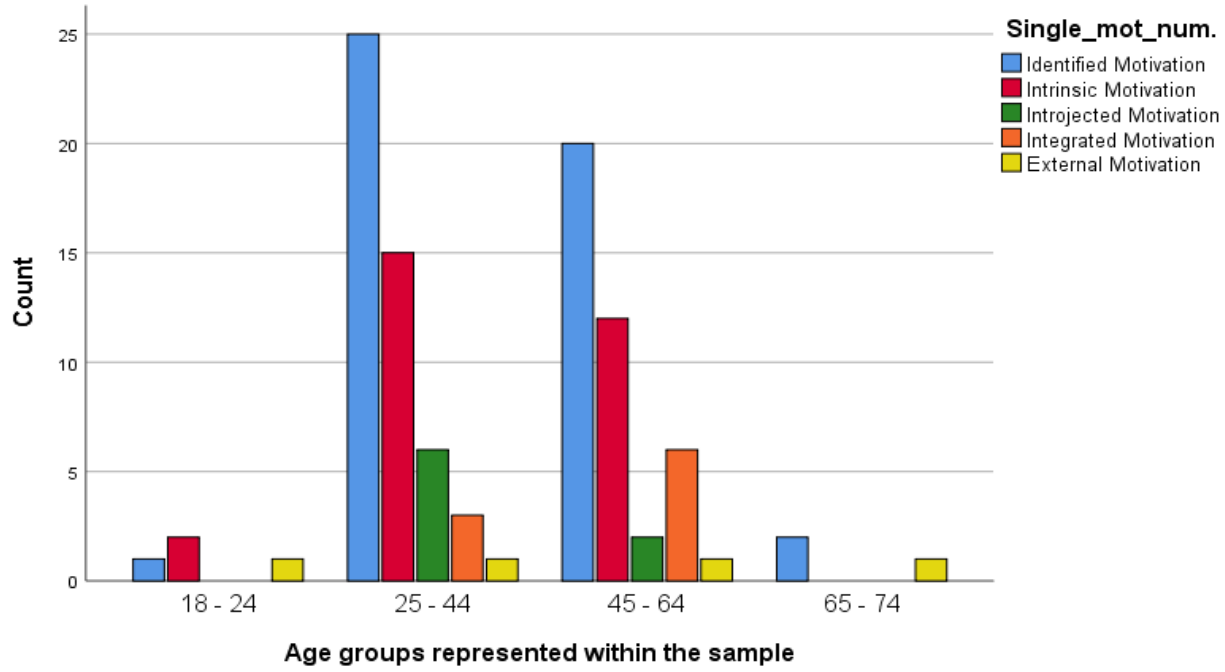

Figure 9: Pearson's Chi-Square test Bar Chart for frequency of each motivator by age group

(Source: SPSS analysis by the author)

4.2.5.3 Inferential statistics results for assessment of research question 4

To assess how self-reported SWB differs across the age groups a Kruskal-Wallis test was run, resulting in a significant difference between age groups ($H_{(3)}$ = 9.553, $p < 0.05$). A further post-hoc analysis was run to determine which age groups significantly differed from each other. The significance between age groups was driven by the age group 25-44 (Mean rank = 68.64) being significantly higher than 18-24 (Mean rank = 46.00) and significantly lower than 45-64 (Mean rank = 84.10). This supported the alternate Hypothesis 4.1. The Null Hypothesis was rejected. Figure 10 provides a visual illustration of the results.

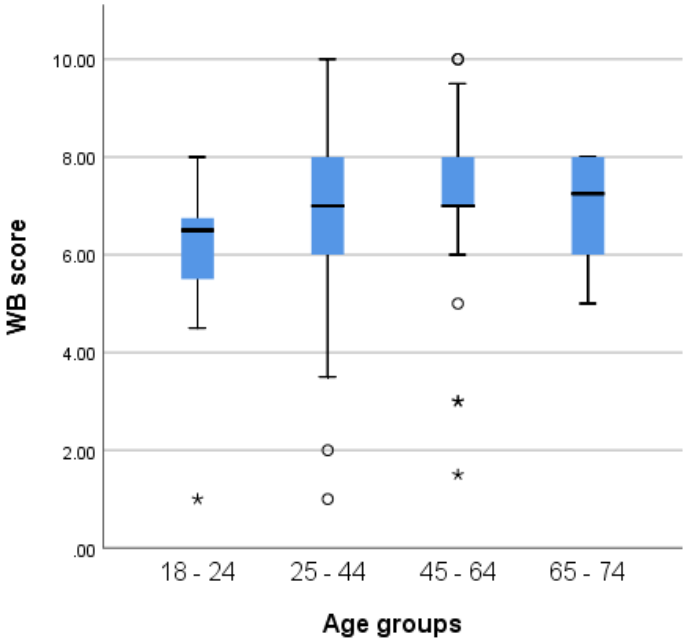

Figure 10: Boxplot Kruskal-Wallis
(Source: SPSS analysis by the author)

4.2.6 Summary

The quantitative phase of data collection and analysis was successful. It illustrated the key themes and reported results in descriptive statistics, which affected how the data were interpreted.

The descriptive statistics showed that the 146 female respondents were representatives of mainly the two middle age groups (25-44, 47.3%; 45-64, 41.1%), and in majority from British White ethnic background.

RQ 1 was answered by accepting Alternate Hypothesis 1.1 and 1.3 and finding non-significant results for Hypothesis 1.2. This led to the qualitative phase, which further explored the theme, by showing which motivators and barriers play a role in a woman's MTE. Furthermore, based on the Quantitative analysis results, an additional

qualitative hypothesis was added, asking if motivators to exercise changed and varied with age, thus adding a question in the semi-structured interview.

RQ 3 was answered by accepting Null Hypothesis 3.1, as no significant results were found for the relationship between types of motivation and age groups. This theme was further explored in the following Qualitative data collection, by asking whether motivators to exercise changed with age.

RQ 4 was answered by accepting the Alternate Hypothesis 4.1 based on the significance found between WB and age groups. This theme was further explored by means of Qualitative data collection.

4.3 Qualitative data

In line with the inductive format of the project, the qualitative phase was carefully planned before the data collection (Hanson *et al.,* 2005). The semi-structured interviews were conducted with 11 respondents, whose selection was based on the quantitative phase data and findings, representing all relevant age groups and a wide range of ethnic backgrounds. The semi-structured interviews were conducted between 14 October and 9 November 2021. Each interviewee was provided with a Participant Information Sheet (Appendix 7) and was asked to sign a Consent Form (Appendix 8). In this chapter, to allow the reader to conceptualise and follow all references in themes and subthemes, participants have been identified as P1 to P11 at the end of a reference. All anonymity has been preserved.

The semi-structured interview questions (Appendix 9) were based on the RQs and the Quantitative data findings.

4.3.1 Sample characteristics

The sample size consisted of 11 interviewees. The participants were selected from the initial quantitative phase sample, and all identified as female. The four represented age groups reflected the Quantitative data sample. The age groups were represented as follows: two interviewees represented the 18-24 age group; four interviewees were from the 25-44 age group; four interviewees from the 45-64 age group and one from the 65-74 age group. The varied ethnic backgrounds of the participants also reflected the Quantitative data sample and were represented as follows: six interviewees (54%) identified with a White British ethnic background; one respondent (9%) identified with each of the Chinese, Eastern European, Polish, South African and Swedish/British ethnic backgrounds. All respondents resided in the UK.

4.3.2 Data screening, NVivo 12 and coding

Each interview lasted on average 20 minutes. This relatively short time for an interview to collect valid data was due to all the preliminary and introductory conversations being conducted prior to the interview proper. The questions asked in the interview (Appendix 9), inclusive of probing questions, were specific and answered by the participants in short and succinct manner. Following transcription, the data were assessed using Thematic Analysis. The initial assessment of findings included data from the Interview Contextual Data Sheet (Appendix 10) and Interview Schedule Aide-memoire (Appendix 9). NVivo software allowed for detailed assessment of each transcript. All 11 transcripts were coded, resulting in 43 codes (Table 8, Appendix 11).

The coding practice was repeated several times and codes were reviewed considering emerging themes. Some of these were a priori codes driven by the interview questions, which were based on RQs and the Quantitative data findings. Others were inductive in vivo codes driven by the data. The sections below reflect this distinct differentiation.

4.3.3 Emergent themes

Each code and its references were re-assessed and subsequently organised under labelled themes (Table 6), according to occurrence and relationship to the RQs and hypotheses. Themes as theoretical constructs were developed from the 43 codes via a six-step process of Thematic analysis (TA) as summarised by Braun and Clarke (2006). Additionally, the thematic analysis allowed for recognition of semantic and latent codes (Table 6) and broader context inclusion. Each Theme and Subtheme paragraph below reports on how the specific analysis informed the results. In general terms, the TA allowed for the establishment of themes based on frequent and relevant references. Using the two strands of the TA searching for (a) descriptive (semantic) references in which data tend to be used in illustrative ways and (b) conceptual (latent) focus on "interpretation of the participant's worldview from the standpoint of the researcher" (Braun and Clarke, 2021, p. 41), allowed for a richer content.

The resulting 43 codes (Table 8, Appendix 11) were categorised into 11 themes (Table 6): eight a priori codes-based themes dealing with related hypotheses and three in vivo codes-based themes leading to potential new propositions. The complete

list of RQs and hypotheses can be viewed in Appendix 12. The RQs and hypotheses with a qualitative aspect were:

RQ 2. What are the common motivators and the barriers to exercise for women?

RQ 4. Does a woman's age play a role in the reported level of well-being?

Hypothesis 2.1: Motivators to exercise vary throughout woman's life.

Hypothesis 2.2: Barriers to the motivation to exercise vary throughout woman's life.

Hypothesis 4.2: A woman's attitude towards her well-being changes with age.

Table 6: Themes as derived from Nvivo interview codes

Theme Name	Theme origin	Use in analysis
Motivation - Body	a priori codes	semantic & latent code
Motivation - Mind	a priori codes	semantic & latent code
Motivation - Connectedness	a priori codes	semantic & latent code
Barrier - Body	a priori codes	semantic code
Barrier - Mindset	a priori codes	semantic code
Barrier - Connectedness	a priori codes	semantic code
Well-being & young women	a priori codes	semantic & latent code
Well-being & older women	a priori codes	semantic & latent code
Self-awareness	in vivo codes	semantic & latent code
Feminism	in vivo codes	semantic & latent code
COVID 19	in vivo codes	semantic code
Total: 11 Themes		

(Source: TA analysis by the author)

4.3.4 A priori themes and answers to research questions

This section of the qualitative analysis chapter presents themes that were assessed in relation to the RQs and associated hypotheses with a qualitative aspect. The numerical order of the sections below reflects that. These themes were largely predetermined as a grouping of references about the barriers and motivators to exercise, and WB related codes as based on the questions asked during the semi-structured interviews (Appendix 9). Each theme is introduced, in the context of the relevant RQ and hypothesis, and divided into the relevant sub-themes.

4.3.4.1 Themes for assessment of Hypothesis 2.1

Hypothesis 2.1: Motivators to exercise vary throughout woman's life. In every semi-structured interview, the participant was asked what she considered to be her main motivators to exercise. The answers showed that the dominant motivators to exercise for women in the UK were mainly related to body, mind, and connection to others. The themes 'Motivation - Body', 'Motivation - Mind', and 'Motivation - Connectedness', which were generated using both strands of TA, reflect that below. These themes were based on a priori codes. The a priori codes were a direct result of answers to the interview questions. Each theme was split into the relevant sub-themes that summarise references related to it.

Theme: *Motivation - Body*

This theme emerged as a direct result of the answers to the interview question about dominant motivators to exercise. It summarises examples of statements about motivators related to the physical body. These were frequently referred to in the interviews with all 11 respondents making some form of reference to the body as a motivator to exercise. There were 2 distinct areas of focus, and these were grouped into subthemes: 'Body image' and 'Health & Healthy longevity'.

Body Image

This theme was identified by the TA as significant, because all 11 participants mentioned body image as an aspect that they considered at some point in their life to be a motivator to exercise. As illustrated below, most of the references to body image as an externally motivated focus was reported by younger women or women reporting on their younger years. This participant spoke about her earlier life experiences and compared them to her present time view,

… yea! I suppose, it's interesting isn't it…I used to exercise…because I wanted to be a particular body shape, I think. Hmm, that just concerns me so much less nowadays, so…I think I'm more mindful of wanting to be as well as I can be as I grow older… (P5)

In addition to a focus on semantic meaning the Conceptual and Interpretative strand of TA analysis proved useful here. It allowed for recognition of latent meaning in the way the participant expressed a level of contentment regarding her current attitude. The latent meaning also showed somewhat lesser respect towards her earlier life attitude.

The external motivation is represented here by the presentation of self to others in terms of a specific visual body image. As stated above, the external motivation was shown to correlate with lower WB in the findings in the quantitative phase 1 of this project. Additionally, the section below (section 4.3.4.3) illustrates the lack of sense of WB at a younger age, connected to the declared lesser knowledge of self. Whilst it might be challenging for the reader to connect findings which have not been reported yet, those combined statements enrich the quantitative findings for Hypothesis 1.1.

Every participant, when referring to body image as a motivator, linked this motivation to a young age, as illustrated in following example,

...so, motivation there was to be as thin as possible, so it was like the exercise was to make me thin…to make me more accepted. (P3)

The respondent is referring to past experiences in her youth when "…*there was*…" (P3) a motivation to exercise for reasons related to the aesthetics of the physical body, based on the need for acceptance. The statement, similarly, to the first example, illustrates that at younger age there is a focus on body image. The latent expression showing a somewhat negative impression that stage of life left in the participant. Furthermore, the participant linked her reasoning to acceptance by others. Both semantic statements feed into Hypothesis 1.1, informing the quantitative data findings by giving specific examples of external MTE and its effects on the view of one's own body and on the sense of SWB. When asked to elaborate on her statement the woman said *"…own who you are and accept who you are, don't try to be*

somebody else…" (P3) thus expressing hope for younger women to be less externally driven.

Another participant described the focus on body image and *"aesthetics"* (P8) to be *"superficial"* (P8), thus expressing the perceived lesser value of that attitude. The focus on body image did not come from internal self-knowledge creating IM, but from external pressure as perceived by the participant. The same woman then considered this concept in relation to the perception of others and self-perception. She stated that the aesthetic aspect is important to her at an older age too and why, and how that changed over time,

I would say it has shifted, and that its more important to now look good for myself, than for other people. (P8)

That example helpfully shows that body image preoccupation as the MTE does not have to be negative, and that it is supportive of a higher sense of WB when that focus comes from within one-self, rather than from perceived external pressure.

A participant representing the youngest age group 18-24 clarified the body image motivator from her perspective as *"…looking good naked"* (P7). This statement illustrates the need to respond to external pressure by being motivated to work on the aesthetics of the physical body.

In summary, this sub-theme clearly conveyed that one's perception of their physical body acts as a clear motivator for exercise, but that the reasoning underlying this motivator is not static throughout life. As individuals age, the physical body motivation shifts from a desire to meet others' expectations to a more self-focused

reasoning. These findings support Hypothesis 2.1

The motivation to look after the physical body is not always focused on aesthetic and externally motivated reasoning, as shown in the sub-theme 'Health and Healthy Longevity'.

Health & Healthy longevity

This sub-theme summarises references of participants stating their health and healthy longevity as being motivators to exercise. The MTE to keep healthy at present and at older ages was stated by all five participants representing the two older age groups. The two younger age groups did not report those aspects to be a motivator. The references below show the importance of health becoming more important as life progresses and not at a younger age, "*I just really didn't have the motivation to be healthy when I was younger"* (P8).

The statement supports the finding that a focus on health is not present at a younger age. In latent terms the respondent indicates that she is motivated to be healthy now, at an older age. This illustrates the shift to internally motivated focus.

Furthermore, this motivator was stated to be a long-term one, leading to focus on health as affective of other aspects of life. This woman said,

I think that it's more…I need to do it for myself, for health, for everything… I wanna be much, much healthier. I guess you have more of an understanding of it all now. (P6)

This statement is specifically important to note, because the participant suggests that rather than age it is the understanding of self and health that underpins this motivator. That health and healthy longevity is of real import for women was referenced by other participants. Some related this to the ability to live freely, *"…I think to keep my body healthy, so that getting older I would continue to stay healthy and be able to do things…"* (P9) thus expressing the level of awareness of self and life's progression. This finding is significant to the analysis and further supported in statements linking health and effects of age. The shift to see health as a motivator from the perspective of aging was stated as "*increasingly important"* (P11) and the statements are useful illustrations of the shift in focus with time. This participant elaborated on her description in her view of the future, in relation to healthy longevity as a motivator and the intensity of that motivator at present time,

…but they have seemed to have grown in intensity. You know, I do really want to be able to be a fit 60-year-old…70-year-old…in a way that…I want that a lot more than I wanted to be able to ski. (P11)

In summary, this sub-theme showed the focus on the health of the physical body as an internal motivator. Additionally, the intensity of this motivator increases as individuals age and develop as they come to understand themselves. This related the findings to RQs and Hypotheses as follows. Hypothesis 2.1 was supported by this sub-theme in that the references show how motivators to exercise vary and change throughout woman's life, and how health and healthy longevity become of import as age and SA grow.

The theme Motivation - Body summarises references about the physical body that directly contribute to answering RQ 2, as well as testing of Hypothesis 2.1 by illustrating some of the varied motivators to exercise. The subtheme 'Body Image' contributes concrete examples of external motivation a woman might experience, including the negative tint of that experience. Furthermore, the theme referenced the focus in sub-theme 'Health and Healthy longevity' which become important with time, showing that increase in age and SA are contributing factors. The sub-themes link together via the connection to the physical body. The following theme moves onto motivators related to mind and mindset.

Theme: *Motivation - Mind*

In the sample, women's mindset was shown to have an impact on their MTE. To reflect the participants' narrative this theme is split into sub-themes: 'Feeling Good' and 'Mental Health'. The sub-themes reflect different angles of mind-related constructs. This theme contributes to the testing of Hypothesis 2.1 and answering RQ 2. TA in both strands was used to generate both sub-themes. The following sub-theme reports on participants describing their motivation to be rooted in the overall sense of 'feeling good' because of exercise. It also gives examples which enrich the findings for Hypothesis 1.3 in quantitative phase 1.

<u>Feeling good</u>

The MTE to feel good was stated in semantic and latent terms by seven participants. Furthermore, this sub-theme showed that subsequent overall feeling is enough to motivate the participant to exercise. This aspect was referred to simply and in semantic terms as "*How it makes me feel"* (P3) by some of the participants when asked what motivates them to exercise. But the next statement also reflects on how attending to exercise is viewed from the perspective of a feeling, in this example the feeling is about overall-self,

It is important. For everything. For work to go better, for relationship to go better, for me to be a better parent. If I have time for myself, where that would be something so small as well…it definitely makes me a better person. Or I feel like I'm a better person. (P6)

This sub-theme was determined as important, because it references examples where women link intrinsic motivation to feeling good, not simply in their body but overall. The second statement shows how the participant links exercise and her belief that it consequently makes her a better parent and person. Furthermore, she acknowledges the need to have time for herself which, in the context of the motivators to exercise question, she relates to even small amounts to exercise. This shows her ability to think about her needs, her life, and the ability to create an environment where she can attend to her responsibilities as a *"…better person…"* (P6). This conclusively shows a level of SA needed for that level of contemplation of self. In line with this statement another participant linked exercise and WB, *"…the impact of exercise on your well-*

being is as important" (P8), latently describing the way she experienced the impact of exercise on how she felt overall, not just physically.

Overall, the references related to 'feeling good' were reported from all age groups and so age did not prove to be a significant variable here. The specific contribution of the sub-theme to the RQs and hypotheses is in the addition to the variety of motivators to exercise, specifically motivators related to overall feeling good in one-self. The following sub-theme reports further on mental health as a motivator.

Mental health

This sub-theme was generated by means of TA to reflect on mental health as a motivator in semantic and latent references from 10 participants across all age groups. When responding to the question about dominant motivators to exercise, some participants made a clear link between exercise and mental health in semantic terms, "…*endorphins from exercise are really important for my well-being and my mental health…"* (P3). Hence the reference contributes not only to the semantic note of mental health as a motivator, but also illustrates the participant's understanding of how for her the exercise she does contributes to overall WB. The use of the terminology "…*endorphins from exercise…"* (P3) shows some understanding of how the production of these neurotransmitters during physical exercise affects how she feels, and how this in turn motivates her to exercise.

Another woman documented mental health when asked about her motivators to exercise,

I think it is all encompassing of your physical and mental health. So, for me…going to a spinning class is going to make me feel good, it's going to benefit my health, it's going to benefit my well-being…in a different way than going to a yoga class or a for a massage….um…but I think, yea, I think that they are inextricably connected. Um…and if you can get the balance right then the exercise is beneficial to them both. (P8)

Once more this reference illustrates, in semantic terms, mental health as a motivator. It further illustrates the participant's understanding of self in relation to the effects of exercise on her overall WB. This is important as a contribution to Hypothesis 2.1, by documenting the diversity of motivators that women experience.

A participant from the oldest age group linked her need to exercise to the future effects on her physical body and therefore her sense of mental health in saying "*…it also means that mentally I will enjoy life more if I can stay independent"* (P10). This provides an example of understanding how present-day actions affect her future physically and mentally. Hence the motivators of today are linked to future consequences, which provides a further illustration of the wide range of motivators and the rich narrative of women's MTE.

Some participants saw mental health as an important primary motivator. One woman openly stated that a lack of exercise causes her to feel *"depressed"* (P3), recognising her need for exercise as directly linked to her mental health. Other participants showed understanding of how exercise affects their mental state as their SA grows with age related experiences,

I…I think as you grow older you become much more aware of how interconnected your mental health is with your physical health, I suppose. (P5)

This statement is interesting and important. It links SA and age with mental health as a MTE, and it directly supports Hypothesis 2.1.

In summary, the theme 'Motivation - Mind' supported Hypothesis 2.1, by offering examples of a variety of motivators and the changes in motivators over time in a woman's adult life as related to aspects of the mind, thus contributing to answering RQ 2. Furthermore, the paragraphs showed how women connect mental health to their MTE, which is a significant finding adding to existing literature and professional knowledge. The second theme showed an overlap in findings in that some of the statements documenting feeling good as a motivator linked the effects of exercise to the physical body in the note of endorphin production. At this stage of reporting on findings the overlap is not only interesting but shows how the themes connect and relate.

The following theme 'Motivation - Connectedness' shows the relationships with others to be an aspect in a woman's MTE.

Theme: *Motivation - Connectedness*

This third theme provides examples of references related to exercising with others, or the connection to others, as being in some way a motivator to exercise. This theme is split into sub-themes: 'Togetherness' and 'Parenthood'. The two sub-themes represent the two main groups of references related to relationships with others and exercise motivation. In total, 8 participants made semantic and latent references related to this theme, representing all age groups. This theme further contributed to

answering RQ 2 and supporting Hypothesis 2.1 by providing more examples of motivators to exercise in a woman's adult life.

Togetherness

This sub-theme summarises references where participants stated their enjoyment of the company of others during an exercise activity, and in that it being their motivator for exercise. Some examples illustrated that the direct company of others is a motivator, as reported later in this sub-theme. Some showed others on the periphery of the exercise activity to be of importance to the participant, such as here,

I'm the sort of person who enjoys exercising with people, so whilst I could absolutely go for a run, and that would be free, I would struggle to motivate myself to do that. (P8)

This reference shows just how important the connection with others is for some women, even if the presence of others is indirect to the person or the activity.

Whilst the following example shows the importance of the commitment to others to be an additional motivator,

…um…and I think for me, it's more…the reason I exercise is more…because like, or what motivates me is being around the people that I'm, like my friends, and like-minded people, and I think when that is not there and it is more like an individual…you

know you have to do it by yourself…I'm less motivated to do it and I kind of need that…like the coach to be there… (P4)

Here the participant considers both the connection with others and the commitment to others as motivators. This is another addition to the variety of motivators already referenced in support of Hypothesis 2.1.

Furthermore, participants stated that the social aspect of exercise in direct contact with another person is a motivator. In one statement this was described as "*…and walking and talking…"* (P5) which in the latent meaning could put the social aspect in the forefront as possibly more important for the woman than the exercise itself. This was further supported by another participant, *"I think what can really be motivating is this human relationship"* (P2). These statements are interesting, because even the theme 'Mind - Connectedness' alone gives three different angles of how connection manifests as a motivator, thus supporting Hypothesis 2.1 in the variety of motivators. The conceptual and interpretative TA allowed for the construction of this sub-theme, that documented the social aspect of exercise in rich detail. The references represented different age groups which showed this aspect to be important at different stages of a woman's life, and age was not a factor here. The above shows how human connection with a peer is a motivator, whilst the following sub-theme summarises references from women who stated motherhood-related relationships to be direct and indirect motivators.

Parenthood

All five women that mentioned they were parents, at some point during the questions about exercise motivation, spoke about their families and children in some way. Here, the examples are linked to parenthood as a motivator. In the following example the woman links her exercise motivation to mental health and to being a parent,

For me it's definitely to have a healthy mind. If I feel good in my head, I then feel like my life is good, I'm a better mum, I'm coping with stuff without too much stress… (P1)

That semantic expression shows the motivator to be the indirect connection to her child in relation to her own exercise. Moreover, this links to the previous sub-theme 'Mental health' and here that aspect is further linked to parenthood.

The effect of parenthood on exercise motivation was part of the following narrative, where the participant spoke about exercising with her young daughter,

… We did a bit of yoga together…she loved it, she absolutely loved it… (P6)

Here the direct contact with her child was one the woman's motivators for exercise. In semantic terms the woman describes the enjoyment the child felt, thus in latent meaning the positive effects of their exercise together on the child's mental WB. It would be reasonable to anticipate that in turn the woman's mental as well as physical WB benefited from their exercise activity and the child's enjoyment of it. There is a strong interrelation to the previous section that reported on mental health as a motivator to exercise for women at different stages of adulthood. The sub-theme

supports Hypothesis 2.1 in giving additional examples of the varied motivators a woman might experience, especially at a stage of life when parenthood is of significance. This shows how motivators change with time.

Summary of section 4.3.4.1

In summary, the 3 themes documented above showed prevalent and varied motivators to exercise in women in the UK as represented by the sample. Many statements further illustrated the change in motivators, supporting Hypothesis 2.1. in that the motivators to exercise vary throughout woman's life. Each theme documented the grouped motivators as 'Motivation - Body', 'Motivation - Mind' and 'Motivation - Connectedness' and noted the portion of the sample that referred to their motivation in related terms. The above further enriched the findings from quantitative phase 1, adding to the testing of Hypotheses 1.1 and 1.3, by giving examples of external motivators and intrinsic motivators. Additionally, the references documented where participants in semantic or latent terms referred to those motivators in negative and positive terms respectively and linked that narrative to their WB. Following paragraphs assess Hypothesis 2.2 and the barriers to exercise for women.

4.3.4.2 Themes for assessment of Hypothesis 2.2

Hypothesis 2.2: Barriers to MTE vary throughout woman's life. The themes regarding predominant barriers to exercise largely related to the body, the mind, and the environment. These were summarised in sub-themes 'Barrier - Body', 'Barrier -

Mindset' and 'Barrier - Connectedness'. Those themes were a priori codes-based themes, in the sense that they emerged directly from responses to the interview question about the participant's predominant barriers to exercise. Both strands of TA were used to construct the themes and support these with semantic and latent examples in references from the sample. Each theme is split into sub-themes, to effectively illustrate support for Hypothesis 2.2. In answering the question about their predominant barriers to exercise, 10 participants acknowledged some form of a barrier to exercise. One participant, as referenced below, had a different experience.

Theme: *Barrier - Body*

As in MTE, the physical body also featured as a barrier to exercise. Often in relation to a temporary setback due to injury, but also in terms of some part of the physical environment. This theme is divided into sub-themes: 'Health', 'Tiredness', and 'Access'. In total nine respondents referred to the state of the physical body or physical access to an appropriate environment as a barrier to exercise. Both strands of TA were adopted as a way of analysis and in generation of this theme. Both, latent and semantic references, are offered below to support the sub-themes.

Health

Several women documented either present or past experiences, where their physical ability due to impaired health presented a barrier to exercise. The older age

groups showed awareness of this as a part of older age due to an aging body. This participant spoke of an injury that became an unexpected barrier,

But I broke my leg a couple of years back…falling off my bicycle actually…and I think that was the first time in my life that I felt I couldn't do something…? (P5)

This is a useful reference because the participant's words give a semantic note of the state of the physical body as a barrier. She expanded her statement by acknowledging in latent terms the realisation she cannot do something and in so doing she noted that although it was the *"first time"* (P5) that she felt like this, it was a precursor for future such experiences. The following statement from another participant links to this, as she describes how at an older age her body is not able to exercise the way she used to,

They are health based, yes…so they are…yes…they are health based…they are purely physical in that my lower limbs will not do what I want them to do at the time that I want them to do it. (P10)

This illustrates the difference in physical ability as an age-related barrier. However, this type of barrier can be experienced at any age due to health-related circumstances as referenced in the next statement. This woman, representing the youngest age group, viewed her injury as a barrier, but her view also shows that her perception of it is of a temporary setback,

I sprained my ankle about 3 months ago and then I restrained it about a month ago and then I restrained it again, so now my only motivation would be, if I'm actually able to exercise…like literally that is all I'm waiting for… (P7)

This sub-theme summarised the barrier related to impaired health, as illustrated by references from women at different stages of life. It is not a surprising report that sub-optimal health presents a barrier to exercise. However, it is important to report and interesting to demonstrate the narrative of women having that experience. This sub-theme contributed to the Hypothesis 2.2 in illustrating a barrier to exercise, thus adding to the variety of barriers reported by the participants. Furthermore, the sub-theme documented the way this barrier becomes more pressing with age, hence illustrating changes in barriers throughout life.

The next sub-theme, while also relating to the physical body, focuses on the limitations imposed through access to facilities.

Access

This sub-theme relates to the physical access to facilities or equipment, as stated by some of the participants to be a hindrance to their MTE. It has been grouped under the theme 'Barrier - Body' because it relates to physical aspect of exercise, however it differs in that it does not directly relate to the physical body of the participant. The younger participants reported on this barrier in terms of access, "*… you can't drive or can't get to places…"* (P4), which is likely to be more relevant for very young women and was indeed not reported by the older age groups. Another

participant from the youngest age group spoke about her barriers in terms of the lack of props and equipment which she perceives as necessary for her to exercise,

…and for that I need like special music…I need to just start watching a class where other people exercise ((online video)) *and then I can continue by myself…these are the kind of things I need for…to motivate myself.* (P7)

The young woman is referenced above in the sub-theme 'Body Image' where she refers to her motivation *"…looking good naked"* (P7). This current reference is therefore interesting because it links statements of a woman who referred to external motivation, with a focus on aesthetics of the physical body, and additionally reported a barrier related to specific music to motivate herself to exercise. These statements reflect the woman's level of awareness of self at her stage of life. References throughout this chapter illustrate how SA can be a moderating variable for both a woman's MTE and her sense of WB.

The importance of appropriate venues for exercise for older age groups or those physically impaired was also raised, with one participant discussing barriers to her exercise as she aims to stay physically active,

…can then trip, or indeed get stuck on a piece of equipment and need a help off…hmm…and I think then that's such a demotivation, because trying to stay active… (P10)

Here the need of specialised equipment to exercise is referenced in context of physical ability related to age. Whilst physical impairment as a barrier to exercise can be a feature at any stage of life, in this project it was predominantly supported by the older participants or those with more life experience and therefore more experience of accidents that rendered the body temporarily less able.

The earlier quotes are examples of semantic references to physical access to facilities or equipment that participants considered a hindrance to their exercise attendance. In latent terms the last example shows the intensity of the participant's MTE and her awareness of the consequences of not being able to stay physically mobile if she does not exercise. Her age-related physical ability and worry about not being able to get on or off the exercise equipment was presented with urgency in the way she expressed herself. The previous two examples from the youngest age group were also related to access to exercise equipment, however these lacked the intensity in the latent expression, perhaps due to the attitude towards physical ability at younger age.

This sub-theme contributed examples of barriers in the testing of Hypothesis 2.2, by adding to the variety of barriers that women noted to experience, those that are related to supporting environment or equipment. This sub-theme, and the next, show a link in that the necessity for equipment to exercise can be considered a mindset barrier. In the analysis of the statement from participant (P7) the link to other sections of this chapter and other findings in this research over-all is also noted. This further supported the overlap of findings in the qualitative phase 1, showing SA as an emerging variable. The sub-themes 'Health' and 'Access' have outlined barriers to exercise related to the physical body, hence their inclusion under the overall theme.

The references in this theme illustrated how women experience various barriers to exercise and how those change with age and with heightened SA.

Following similar groupings as the reported motivators to exercise, this section presents the theme 'Barrier - mindset' as the next significant cluster of references regarding predominant barriers to exercise.

Theme: *Barrier - Mindset*

This theme illustrates the examples of barriers to exercise in relation to the mind and mindset. This theme is split into the following sub-themes: 'Social conditioning & External pressure', 'Prioritising' and 'Positive barriers'. In the generation of this theme TA, as well as the DA, were used. In total nine participants referred directly to the barrier of a specific mind-set. This theme contributed to RQ 2 and to the collective support for Hypothesis 2.2, by presenting examples of the variety of barriers and how those change throughout life. Semantic and latent references have been catalogued in this theme.

Social conditioning & External pressure

This sub-theme reflects in part on social and cultural conditioning, which in some way created a mind-set which in turn became a barrier for the participant. The examples below speak of social conditioning and pressure as hindrances to MTE.

This woman spoke about the differences between life in the UK and the culture during her upbringing in Eastern Europe,

…I don't know about now, but when I was growing up there…and I think for women here it wasn't like that maybe. For women who are my age. But I think women here put themselves under more pressure… (P1)

The participant, in semantic terms, speaks of the internal pressure which, in her opinion, women in the UK subject themselves to, resulting in exercise for aesthetic reasons. She compares this to the attitudes she experienced in Eastern Europe during her childhood by stating *"it wasn't like that"* (P1) when referring to her view of women's experiences at the time. She further acknowledges that this might have changed over time. This reference adds richness to this theme because it broadens the view of barriers to exercise. In the example the participant, in latent form, expresses her opinion on the internal pressure experienced by women, being a barrier to intrinsically motivated exercise. This notion of cultural conditioning is further supported in the above theme 'Body Image', where a participant from a White British ethnic background was noted to have been motivated to exercise at a younger age to be slim to be *"more accepted"* (P3). At this stage of the qualitative analysis this further illustrates the link between themes and the overlapping codes.

Cultural conditioning was further expanded on by a participant reflecting on how a negative body image can be grounded in the viewing of images on social media. This negative body image acted as a demotivator for her. When asked to elaborate and explain how, in her opinion, some women are affected by these social media images she responded,

Cultural background, what you are taught as a child, what are your parents telling you, your friends at school, what were you watching…if you were watching TV and what you watched on TV, all of that later allows you to either say 'no' to the properly external influences or not being able to say no. (P7)

Whilst that participant represented the youngest age group, she offered a detailed perception of the problem and latently showed SA of the social and cultural influences she might experience. The social media presentation of images which might be altered, thus presenting an unachievable standard, but which nonetheless present a potential ideal for women, is also illustrated in that reference. She further considered the context of the ability to view such images, whilst not being negatively affected.

The context of upbringing as an influence on how a woman might view exercise participation was expressed in the above example and is further demonstrated in the next. Related to the view of competition, but further related to the participant's disinterest in forcefully making herself visible within a large family, this participant explained why she was not interested in group exercise at a younger age,

…I think I had very ambivalent attitude towards competition when I was younger…and I think I found…I didn't' really like competition, I didn't think it was a particularly good thing. I come from quite a big family and so you had to sort of make yourself known…fight for space as it were…and I think it is quite common in big families…so I…I think I felt a bit…I didn't want to spend all my time going: 'me, me, me, me, here, here'. (P5)

The example was interesting, because as the representative of the second oldest age group, the participant offered a view of how a large family environment indirectly created her dislike of competition and subsequent disinterest in exercise at a younger age. She clarified her statement later by noting the change in her views with age.

This sub-theme noted references from participants who spoke about their barriers to exercise, as related to their mindset based on upbringing, cultural and social background. The sub-theme supported Hypothesis 2.2 by illustrating another variety of barriers to exercise, as noted by participants from different age groups, thus contributing to the answer to RQ 2.

The previous paragraphs in this section noted the impact of social conditioning. The following paragraphs focus on external pressure as perceived by the participants. The two have been combined into a sub-theme, due to the close links in meaning and perception of what social conditioning and external pressure mean to the participants as potential barriers to exercise.

Nine participants stated external pressure to have some negative effect on their view of themselves, in relation to their predominant barriers to exercise. Some spoke of external pressure as something tangible and real. Some spoke, in semantic or latent form, of it as something they have agency over in their response to it.

This young woman spoke passionately about the negative impact of social media,

…I'm on Instagram…and yea that is de-motivating… Oh it's literally impossible! You know few years ago my body type was the cool yea? …the filters…and like this image now is just…not human-like because there are many skinny people like me…and then

if people try to be skinny by just, I don't know, not eating or exercising or whatever…but 'this' image is literally impossible…to become that… It's damaging it…it's making them…it's impossible for them to be… (P7)

She acknowledged the impossibility to achieve some of the body shapes that are showed in images on social media. Whilst she evidently considered the body images portrayed on social media, the contrived picture presented a barrier rather than a motivation. It negatively affected her view of self and her MTE.

According to the following statement, the woman felt pressured by what she perceived as an expectation of her personal trainer, *"…their achievement being training someone to be able to push themselves…"* (P2). That presented a barrier for her, in that she did not feel motivated to continue to exercise under the instruction of that trainer. Furthermore, despite expressing concern regarding the professional knowledge of the trainer, *"…whilst I think that trainers themselves are quite limited…"* (P2) she still allowed the perceived expectation to affect her. It is equally important to note within this sub-theme that some participants expressed SA that this pressure need not affect their actions or responses. They might acknowledge its existence but be somewhat less affected by simply not perceiving it as important. One woman said,

…and I never really felt that I had to be a circus monkey for people…I don't think that I need to do what society thinks I should… (P1)

She latently expressed the level of self-acceptance, thus the lack of need to be subject to external pressure, and a level of SA which allowed her to process her views and act upon them.

This sub-theme, overall, was a very useful and interesting addition to the findings. The sub-theme emerged based on a priori codes generated from responses about predominant barriers to exercise. Both, semantic and latent references, have been noted in this section. The sub-theme included references related to the cultural background of the participant and its effect on the perception of exercise participation, and the external pressure to exercise women might experience. There is a link to previous sub-themes, specifically motivators related to body image, which as demonstrated above in section 4.3.4.1, can be based on external pressures.

The following sub-theme follows a different focus in the grouping of references referring to lack of time as a barrier.

Prioritising

Prioritising as a barrier was set under the theme 'Barriers - mindset' because it relates to how we view our time, our responsibilities, and our priorities. Whilst time might be scarce, the scarcity is in part a perception or a mindset, and different distribution of time under a different mindset might not result in that conclusion.

Although each woman responded in a unique way, the barrier of time was noted by eight of them, in present or past life experiences. Time, or the lack of it, presents a barrier to many activities in life, especially during productive stages of life when work and parenthood combined require our time. Some participants responded in a

semantic, focused manner when asked what their predominant barriers are to exercise, "*…probably time, more than anything…"* (P6)

And an example from another woman with the same view, but from different stage of her life, "…*I would say that was time. I worked long hours."* (P10) showed the uncomplicated view that she did not have the need to elaborate on any further.

Some related lack of time to the relationship between parenthood and time restrictions. This participant stated time as a barrier, but only with the onset of motherhood,

I think my main barriers are time…as a working mother I struggle to balance my work/life balance and therefore I find it very difficult to factor in time to exercise.
I also think that as priorities change…with becoming a mother… (P8)

The woman, in latent terms, spoke of the lack of time in a negative tone and as if defending her current priorities. It was noted that whilst being interviewed by another female who might relate to her view of prioritising, this participant still wanted to offer an explanation. Unknown to her, all other participants with young children stated time as a barrier and physical activity as a non-priority at that point in life. The older participants whose children were grown, also noted how time was a barrier during their earlier stages of motherhood.

In another aspect of time as a barrier, others reflected on the need to create time, whilst being limited in a similar way,

…kind of putting yourself first… do something for you…so yea, when I was younger I

did it all the time! I guess…whereas now I have to make time for it. Thinking about it as I'm saying it out loud… (P6)

The following example illustrates prioritising of other activities as a barrier.

…I will, I will sort of think…uhm…I will just finish a chapter of this book…and then… (P5)

The participant, representing the second oldest age group, spoke in latent terms about her prioritising of reading to exercise, with kindness to self and a sense of understanding. Her experience was positive, despite her acknowledgement that it was a barrier to exercise.

In the interviews some participants gave tiredness as a reason for not feeling motivated to exercise. This barrier to exercise was reported across all age groups. This participant recognised the difference in how tiredness affected her at different stages of life,

...um, tiredness, fatigue...if I wake up...um...I have a long job, I work long hours...and tiredness in my 50s is a lot more than it was in my 20s... (P3)

This is a useful reference, because the participant takes us through different stages of her life and the change of mindset due to the change in the barriers she experienced. The younger participants also referred to tiredness as a barrier even at very young age, "*…and you are like extremely tired…just physically and mentally tired…"* (P4).

This showed an example of how tiredness presents a barrier to exercise at young age. Whilst in semantic terms the participants noted tiredness as a barrier, in latent terms the way they assessed priorities was the defining point. If exercise was a priority over other activities, then it would be those activities which the participant would feel too tired to attend to or simply not have time to attend to.

Another participant related her lack of energy to daily life routine,

Having the energy at the end of the day…when everything else is done, you just want to sit down on the sofa rather than put your shoes on and go outside. (P9)

The participant represented the second youngest age group, hence supporting the notion that this barrier relates to personal circumstances in life at present, rather than to age. The woman's perception of how exercise ought to fit into her priorities was in latent terms expressed here. It was not a priority at this point in her life and *"…everything else…"* (P9) was attended to first.

In summary, this sub-theme showed examples of references to prioritising as a barrier to exercise, indiscriminate of age. The references were varied in that they reported on tiredness, time restraints and illustrated the acknowledgement that other activities can be consciously prioritised at different stages. It added to the previous sub-theme by referencing another physical barrier, thus contributing to Hypothesis 2.2.

The barriers that women said they experienced were not all negative, as the following sub-theme reports.

Positive barriers

Some barriers were freely admitted by some of the participants as present, but not necessarily negative. The next example is from a woman who showed relief when speaking of her barriers to exercise at the current stage in life,

*I think you get to my age, and you say just f*** it. I don't want to do it, I don't need to do it. What do I have to prove? I am going to sit in a gong bath and relax. Because I need that downtime. Where I would never have done that that 10, 20 years ago…* (P3)

This is an example of a change in perception of barriers with age, as reported by the woman. However, in latent terms the participant exhibited change with life experience and therefore growth of self-knowledge and SA. This further adds to the findings above, which note SA as a potential moderating variable in the context of motivators and barriers to exercise. It further enriches the list of barriers that women expressed they experience in relation to exercise participation, and how those change.

The following statement illustrates how a temporary lack of MTE can be a presentation of a positive mindset. This participant stated that she did not experienced barriers to exercise,

I don't really have any barriers…what do you mean? (P1)

The participant further elaborated when the question was clarified, *Well, if I want to go, I go. And if I don't want to go, I don't go.* (P1). It could be argued that this reference illustrates a type of positive barrier in the way the woman expressed no need to

exercise for any other reason than if she truly wanted to. Equally, it could be considered simply showing that for this person the self-determination based on SA precludes or negates many barriers to exercise. This sub-theme was complementary to the previous findings and to the references noting a variety of barriers and changes in those throughout life, as a support of Hypothesis 2.2. The sub-theme and its references showed that the perception of a barrier ought to not be narrow or simple.

The references above add to the list of barriers that women stated to be part of their experience, thus supporting Hypothesis 2.2, and contributing to RQ 2 by adding to the list of barriers to exercise and how those vary throughout woman's life.

The theme 'Barrier - Mindset' was represented by sub-themes which collected references related to different aspects of barriers to exercise, in relation to the perception or the state of mind of the participant. At this stage of the findings chapter the results emerge as interlinked and in the case of this theme, a woman's mind-set could be linked to previously stated motivators and barriers such as 'body image' or 'access'. It is noted that the significance of these and further findings is reflected in the qualitative analysis as the researcher's account.

Theme: *Barrier - Connectedness*

Relationships with others, and women's perception of who they ought to be within those relationships, presented a barrier to exercise as reported under this theme. There is a link to the previously documented motivators in section 4.3.4.1, where references illustrated how human relationships can present MTE. This theme emerged from a priori codes generated from answers about predominant barriers to

exercise. Four participants spoke in semantic and latent terms on the topic of this theme. TA was used in analysis and emergence of this theme. The supporting references are summarised in the subthemes: 'Guilt & Parenthood', and 'Financial barrier'.

Parental guilt

Section 4.3.4.1 above noted some of the motivators to exercise in connection with relationships with others. Those were largely positive examples that referenced the enjoyment from exercising with others. This section summarises women's experiences of limitations arising from motherhood and close relationships. Not all women spoke about this aspect, and from the five who mentioned they were mothers, only 4 offered semantic references to it. For example, one woman said how family responsibilities and motherhood-related contact with others presented a barrier. She acknowledged in the second sentence that the combination of the two creates a partial solution,

I think, generally speaking, work related and but majority of it is actually family related reasons like childcare, and social seeing people in relations to it. Sometimes I try to combine that with seeing a friend and doing exercise together. (P11)

The participant spoke enthusiastically about her enjoyment of exercise in other parts of the interview, and here she expressed the challenges of motherhood and in latent

terms the tiredness that accompanies it. This was a notable reference because the participant offered honest answers without apologies or explanations.

One woman spoke specifically about motherhood-related guilt, *"… as a woman, as a mother you feel you should be in the family home"* (P3), which in latent terms referred to the reasons why her own exercise participation were not prioritised. It referred specifically to how her own perception and related emotion presented a barrier. She then further summarised, *"…so, for me the biggest de-motivation would be tiredness, but also guilt - not spending time with my daughter."* (P3)

Furthermore, the following example illustrates the change over time in relation to this barrier. The woman described the difference between motherhood and previous stages in life,

…pre-having children I used to go first thing in the morning or after work I used to pop into the gym on the way home. (P8)

Once more the reference shows the barrier to exercise that a woman might experience in the early stages of parenthood.

One participant stated a financial barrier as an aspect in her decision making regarding exercise. The reason the reference was included under the theme 'Barrier - Connectedness' is the latent meaning behind the following reference. The example is in essence an addition to the 'Parental guilt' sub-theme in that the participant indicated the financial barrier to be related to family responsibilities,

However, I also think that as priorities change…with becoming a mother…I also think that my…not necessarily a financial barrier…I do think about my finances differently…where previously I would go to very expansive classes and I wouldn't think anything of paying £20 a class at cycle…now I would think 'ooh, that is quite a bit of money to spend on an exercise class'…so, I think there is actually also a financial barrier. And an expensive gym membership, monthly, feels like a luxury. (P8)

The reference illustrates the change in priorities that comes with motherhood, in the context of this project and the interview questions, this is further referred to as a barrier to exercise.

This sub-theme provided important material in the exploration for support of Hypothesis 2.2 and in answering RQ 2. It offered references which illustrated more barriers to exercise, and how those change for women considering their role as parents, and the effects that can have on the perception of physical activity.

The theme 'Barrier - Connectedness' and its related sub-themes grouped references regarding women's perceptions of relationships with others, and their own role in those relationships as related to their barriers to exercise. This was mostly referenced by women who stated they were mothers, documenting how their responsibilities and the prioritising of those responsibilities affected the time they could devote to self. The link in the sub-themes here is the mindset of the woman in the way she prioritises her activities. This theme once again shows links to previous sections, and this stage of the findings chapter documents how themes interlink, for example in the parenthood aspect. Furthermore, in section 4.3.4.1 paragraphs outlining

togetherness with others as a motivator to exercise oppose this, where the human relationship and the perception of one's role in it, presents a barrier.

Summary of section 4.3.4.2

In summary, the predominant barriers to exercise for women in the UK were documented in this section as a wide range and grouped under the themes 'Barrier - Body', 'Barrier - Mindset' and 'Barrier - Connectedness'. The above examples also illustrated how barriers change over time. This is shown in some examples related to age, motherhood and to the perception of self and SA, for example the sub-theme 'Parental guilt'. The above supports Hypothesis 2.2, and in part provides an answer to RQ 2.

It is important to note that whilst there were other barriers to exercise reported by the sample, the above is a summary of the most frequent statements and those that were relevant to answering the RQs and supporting or refuting hypotheses. Summaries of sub-themes noted how intertwined concepts can be, as reflected in links between themes. The descriptive strand of the TA was used to identify semantic references. Conceptual and interpretative TA was used where latent terms were referred to.

4.3.4.3 Themes for assessment of Hypothesis 4.2

Hypothesis 4.2: A woman's attitude towards her WB changes with age. In the quantitative phase 1 the questionnaire yielded data on women's levels of WB.

Specifically, the findings for Hypothesis 4.1 showed, with significant results, that age plays a role in reported levels of WB. These results formed the basis for this data collection in the qualitative phase 2 and informed the analysis of the findings. This section is divided into the themes: 'Well-being & younger women', and 'Well-being & older women'. The paragraphs below present support for Hypothesis 4.2, as documented by examples of references from the answers given in semi-structured interviews to questions regarding women's attitudes to WB at different stages of life. Both themes report directly on WB and are based on a priori codes. Both themes are further divided into the sub-themes: 'Lack of knowledge' and 'Stage of innocence' for the former; 'Mind and conscientiousness', and 'Calm' for the latter. Both, semantic and latent, references are analysed in this section.

Theme: *Well-being & young women*

This theme demonstrates responses from younger women, or from older women reporting on their attitude to WB at a younger age. All 11 participants reflected on their views on WB attitudes at a young age in some way. The specific age is not reported here, as findings showed that growth of SA informed the change in attitude towards SWB, not the specific stage in chronological aging. This theme includes one sub-theme, due to the references being extremely close in meaning, and did not qualify for distinction. Moreover, the theme is supported by the higher number of relevant references to demonstrate it significance. TA was applied, and latent and semantic references were reported.

Lack of knowledge & self-awareness

This theme was built on the answers that participants offered when asked about what WB meant to them and how they approached it. The gathered data were largely grouped around the lack of opinion on WB, further elaborated on by stating that at a younger age the knowledge of self is somewhat lacking, hence affecting the attitude to SWB. Some women said that at a younger age they did not know what WB meant or simply did not have an opinion. This was not reported by more life-experienced participants. One woman said simply, *"…when I was young, I probably didn't know what it meant"* (P1), thus supporting this theme in the semantic meaning of her statement. Whilst another participant reported very similarly,

So, yes, I think I didn't even understand what well-being meant. Truly meant. And definitely not what it meant to me. (P8)

The two references are significant, because they provide a potential explanation as to why a younger age correlates with lower levels of WB. To further remind the reader: External motivation and Introjected motivation correlated with lower levels of WB in the testing of Hypothesis 1.1 in the quantitative phase 1. In addition, previous sections reported on the examples of externally motivated attitudes towards exercise in younger participants. Those previous sections also began to report on the notion of SA in older participants and its effects on exercise and WB attitudes. At this stage, and in the combining of both phases of analysis, the findings appear to interlink. In response to the stated references in this sub-theme, it seems that younger or less life-

experienced and therefore less self-aware participants had no real understanding of their SWB.

This participant representing the youngest age group 18-24, pondered aloud when she was asked what WB meant to her,

…umm…where would it come from…? …what could woman do to improve her well-being? Somehow understand how this everything impacts her, and then that would allow her to… (P7)

She found it difficult to grasp the question and did not give a clear answer even when prompted. It was not due to the way the question was phrased, but the conversation showed that this young person found it challenging to answer what WB meant to them. This reference further supports the previous paragraphs, illustrating the lack of meaning of the concept at a younger or less informed age in women.

In addition, the following paragraphs report on elaborated statements from women reporting on their younger age attitudes. Some women recognised that their lack of opinion on WB was due to their lack of self-knowledge at a younger age, *"…I didn't know who I was at 20!"* (P3) and in latent terms expressed their dissatisfaction with the state of self-knowledge and the consequences at a young age. Furthermore, she said she did not know herself and therefore she could not know what her WB meant to her. This further expands the previous sub-theme, where the aspect of SA was noted. This participant links that aspect to WB attitude in her own account of her younger self.

Another participant referred to their younger years and the topic of WB at that stage of her life as a non-entity,

I think when I was younger, I didn't even have time to learn myself about this question… (P2)

This statement was selected for this sub-theme because it links to the sub-theme 'Conditioning' in the sections above. The participant is, in latent terms, expressing the effects of her upbringing under challenging conditions in her country of birth. She is stating that those conditions were such that thinking about her own WB was not part of her reality then.

Reminiscing about her younger age and the inability to think about WB at that stage of youth was part of this narrative,

…when I was younger that didn't…that dawn on me…that sense that you have…of just being invincible… (P5)

This is an interesting statement, because it explores the outlook of their youth from the perspective of a more experienced stage of life. The participant is aware of the effects age has on her ability to be well and healthy and relates that to her younger years. Back then, she did not know what WB meant to her, because she felt invincible and somewhat expected that state to continue, thus WB or physical activity adoption were not important.

In summary, this sub-theme reported how a lack of knowledge of what WB

meant to them personally, underpinned the experiences of women at a younger age. Some of the reasoning behind it were linked to youth and some to the lack of awareness of self.

In summary of the theme 'Well-being - younger women' the responses to the interview question about WB at a younger age did not range dramatically within the sample overall. The references above are a good representation of the sample, by reporting statements from different age groups and illustrating the similarity in women's experiences. The support for Hypothesis 4.2 is in the report of attitudes towards WB at younger age, as reported by younger participants or older women reflecting on their youth. The following theme provides further findings to support this hypothesis and contrasting data regarding older age experiences to the reports above.

Theme: *Well-being - older women*

The participants in the three older age groups were asked what WB meant to them at present and to reflect on any changes in attitude since they were young or younger. Additionally, they were encouraged to think about what they consider to be the reason behind a change of the attitude they had at younger age. The sub-themes 'Mind and conscientiousness' and 'Calm' reflect the grouping of answers. In contrast to the previous theme, older participants had a very clear idea of what WB was, and specifically what it meant to them personally. All nine respondents from the mentioned age groups responded to the question about WB and their attitude to it in a more experienced stage of life.

Mind and conscientiousness

This sub-theme groups those answers which reflected participants' focus on WB as related to their mind and deep sense of morality. Some of the references are from the same participants that in previous theme reflected on their attitudes at a younger age. The comparison itself contributes to the project at his stage, by illustrating changes in attitude to WB.

When asked what WB meant for her, this woman reflected on her view,

For me it's definitely to have a healthy mind. If I feel good in my head, I then feel like my life is good, I'm a better mum, I'm coping with stuff without too much stress… (P1)

Here the participant's reflections in semantic terms shows that WB for her is represented by a healthy mind more so than a healthy body. Additionally, she also links WB to motherhood, in a way that previous sections linked exercise motivation to motherhood. This illustrates how, as the analysis progressed, themes appeared to interlink. Furthermore, the participant was noted in the previous theme to state her lack of awareness and understanding of WB in her youth. The two statements illustrate how for this woman the attitude towards WB changed with time.

The following example is from a representative of the oldest age group 65-74 and was kept in a longer format to illustrate the conversation segment adequately,

But I think as you grow older, not only you become kinder to yourself, you probably become kinder to other people…and so I think, my sense wellbeing is about physical

and mental stuff but it also about umm, feeling that you are ok. You know that what you are doing is within an appropriate moral compass. given the parameters that I have to work within, I feel that for most part …you know, I mess it up, we all mess it up…that's part of being human, but my attempts are honourable… trying to make things better…for myself, but also for other the people that are around me, and the people that I share my time and space with I suppose…and that seems to me to be quite important… Because I think our sense of well-being is intimately related to the well-being of others. (P5)

The change in attitude to their SWB is documented in the semantic and latent statements from women and referenced here, to illustrate support for the hypotheses and to answer RQs, but also to create a picture of the women's wider narrative. This reference was selected for this theme, because it reports in semantic terms the woman's view on her WB and because it is so rich in the story it tells. The participant showed profound contemplation of the concept, linking humanity overall to the idea of WB. This demonstrates the depth of the way SWB can be viewed by women and the scope for real substance in the data findings in this project. The reference in basic terms shows the participant's evolved attitude to WB as something considerably more complex than just a healthy body. Her recognition that *'attempts are honourable'* (P5), in the context of behaviour under *'appropriate moral compass'* (P5) as contributors to SWB, is extraordinary and shows her awareness of self as related to the wider context of the world around her. She further adds her belief that the WB of one being is connected to the WB of others. This, in latent terms, did not refer just to those closest to her, but is a reflection on humanity.

This sub-theme, in combination with the previous sub-theme, support Hypothesis 4.2 in that the attitudes to WB change throughout woman's adult life. However, the hypothesis further stipulates age as a variable. The findings do not support that. Rather they illustrate how SW, which grows with age, is the moderating variable in the attitude change. The findings from quantitative phase 1 were further supported by the provision of references which illustrated what matters to women more as they get older.

Calm

The word 'calm' was presented 10 times by five participants during the reflections on WB and it is therefore represented by a separate sub-theme. Women reported that calm or the sense of calmness was for them associated with WB.

For example, one woman linked the aspect of calmness to previous sections of the interview where she stated body image as being of importance to her at a younger age and further on the impact of self-acceptance,

I really think that well-being now means calm, calm instead of panic, it doesn't any more necessarily means being the prettiest, being the strongest, being an achiever, it means being ok with myself and accepting it all. (P3)

In latent terms the woman expressed this change in attitude as positive and carrying a positive effect on her view of self.

Another participant reflected on her view of WB in terms of *"…some sense of calm and security."* (P2). In semantic terms the woman associates WB with calm and security. However, earlier in the chapter the participant was noted to express her lack of understanding of her SWB at younger age, due to the challenging conditions of her upbringing. In the application of DA, and the aim to ascertain the influence of social context in construction of meaning, the conditioning, and the background of the participant as influences on the opinion she held in older age have been considered. Once again, the leading word here is 'calm', however the meaning appears to have a different quality to it here.

The woman seems to be valuing calm in relation to security, where the previous reference showed the value of calmness in relation to self-acceptance. This shows how simple semantic terms give only a partial account of the woman's narrative.

Some participants directly linked the need for calm to older age and noted how, when they were younger, calm was not something that was important to them. One woman said, *"…I didn't need to have the calmness in my head that I need now…"* (P1). Overall, the sub-theme illustrates the deeper meanings of WB to women who have more life experience, thus reporting on the way attitude towards WB changes with age, in support of Hypothesis 4.2.

The theme 'Well-being - older women' was generated from answers to interview question, regarding the participant's view of their WB and any changes to that view over time. The women that reported deeper understanding of self and their SWB, and associated the sense of calm with WB provided data which supported the Hypothesis 4.2 and added to the evaluation of RQ 4. The combined data findings from both themes were invaluable in their provision of knowledge on women's perception of their

WB over time. Furthermore, the themes interlinked in the account of references on SWB from participants of different age groups, and in some cases showed further links to previous sections.

Summary of section 4.3.4.3

To summarise both themes in relation to the support of Hypothesis 4.2, the findings show that whilst the hypothesis is supported here in that attitude towards WB changes with age, it ought to be noted that specific age distinctions have not been determined, and age itself was not deemed to be the only moderating variable. The woman's sense of SA in older age was illustrated as an additional moderating variable, and whilst unexpected, the results provided a richer context for the understanding of WB as perceived by women. The data were collected from participants of different ages and specifically falling in four distinct age groups. However, the data collection grouped responses from participants often referring to another time in their life and experiences they remembered, rather than a present-time opinion regarding a present-time event. Furthermore, some women reported on the deeper meaning of WB and a profound understanding of it in relation to self, although they identified with a younger age group. It is therefore not age, but the understanding of self, referred to as SA, which was reported by women as the moderating variable. Naturally, life experiences are gained as we age, however a definitive age division could not be identified here. The TA was invaluable in the analysis of this section. The analysis allowed for the recognition of semantic and latent meanings, as well as potential effects of social and cultural conditioning on views of women. The findings

from quantitative phase 1 were further elaborated on in references showing why women might be reporting higher levels of WB at an older age, thus adding to the assessment or RQ 4.

4.3.5 In vivo themes leading to new propositions

The qualitative data were subject to a combination of deductive and inductive analysis. As a result of the latter, some themes emerged from in vivo codes and gave ground to new propositions, rather than a provision of data in support of RQs or the research hypotheses. The themes below, based on in vivo codes, relate to MTE and WB alike and arose spontaneously during the conversations on those topics. The following three in vivo themes were developed: 'Self-awareness', 'Feminism' and 'COVID 19'. TA was used to identify the themes.

Theme: *Self-awareness*

In the semi-structured interviews, all 11 participants, at some point during the conversation, made a reference to their SA, in latent or semantic terms. This reference occurred in response to many of the interview questions. The aspect of SA is reported in a separate theme, to illustrate its significance and to consolidate the links to SA in all previous sections and almost all themes based on a priori codes. Individually, each interview, either in latent or in semantic way, illustrated the power of the impact of SA on MTE and WB attitudes and indeed the impact of the lack of it. The participants representing the youngest age group did not specifically acknowledged SA as

something linked to their perceptions of self. However, in latent terms this lack of recognition serves as a support of SA as a moderating variable, rather than age, in this project. For example, in section 4.3.4.1, when reporting on body image as a motivator, women with more life experience noted this type of motivation to be negative and largely of importance in younger years when they lacked SA. This shows awareness of self in higher levels in more life-experienced women than in younger, less experienced women. Parallel to this observation lies the referenced finding of body image as externally generated motivation, further linked to the quantitative phase 1 analysis which showed external motivation correlated with lower levels of WB. Collectively, the interview data showed how significant this aspect is for women. To support this sub-theme sufficiently, several references have been selected to represent the sample. Some referred to SA in latent terms,

…everything is a lesson. So, every time I hear women being…criticising themselves or other women…I learn stuff from that too…not just from things that happen to me. (P1)

And when prompted to give any final thoughts at the end of her interview, she further elaborated,

…I just wanted to say, that maybe we need to work on being more self-aware and accepting of ourselves…so we can learn and grow, you know…women that is… (P1)

That SA can be learned, and can aid a woman's ability to navigate life, was a conclusion that the participant made through thinking and conversing on the topic of

MTE and WB. This reference is important because the participant concluded this herself, rather than this emerging via the researcher's interpretation.

This is further supported by the following example which shows the effects of increased SA. The woman spoke about her WB in relation to agency and structure,

I'm taking a bit of control over what I can change myself… more than I can change someone else. So, yea, I think both physical…and mental… (P11)

She noted the opinion of the younger self and how the responsibility for her lack of happiness and WB lied with others then. With more life experience her opinion changed, and in the reference, she examines her agency over those matters rather than the blaming of others. These examples represent agency over aspects of life related to MTE and WB for the quoted participants.

One participant reflected on her younger years and the way she regarded herself in relation to MTE, *"…you want to be somebody else"* (P3) but explained how her views changed and how she felt at her current stage of life, *"…now I don't want to be anybody else…"* (P3). In latent terms she leads her narrative through the process of self-perception in younger years, how that changed, and most importantly what effect that change had on her perception of self. This view was expressed in similar terms by another woman, *"…but trying to be like everybody else never works…"* (P9). Both women made their conclusions from the perspective of life experience and a place of heightened SA. These, and other quotes referring to SA in semantic and latent terms, provided invaluable data for subsequent findings.

The following example showed a participant considering aloud the impact SA

could have on our perception of social media images,

…so, we have awareness…and like what she actually wants for her…so if she was already aware that this image is fake and doesn't actually make sense…then she might…because we still want to grow right? (P7)

This reference comes from a representative of the youngest age group. She does not acknowledge anywhere in the interview the importance of her own SA. Here however, she recognised the value of SA in relation to the ability to see those images for what they are and therefore limit the negative effects on the perception of one's own body. When asked to elaborate on the notion of some women being affected by the projection of social media images, she switched to depicting the problem in the third person rather than describing a first-person experience. Whilst it was not clear why, the notable segment here is the reference to awareness and how that is noted even by a representative of the youngest age group as essential, in order to navigate the world of social media in the topic context.

The number of references to SA, whether in relation to exercise motivation or WB, was substantial. The references were either semantic or latent and often related to another aspect, such as motherhood, self-kindness, self-acceptance, personal responsibility, and others. The notion of motherhood and its effects was noted by this participant,

…own who you are and accept who you are, don't try to be somebody else. And that's what I kind of teach my daughter because I think we try so hard to be what somebody else is... and it's taking me nearly to my 50s to accept who I am. (P3)

The comment was made as a response to a question about MTE at a younger age. The quote illustrates the notion of self-acceptance, regarded by the woman as a potential coping mechanism counteracting external pressure. Inevitably however, the discovery was made from the perspective of life experience and notable SA. The reference further links this section to the previous sections, 4.3.4.1 and 4.3.4.2, which noted parenthood as exercise motivator and barrier respectively. Once more, this material shows the intertwined aspects present in the research topic. The participant here noted her own self-aware approach to exercise, but also the importance of teaching SA to the next generation of women, in part to lessen the negative effects of external pressure.

As noted in previous chapter, qualitative analysis is subject to interpretative aspects, unlike a quantitative analysis. The conception of SA as an influence on women's view of their WB is illustrated by the examples above. Furthermore, previous sections 4.3.4.1 and 4.3.4.2 note the role of SA in relation to exercise motivation. By this point of the results chapter there has been substantial evidence that SA is a potential moderating variable for women, when considering both concepts. The participants recognised that as a woman's SA grows, so does her agency over exercise motivation and her WB. This sub-theme specifically supports the proposition of SA as a moderating variable. The link of SA and the findings in this sub-theme to the RQs and hypotheses is in the effect that a level of Sa had on the participants and

their views related to WB. The next sub-theme considers feminism in relation to an attitude towards SWB.

Theme: *Feminism*

This theme emerged unexpectedly through the TA. It was not anticipated that the interview questions would provoke responses comparing sexes or the social positioning of men and women in relation to the RQs. However, six women spoke of the differences between their own approach to exercise and that of their male partner, as in the next example,

… *From personal experience I think, I feel, that sometimes men can be quite detached...for them to exercise, its... they wouldn't feel guilty to go and do something…* (P3)

In semantic terms the participant expressed her opinion on how men prioritise their exercise without consideration for others or the wider context, and she further elaborated *"I think women carry a lot more guilt than men."* (P3).

The sub-theme 'Prioritising and Time' in section 4.3.4.2 has debated the way women set priorities. Here the reference illustrates one of the reasons behind prioritising of the needs others over self and own exercise participation. This reference in latent terms was presented in a somewhat negative tone, however the woman also acknowledged that this is her personal perception of the matter. Her perception is a choice, and she otherwise referred in context of the interview and in latent terms to womanhood and

motherhood in positive terms. She noted how she appreciated being a woman and how motherhood allowed for that experience to be even more rewarding, despite presenting a sense of guilt at times, as noted in the previous section, 4.3.4.2. The inequality in approach to exercise under external pressure visibly troubled her however, *"I think women have a lot more pressure to stay slim, and thin…"* (P3).

Other participants reflected on the different view of women, in relation to body image as a part of social structure, *"…but it is the society…it is us that bring the girls up thinking that they have to be pretty, and slim and quiet…"* (P1). This reference links to previous section 4.3.4.2 and the sub-theme 'Social conditioning & External pressure', however here it directly reports on this woman's opinion on the disparity between sexes and the pressure on women from young age. Another woman supported that view in saying, *"…I think it is unfair on women. I think women get a hard time."* (P3). These statements were made in reflection on WB and exercise motivation questions, and in a frequency which indicates the import of this matter to the participants.

The difference between men and women in the realm of physical activity focus and SWB was not always reported in negative tone. This woman mentioned WB as a female concept in the past and how, in her view, that has changed, *"…it is becoming more acceptable for men to talk about well-being…"* (P8). In latent terms this participant noted this as a positive development, which could affect how males approach their own mental WB. She viewed feminism as a way for her male counterpart to gain a platform where he could allow himself to be human instead of projecting an infallible façade, based on perceived external pressure, *"… I don't think*

my partner would do that. I don't think he is there, but I think there are many men that are." (P8).

The aspect of perceived invisibility in society was brought up by this participant, who represented the age group 65-74. She spoke at length about her view of women and exercise and external pressures in relation to her younger and older self,

…I think culturally, it is really for women to be invisible. I mean, within our society. And I think, older women particularly. Yea, just not be seen, not really be noticed. And I think I, uhm…I think when I was younger, that would have made me really, really angry. And now I have got to the stage when I can't quite be bothered…to be honest. It's like, I'm still here, and do still have a voice. (P5)

This reference adds to the material illustrating how women in the semi-structured interviews expressed their views on exercise motivation and WB, and here specifically from the angle of inequality of women. Furthermore, how differences between sexes, as perceived by the quoted participant, affect the way women process their decision making was illustrated in the reference. The woman expressed a strong experience, which was respected by allowing for a longer, rather than in-text quote.

The comparisons between the world of men and women were made as reflections on women's own motivations and attitudes. Feminism in the context of the research topic was not set as the centre focus, however based on the in vivo codes the theme was developed to note it. The women spoke about the differences as a part of their life and as something they are working around rather than against. Based on the latent meaning presented by participants when speaking about differences

between the sexes, there was a distinct lack of negativity, thus the conceptual and interpretative style of TA was useful strategy in identifying this theme. The participants representing the youngest age group, 18-24, did not contribute feminist views as affective of their world.

Theme: *COVID 19*

Due to the timing of the data collection, the global pandemic of COVID 19 had some underlying effects on the participants' narrative. This theme summarises the five references to COVID 19-related aspects made by three participants, with positive and negative effects noted in their quotes. Although there were no direct questions prompting this subject, the women offered some views on it. This theme was therefore constructed on in vivo codes. TA was used in the analysis. This theme is additional in that it does not directly contribute to RQs or hypotheses. However, as stated above, the timing of the research project was such that this emergent theme played an important part in women's experiences at the time. Surprisingly some of these described positive rather than negative experiences. One woman said,

…and then we did all these things together. We got our bikes out, I loved all of that, when we were in lockdown, I loved all of that… (P6)

This reference is from a woman, who in semantic terms reflected on her enjoyment of spending time with her daughter and of exercising together. The opportunities for exercise were limited by COVID 19 restrictions during the time of lockdowns.

However, this reference shows that the family time together was invaluable for this mother and presented continued MTE, as well as a positive experience despite the restrictions. There is a link to the previous section, 4.3.4.1, and the sub-theme 'Parenthood' and this illustrates once again the intertwined nature of the developed themes.

Some participants had different experiences, as illustrated by the following statement,

I think like, I mean during covid when I didn't have to train, I didn't do anything, so wasn't motivated enough to exercise… (P4)

The young woman explained her lack of MTE during the pandemic. And she further elaborated on her statement,

…and I knew I would be going back to it, so it was almost like a 'well I better make the most of' like not doing anything… (P4)

This is a reference from a person who self-admittedly is a regular exerciser with a focused training schedule, and connection to a sports team. Hence, she felt that the restrictions in time spend outdoors was a welcome break.

The COVID 19 safety restrictions in sports facilities presented a barrier for this woman, thus the following quote represents a shift into the negative effects of COVID 19, as reported by the sample,

…the reason that I don't swim anymore is purely covid, …very small changing area and I didn't feel comfortable with that…uhm… (P5)

This reference presented an example of where the person's exercise habits had changed due to the pandemic. No other participants contributed such an experience.

It is out of the respect for the global effects of the pandemic that this research findings section offers some examples of the interview references on the subject. Furthermore, the statements above show real-life experiences related to the research topic from an angle that was not anticipated at the stage of the research project proposal. There was no new proposition made based on this theme.

Summary of section 4.3.5

The findings based on in vivo codes and the associated themes, illustrated aspects of the participants' views on exercise motivation and WB, considering the unexpected. The sub-theme of 'Self-awareness' was recognised as significant, featuring in all 11 interviews. It was either latently regarded as a source of impact on attitudes in relation to the interview questions, or semantically showed the importance and meaning of the level of SA in a woman's reality. This contributed to the research RQs and hypotheses in the added rich narrative anticipated from the qualitative phase 2. The sub-theme 'Feminism' added indirectly to the findings, and the RQs and hypotheses, but was regarded as important due to the reported significance of the difference between sexes in women's lives. Finally, COVID 19 and its effects were an unexpected addition to the research data findings, and the sub-theme reported

positive and negative effects experienced by participants in relation to the research topic. The Discussion chapter will consider the above findings in detail, as it is not the intention to interpret the data in this section. However, the in vivo codes driven by the data and grouped under the last three themes have provided grounds for new propositions and expanded the topic of this research.

4.4 Chapter summary

The part of the analysis chapter documenting the qualitative phase 2 showed the qualitative data findings based on data from 11 semi-structured interviews. The findings were a result of the use of thematic analysis. The TA followed the six-step strategy as recommended by Braun and Clarke (2006). Furthermore, the sample was in majority from White British ethnic background, whilst six ethnic backgrounds were represented overall in the qualitative phase 2.

The themes based on a priori codes showed results related to RQs and the associated Hypotheses. The findings contributed to RQ 2, and Hypotheses 2.1 and 2.2, by illustrating the variety of motivators and barriers to exercise that the participants experienced, as well as how those changed with age.

The chapter reported findings via eight themes based on priori codes.

Three out of the eight themes reported support for Hypothesis 2.1, as a collection of motivators related to physical and mental effects, and motivators related to relationships to be most prevalent in the sample. The support of the hypothesis confirmed that women experience a vast range of motivators, which change throughout their adult life.

Hypothesis 2.2 was answered by three themes, which showed barriers to exercise following a similar pattern, with references illustrating barriers related to physical health, mindset, and social aspects. The findings reporting on the hypothesis showed that women experience a variety of different barriers which change throughout woman's adult life.

In support of the quantitative phase 1 findings, the results of the Qualitative phase 2 illustrated that it is not explicitly age, but potentially the level of SA which grows over time with age or life experience, that is the moderating variable. The level of SA reportedly affected how prevalent motivators and barriers changed for women in the UK throughout their life.

Two themes, based on a priori codes, displayed support for Hypothesis 4.2, illustrated by examples of varied attitudes towards personal WB. These results showed a difference in attitude at different stages of life. Once more age was not explicitly the moderating variable, but the change in attitude was reportedly facilitated by dissimilar levels of SA. The attitude towards own WB at a younger age was reported as not present. This was possibly due to lack of conscious perception of the meaning of SWB at a young age. At older ages, or indeed at a stage of life when SA was more developed, the perception of WB was summarised by words such as calm and balance of physical, mental, and emotional aspects. The attitude towards WB changed with age, which supported the hypothesis. However, the distinction between different attitudes was not by age or age groups. The change in attitude is shown to have occurred spontaneously at a different stage for every interviewee, potentially influenced by their level of SA.

Additionally, the results documented the data-driven themes based on in vivo codes as 'Self-awareness', 'Feminism' and 'COVID 19'. The themes reported on aspects that were stated by all participants to be of importance when assessing their own motivators and barriers to exercise, as well as their view of their SWB. To reflect this, a new proposition was made noting not age but SA as a moderating variable. Furthermore, Feminism and Covid 19 have reported on the associated impact the women experienced when considering their exercise motivation and SWB.

The Discussion chapter evaluates and interprets the findings demonstrated in the Results Chapter in detail and in context of the project overall, moving from descriptive writing in this chapter to analytical presentation.

Chapter 5: Discussion

5.1 Introduction

This chapter interprets findings presented in the previous Results chapter. Initially in section 5.1.2 and 5.1.3 the aims and objectives of the study and RQs with associated hypotheses are re-stated to remind the reader of both. This is followed by a summary of the key findings as related to the RQs and hypotheses in section 5.2. The chapter is organised according to the order of the RQs and hypotheses, and therefore combines the Quantitative and Qualitative findings. In section 5.3 the results are interpreted in relation to the existing literature and original contribution to existing research is considered via critical evaluation of the research findings. The limitations of the study are considered in section 5.4, followed by summary of the Discussion chapter in section 5.5.

5.1.2 Restatement or research aims and objectives

As part of the fulfilment of the Professional Doctorate programme at the UoS, this research project was initially based on the professional experiences and practice-based knowledge of the researcher. Following the review of the current academic literature as outlined in Chapter 2, the aims, and objectives, in conjunction with the initial professional interest, were established.

The aims and objectives were to assess UK women's MTE and in relation to it the self-reported level of SWB. Furthermore, the RQs and hypotheses (Appendix 12)

were set to establish the effects of age on the type of MTE and WB attitudes, as well as to identify some of the prevalent motivators and barriers to exercise according to the women's rich narrative. In line with the above, the project was designed as a mixed-methods study, recognising the complex and multifaceted experiences of the adult female demographic in the UK, as demonstrated by the sample. As aims and objectives informed the RQs and hypotheses, so did those inform the methods of the study. In the mixed-methods design, the quantitative phase 1 proceeded with data collection via a questionnaire using Qualtrics software, with a subsequent quantitative data analysis via IBM®SPSS®Statistics 26 software. Followed by the qualitative phase 2, which collected data via semi-structured interviews, and data analysis was completed using TA, and NVivo 12 software to aid the process. Phase 1 aimed to establish trends in MTE and establish reported levels of SWB, as well as ascertain the age group, ethnic background, and gender identification. Phase 2 was to inform phase 1 and add rich qualitative data. The two phases assessed four RQs and eight hypotheses.

5.1.3 Restatement of research questions and hypotheses

The RQs and hypotheses in this study (Appendix 12) were as follows:

RQ 1. What is the relationship between the motivation for exercise and overall subjective well-being in women? (Quantitative)

Hypothesis 1.1: Reported external motivation and introjected motivation to exercise correlate with lower reported subjective well-being in women.

Hypothesis 1.2: Reported identified and integrated motivation to exercise correlate with higher reported level of subjective well-being in women.

Hypothesis 1.3: Reported intrinsic motivation to exercise correlates with higher subjective well-being in women.

RQ 2. What are the common motivators and the barriers to exercise for women? (Qualitative)

Hypothesis 2.1: Motivators to exercise vary throughout woman's life.

Hypothesis 2.2: Barriers to the motivation to exercise vary throughout woman's life.

RQ 3. Does a woman's age play a role in the reported dominant type of motivation to exercise? (Quantitative)

Hypothesis 3.1: Age plays a role in reported type of motivation to exercise.

RQ 4. Does a woman's age play a role in the reported level of well-being? (Quantitative and Qualitative)

Hypothesis 4.1: Age plays a role in reported levels of well-being. (Quantitative hypothesis)

Hypothesis 4.2: A woman's attitude towards her well-being changes with age. (Hypothesis with a qualitative aspect)

The quantitative phase 1 and qualitative phase 2 results are presented in detail in the Results chapter. The next section summarises the key findings.

5.2 Summary of key findings

The research results have been reported in detail in the Chapter 4. Here they are reiterated in a summary, to link the findings to the RQs and hypotheses and prepare ground for the following section, which unpacks and interprets the findings considering existing academic literature. The results were as follows.

For **RQ 1, Hypothesis 1.1**, the quantitative results showed a weak statistically significant negative correlation between external motivation and SWB, meaning that as external motivation increases the SWB decreases. The Introjected motivation and SWB showed the same results, thus the alternate Hypothesis 1.1 was supported. For **Hypothesis 1.2** the Null Hypothesis was accepted as no significant results were reported in the relationship between the Identified motivation and SWB, and the Integrated motivation and SWB also showed non-significant results, although it trended towards significance. For **Hypothesis 1.3** a statistically significant weak positive relationship was reported between intrinsic motivation and SWB. The Alternate Hypothesis was accepted, meaning that as intrinsic motivation increases the SWB levels also increase.

For RQ 2, and the associated Hypotheses 2.1 and 2.2, the common motivators to exercise were determined by the qualitative analysis to be related to three distinctive groups and summarised in themes accordingly: theme 'Motivation – Body' (sub-themes: Body Image; Health and Healthy longevity), theme 'Motivation - Mind' (sub-themes: Mental health and Feeling good) and theme 'Connectedness' (sub-themes: Parenthood and Togetherness). The predominant barriers to exercise were reported similarly as related to themes 'Barrier - Body' (sub-themes: Health and

Access), and 'Barrier - Mindset' (sub-themes: Social conditioning and External pressure, Prioritising and Parental guilt). Motivators and barriers to exercise were reported to be varied and to change throughout woman's adult life. The moderating variable appeared to be age or an age-related variable, such as SA.

For **RQ 3 and Hypothesis 3.1** the quantitative analysis results showed non-significant values, suggesting that the highest scoring type of MTE would have been reported irrespective of age. This suggests that age does not play a role in the reported type of MTE.

For **RQ 4 and the Hypotheses 4.1** the quantitative testing reported significant results and the Alternate Hypothesis was accepted. Meaning, that according to the findings a woman's age plays a role in the reported level of SWB. Furthermore, **Hypothesis 4.2**, as considered in qualitative phase 2, was supported by the reported themes showing how a woman's attitude towards her SWB changes with time. The themes 'Well-being - younger women' and 'Well-being - older women' gave account of references from the semi-structured interviews. However, the themes also suggested that the moderating variable may not be age, but rather a woman's level of SA.

The demographic data results for age provided context and support when engaging the findings, specifically, RQ 3 and RQ 4. The age groups and ethnic backgrounds, as represented by the sample, have not been represented equally and the next section discusses how this may impact the study conclusions.

The following section offers interpretation of the results, in relation to existing literature.

5.3 Discussion and interpretation of findings

The process of this research study was not linear and required adjustment as it proceeded. This iterative undertaking was challenging, and the benefit was not appreciated until the stage where meaning and impact of results were considered. The back-and-forth movement of focus between the Literature review, Methodology, and Results amounted here to a chapter which represents the accumulated impact of the sum of its parts, and indeed their interaction. The use of mixed methods in this study, where phase 1 informs phase 2 and vice versa was adopted, amongst other reasons, to increase data validity and reliability. The quantitative hypotheses were tested, and results presented in previous chapter. The qualitative hypotheses were presented as statements and therefore verified and equally presented. The qualitative data interpretation, whilst notably subjective, greatly enriched the quantitative findings. Whilst previous chapters considered the quantitative phase 1 and the qualitative phase 2 separately, here the results from the two phases are combined to present a logical account of interpretation and to answer the RQs more comprehensively. Furthermore, the Discussion chapter aimed to create a sum of all parts meta-inference in the summary of the results, their meaning, and the impact of each on the other. Thus, the sections that report on findings per each RQ provide only a partial answer to the aims of the project and are followed by section discussing the interaction of results.

The discussion begins with the consideration of demographic data results and their meaning in relation to RQs, and within this study overall.

Demographic data

It is widely accepted that the demographic specifications of a sample in a research study have an impact on the findings and conclusions, especially within social sciences (Singh and Masuku, 2014; Saunders, Lewis and Thornhill, 2016). The demographic data, which were collected as a part of the quantitative phase 1, reported on three demographic data questions. The first, the gender identification, was an important question to ensure that the collected data, and the consequent findings, can be confidently reported to be from the female demographic. Furthermore, previous research reported gender specific motivators and barriers to exercise (Brunet *et al.*, 2013; Hickey and Mason, 2017; Othman *et al.*, 2022) and this study intended to contribute new knowledge on the experiences of women in MTE and SWB. All participants identified as female and whilst important, these results had no further purpose in the discussion beyond the above.

The second demographic question, the ethnic group identification, showed that most participants identified with a White British background. Overall, the sample represented a wide range of ethnic backgrounds, and all respondents were UK residents. The selection of participants for the qualitative phase 2 emulated the ethnic background identification within phase 1. Ethnic background can indeed represent one of the main influences on how we view and respond to exercise (Blanchard *et al.*, 2003; Sheikh and Sharma, 2014) and the unequal distribution of ethnic backgrounds within the sample was considered in relation to the validity of the study. However, the demographic distribution compared favourably with the general distribution in UK population (https://www.ons.gov.uk/census/2011census), which reported 87.2% of the

UK population in 2014 to be White British. This result is further discussed in the limitations of the study and in the recommendation for future research, as considered in section 5.5 below. This demographic set of data, reported in detail in the Results chapter, were determined to not be likely to further affect the RQs and so are omitted in the further discussion.

The demographic question on age was essential and the results gained significant, because of the impact age had on participants answering of the RQs and the direct inclusion of age as a variable in some of the hypotheses. The oldest age group, 75+, was not represented at all and the remaining four age groups were represented in unequal measure, which can be considered a limitation of this study. However, the representation within the four age groups was sufficient to consider this data valid. The gender and age as demographic data were collected to address the study objectives, and to add to existing literature, which concluded gender and age to be a factor in exercise prescription (Hickey and Mason, 2017). Perhaps the 75+ age group did not respond because the questionnaire was distributed electronically. Older age groups are less 'digitally able' than younger age groups as reported by ONS (2021a).

The demographic data results discussion outlined the important aspects which impact further discussion on the RQs and hypotheses in the following sections.

Research Question 1 and associated hypotheses

Research Question 1 addressed the potential relationship between the type of the MTE and self-reported levels of SWB in women. The regulatory styles of

motivation, as referred to in this study, begin with the external motivation as the first of four EM states, followed by Introjected, Integrated and Identified motivation (Ryan and Deci, 2000). The intrinsic motivation is then the one motivation based on the immediate reward of joy or pleasure derived from, in this case, exercise (Ryan *et al.*, 1997). This represents a continuum alongside which the self-determination increases and Figure 11, which was also used in Chapter 2, illustrates the theory (Ryan and Deci, 2000). Amotivation was not included in this study.

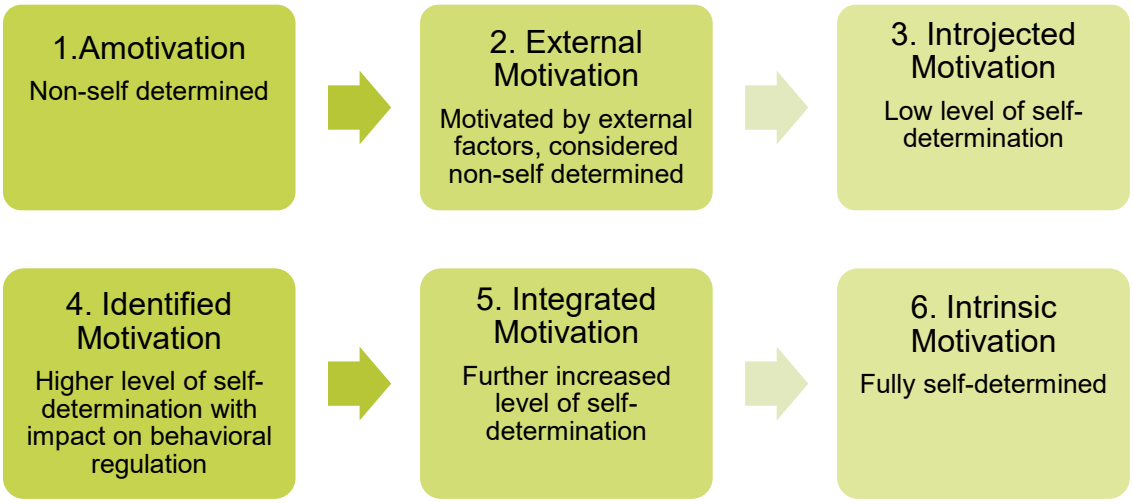

*Figure 11: Increasing level of self-determination impacting behavioural regulation (*Source: adapted from *Ryan and Deci, 2000)*

The project was underpinned by the theory that whilst exercise leads to higher levels of WB (Ryan and Frederick, 1997; Briki, 2018; Nezlek *et al.*, 2018), there are other potential variables affecting this correlation and MTE could be one of them. In other words, that it might not be the exercise participation alone which leads to higher levels of SWB but that the original MTE also affects the final SWB levels. This study was based on the gap in literature on the MTE correlation with SWB, in the context of the professional practice background and female demographic. There is some

literature that does report on the quality of the goal, as well as the motivation to achieve it, both affecting WB (Utman, 1997; Sheldon *et al.*, 2004). Additionally, intrinsically motivated activity and goal setting were reported to positively affect WB (Csikszentmihalyi, 1990). The research question was answered by testing Hypotheses 1.1, 1.2 and 1.3 in the quantitative phase 1. The three hypotheses tested the correlational relationship between the five different types of motivation and SWB. The meaning of those findings, in the most basic terms, shows no relationships between the Identified motivation or Integrated motivation and SWB, negative relationships between External and Introjected motivation and SWB, and a positive relationship between Intrinsic MTE and SWB. This study therefore argues that those women who experience a form of less self-determined MTE are likely to also experience lower levels of SWB. However, those women that report intrinsic motivation are likely to report higher levels of SWB. This adds to the existing literature, which documents correlations between exercise and WB (Ryan and Frederick, 1997; Briki, 2018; Nezlek *et al.*, 2018) and illustrates that other variables play a role in this relationship. Furthermore, literature reports that those who are intrinsically motivated are more likely to adhere to exercise of their own accord (Frederick and Ryan, 1993; Deci, 2012). The finding that only three of the five assessed motivations for exercise (Intrinsic, External, and Introjected) were significantly associated with WB was not unexpected, given the anecdotal observations made by the researcher in their professional practice. In relation to existing literature, the types of motivation and associated findings are reported as follows.

External and Introjected motivations sit on the spectrum of extrinsic motivations. The former is associated with a lack of fostering and adherence to

exercise (Ingledew and Markland, 2008), due to the predominance of motivators grounded in external stimuli and pressures. Identified MTE is represented by motivations such as wanting to accomplish a task or aid in the ability to remain a healthy person. Integrated motivation refers to completely assimilated reasoning in line with one's own values, where for example the woman exercises because she considers herself to be a fit and healthy person. Integrated and Identified motivations are associated with higher internalisation of motivation and with positively self-regulated attendance to tasks (Ryan and Deci, 2018). These motivations can be a predictor to exercise adoption but not always exercise adherence (Buckworth *et al.* 2007). Intrinsic motivation in contrast, sits opposite to amotivation on the continuum of self-determined motivations and is represented by pleasure from or enjoyment of an activity. Self-determined motivation is positively associated with longer exercise adherence (Frederick and Ryan, 1993; Deci, 2012). Furthermore, existing literature illustrates the relationship between exercise adoption and adherence and increased levels of WB (Briki, 2018; Nezlek *et al.*, 2018). Hence, the above shows the extent of existing research into correlations of motivation and exercise, as well as exercise and WB. This study contributes to that knowledge by showing the correlation between types of MTE and SWB. In practical terms, when measuring how exercise affects WB, researchers might also consider measuring the MTE. The results of this study indicate that women with Integrated or Identified predominant MTE might not experience changes in SWB, regardless of the level of motivation. Those who report External or Introjected motivation are likely to experience lower levels of SWB. And those who are self-determined by intrinsic motivation would experience higher levels of SWB. Therefore, the interpretation of results suggests that it might not be just exercise alone

that leads to higher levels of WB, but that the initial motivation to exercise might also play a role.

Furthermore, the results for the negative correlation between External and Introjected motivation and SWB present a new addition to the existing literature. Previous research investigated the effects of External and Introjected motivations on the participation to exercise with the conclusion of unreliable relationship (Ingledew, Markland and Ferguson, 2009; Teixeira *et al.*, 2012), however SWB was not considered as a variable. There is some literature demonstrating external and negatively perceived motivators negatively impacting on WB and mental health (Dawson and Thornberry, 2018). These two motivations sit closer to amotivation on the self-regulation continuum, and as such, are associated with less self-determined and unwilling adoption of exercise (Ingledew and Markland, 2008; Ingledew, Markland and Ferguson, 2009). Exercise prescribed by fitness instructors, with consideration to the client as a whole and with neutral language and encouragement for autonomy, reportedly leads to an increase of self-determined motivation and increased sense of WB (Moustaka *et al.*, 2012). This study offers new evidence that supports this theory, by examining the association between specific types of motivation and SWB, as well as the female demographic perspective. Separately, the results of this study are confirmatory of previous literature, however as a sum of all parts, including the results interaction, the results offer an innovative view. A book *Physical Self* (Fox, 1997) comes close to the focus of this study and depicts the relationships between the aspects of the human condition, leading to the overall sense of WB. Fox (1997) offers chapters which consider exercise in relation to different aspects of the human

condition, such as self-esteem and body image. This study gives results that might offer additional, complementary, knowledge to such publications.

The positive correlation detected between intrinsic motivation and SWB aligns with existing literature, especially literature related to SDT. The BREQ 3 questionnaire sub-scales used in this study were based on the SDT, hence this section of discussion illustrates the interlinking results and interactions of variables. There seems to be limited research directly assessing MTE effects on SWB. The collection of material by Fox (1997) offers an assessment of some of the aspects affecting the physical self. Tončić and Anić (2015) assessed eudemonic and hedonic motivations and its correlation with WB, however the focus in detail, and the adopted methods, were vastly different to this study. The existing literature on this topic is not exhaustive, and although in many ways there seems to be an interest in the field, this study's contribution is partly through a specific focus on MTE and SWB correlation, with other aspects considered later. This study, in its combination of variables, is largely innovative. The findings of this research offer an addition to existing literature, but also to the professional practice.

In professional practice at present time, exercise prescription is designed to address issues solely related to physical fitness and how to optimise it. Practitioners lack the time, and oftentimes the knowledge, needed to assess the client needs sufficiently to prescribe an effectively tailored exercise regime. This research's findings could have a profound impact on professional practice. Sport and exercise professions might benefit from further attention to the client's quality of MTE, particularly if the aim is to not just increase exercise engagement but also adherence, and to contribute positively to the client's overall health. Whilst exercise aids our overall sense of WB

(Ryan and Frederick, 1997; Briki, 2018; Nezlek *et al.*, 2018) this study suggests that the quality of motivation behind exercise is important to WB. Section 6.6 in the Conclusion chapter is devoted to the contribution and dissemination of this study findings in professional practice.

The paragraphs above discussed the correlation between the five types of MTE and SWB based on the data results. The discussion documented the existing literature and the contribution of the findings to it. The potential impact on professional practice was suggested and is detailed in section 6.6, in the Conclusion chapter. The overall message from the answers to RQ 1 can be concluded in the recommendation for future studies, to incorporate MTE when measuring exercise effect on SWB, as exercise alone might not be the only variable affecting WB, and MTE has been shown to correlate with levels of SWB in women. RQ 1 addressed one aspect of the complex story of exercise to motivation and SWB in women in the UK. RQ 2 was set to add a qualitative knowledge of what women consider to be their predominant motivators and barriers to exercise at different stages of life.

Research Question 2 and the associated hypotheses

The second research question had two associated hypotheses, as outlined in section 5.2. This question was investigated qualitatively in the second phase, to determine what common motivators and barriers to exercise women experience, and if those change. Some of the patterns in the findings appeared to be socially produced, but most were deeply personal. Overall, the findings suggest that motivators and

barriers to exercise vary and indeed change throughout different stages of life for women, which supports the hypotheses and answers the RQ.

The following paragraphs outline the predominant motivators and barriers to exercise, as reported by the sample, grouped into themes. The themes that emerged from the data followed similar groupings for motivators and barriers. The female population sample reported predominant motivators, which fell into three groups: 'Motivation - Body', 'Motivation - Mind' and 'Motivation - Connectedness'.

Within the motivators related to the physical body were the aspects of 'Body image', and 'Health and Healthy longevity'. These findings are convergent with previous research (Brunet *et al.*, 2013; Clarke, Stussman and Nahin, 2015), which reported similar motivators in women with impaired health. Previous research also reported higher dissatisfaction with body image in women of all ages, when compared to men (Davis and Cowles, 1991), which gave in part the impulse to investigate this further in RQ 2. Body image perception has also been directly linked to WB (Homan and Tylka, 2014). Body image as a motivator was reported by younger participants, as well as by older participants referring to their younger years. This supports the suggestion that younger women might be more affected by their body perception, which is in line with previous research (Steltenpohl *et al.*, 2019). It has also been reported that the stigma attached to negative body image and the associated potential negative repetitive cycle of behaviours, can have further negative effects on mental health (Aston *et al.*, 2011). Here the ‘body image’ motivator as a self-constructed motivator was reported as a positive one. Only when the body image motivator was grounded in the perception of external pressures, was it reported as a negative motivator. Davis and Fox (1993) reported greater body satisfaction in high level

exercisers, but Imm and Pruitt (1991) reported the opposite. Combined with this research, it could be argued that with a higher level of SA, a woman might consider body image as her external motivator to exercise, simultaneously reporting being a low-level exerciser, and report a higher level of SWB. Where a younger woman might report such an image as externally motivated and report lower levels of SWB. The common variable could be the level of SA, not just the age difference, as based on the respondents' answers. Based on the findings, it could be argued that SA might play a role in the correlation between MTE and WB, perhaps as a mediator of a woman's perception of external pressure. However, the variable might also be age, because SA increased with age as reported by the sample, a pattern also detected previously (Carstensen, 2006; Leary and Tangney, 2011). This argument would partly confirm previous literature, which states that those who engage in activities such as 'thinking gratefully, optimistically, or mindfully' (Lyubomirsky and Sin, 2009) become happier as a result.

'Health and healthy longevity' as motivators for exercise were reported by older participants and linked to the awareness of how the body's ability to stay healthy changes. The ambition to remain healthy and to continue the trend was hence linked to those who could report their experiences from the perspective of richer life experiences and age. Health as a motivator has been concluded by previous research (Schutzer and Graves, 2004) thus this study agrees with previous findings. These results were unsurprising and simply added support to the existing literature. In the theme 'Motivation - Mind' the sub-themes reported on 'Mental health' and 'Feeling good' as motivators to exercise and were reported by all age groups within the sample. The effects of exercise on mental health are known (Frederick and Ryan,

1993; Thapa and Subedi, 2018). The adherence to exercise based on the intrinsic ‘feeling good’ has also been noted, especially by Self-Determination Theory researchers (Frederick and Ryan, 1993; Deci 2012). Furthermore, literature documents research presenting female demographic data regarding exercise motives and psychological well-being (Maltby and Day, 2001). Hence this result confirms previous research and further adds mental health to be an important MTE in women. Regarding professional practice, the findings in the collective grouping under the 'Motivation - Mind' theme offer material for consideration to exercise professions, specifically encouraging the focus on the client overall, inclusive of mental and physical health. The increased knowledge regarding specific motivators to exercise in women in the UK has the potential to aid the qualitative improvement of the provision of service to women in that scope.

The last theme summarising the predominant motivators to exercise, under the heading 'Motivation - Connectedness’ presented the extent to which women find their relationships with others to be affective of their MTE. The two sub-themes 'Togetherness' and 'Parenthood' summarise somewhat different corners of the theme. Under 'Togetherness' the findings indicate the importance of the company of others and the qualities of relationships with others that lead to exercise motivation. These findings contribute further support to literature which argues for togetherness as an aspect for consideration, in relation to MTE (Korkiakangas *et al.*, 2011; Lovell *et al.*, 2016; Othman *et al.*, 2022). The way we relate to others is an important aspect of our psychological WB (Ryff, 1989). Furthermore, literature has noted the importance of social support as related to exercise and diet adherence (Sallis *et al.*, 1987; Grunseit, Richards and Merom, 2018), reporting positive effects on adherence to both of those

WB enhancing facets. The references quoted within this sub-theme include statements on motivators specifically within the fitness environment, which may provide a direct contribution to the field of health and fitness professions. Regarding the perspective of motherhood as a motivation, the academic field offers limited material for consideration (Spowart and McGannon, 2022). The findings here suggest that women who are mothers are motivated to keep fit and healthy not for self, but so they can be more effective, energetic parents and to lead their children by example. Furthermore, this study suggests that women who are mothers might be motivated to exercise to maintain their mental health as a vehicle to being better parents and to maintain better relationships with their children. Ryan and Deci (2000) stated that a sense of self-motivation and mental health are enhanced when the needs for competence, autonomy and relatedness are satisfied. Whilst this study did not directly focus on these aspects, the participants reported their motivators for mental health to be connected to motherhood, which in turn falls under the connectedness theme. As such it could be argued that the perceived parental competence aligned with an enhanced sense of mental health is associated with exercise practice.

The vast variety of motivators reported by the sample supports Hypothesis 2.1. and shows how motivators change over time and with circumstances. As noted in the paragraphs above, different age groups reported different motivators often related to a stage of their life, thus providing evidence for change throughout life. The barriers to exercise were reported under similar grouping as the motivators.

The barriers to exercise themes identified references under: 'Barrier - Body', 'Barrier - Mindset' and 'Barrier - Connectedness'. The findings gathered under the ‘Barrier – Body’ theme illustrated the barriers that women associate with their physical

body. These results did not discover anything new regarding barriers to exercise in women. Previous research offers material covering barriers related to health (Ingledew and Markland, 2008; Clarke *et al.*, 2015) and access especially for populations with impaired health (Rimmer, 2008; Dondzila *et al.*, 2014). This study simply offers new evidence supporting existing literature. The results suggest that women continue to see their impaired health as a barrier, and that access to suitable exercise environment also continues to be perceived as a hindrance to women's MTE across all age groups.

The theme 'Barrier - Mindset' grouped references which related to mind or mindset and the theme was further illustrated by three sub-themes. The first reflected on 'Social conditioning and External pressure' as perceived by the participant. The existing literature offers similar findings and states that our perceptions affect the choices we make in relation to exercise (Bredahl *et al.*, 2015). Once more the results here appear to simply agree with existing literature, however the findings matter because of the potential impact on professional practice. The author's personal observation suggests that the current state of exercise prescription does not consider the complexity of the client's decision making or motivation. The health and fitness professions which are involved in prescription of exercise might assume that the client who asks for advice on exercise prescription is motivated and ready to go. This is partly addressed in many current professional training courses for fitness instructors and personal trainers, which include modules on behaviour change techniques such as motivational interviewing, based on stages of behavioural change. Further inclusion in CPD modules of the importance of understanding of the client's complex needs and the exercise prescription reflected those needs, the outcome could be positively

affected and result in exercise adherence based on enjoyment and lack of pressure. This, as stated above, could then lead to potential higher levels of overall WB.

The second sub-theme, 'Prioritising', expressed the view of time limitations as a barrier. Women reported that especially family-related responsibilities create a barrier to the woman's time for physical activity. However, further probing questions established that this barrier might be created via the woman's mindset and perception of what ought to be her priority or not. For that reason, this barrier was included in this section. Additionally, women who were mothers noted that their own SA makes a difference in their perceptions of this problem and its management. The perception of deficit in time as a barrier has been reported by previous studies (Welch *et al.*, 2009; Korkiakangas *et al.*, 2011). This study's findings agree and add supporting material to the previous research. The results are important, because they illustrate the varied barriers here related mainly to the active motherhood stage of a woman's life. The older respondents also commented on their own awareness of how prioritising is rooted in a mindset, rather than being a time barrier. Furthermore, clarifying statements reported SA and better understanding of self as having an impact on what is prioritised. Specifically, exercise as self-care was prioritised by older respondents. These results expand and enrich the overall conclusions and further illustrate the concept of SA as a potential influencing factor.

Under the third sub-theme, 'Positive barriers', cases where participants consciously rejected exercise on a specific occasion were grouped.

This sub-theme described the awareness of the need to be respectful of self and acknowledge that at times it is a positive act to reject exercise, based on simply not wanting to take part. The level of SA was considered by the participants during their

interviews, as evidenced by references to it or to the importance of self-knowledge. Specifically, because the participants declared the knowledge of self to be crucial in showing kindness to self as a reflection of SA. They linked this experience to their older and more experienced age, specifically in citing their ability to acknowledge that they do not feel motivated to exercise at present and that it is acceptable to act upon that feeling, without experiencing pressure or guilt. Whilst reporting this as a barrier to exercise, this argument illustrates the liberating freedom of that act. Hence the references were grouped as ‘Positive barriers’. The theme reported the importance of SA as a facilitator of the ability to acknowledge self as the central point of decision making, to harness one’s agency and the freedom to say no. Agency versus structure is well documented in the academic research (Giddens, 1991; Archer, 2003). Agency and WB, as a more specialised area of this field, is documented in literature linked to SDT (Deci and Ryan, 2008b). The results of this study correspond with Haybron (2008), who stated that doing what makes us happy is essential to who we are, thus considering agency in his account of psychology of WB. In professional practice the knowledge related to a woman’s agency could affect how exercise prescription is adopted by women, especially if their agency is considered as equally valid, when compared to the structure of sports science-based recommendations.

The last theme of 'Barrier - Connectedness' had only one sub-theme, 'Parental guilt'. The aspect of connection of others was considered as overarching, however the guilt of a mother as related to her family members and family-associated responsibilities, dominated this theme. The interpretation of the findings suggests that women felt their time for exercise was secondary to the needs of the family, especially their children. This has been previously documented for male and female gender

(Hickey and Mason, 2017), and when considering women in sport (Spowart and McGannon, 2022). Whilst the references were oftentimes accompanied by a negative undertone, the women also reported that being a mother was so rewarding that the negativity they experienced was short lived. The acknowledgement that the time devoted to their children could otherwise be devoted to themselves, yet the trade-off is overall a positive experience, also required a level of SA. This finding of family responsibilities as a barrier to exercise participation agrees with previous research (Patel *et al.*, 2013; Hickey and Mason, 2017). Further, a paper by Lovell *et al.* (2016) reports specific barriers faced by exercisers who are mothers. It is reasonable to conclude that these challenges befall many mothers and that the quality and intensity of those challenges changes with the age of the child and the mother. In the researcher's professional experience, current practices in exercise prescription attempt to account for family-related time restrictions, but parental guilt and associated feelings are not often considered. The suggestion for dissemination of these findings into professional practice could, as mentioned above, aid the consideration of the female client as a multifaceted being, not just a one-dimensional client in need of an exercise routine. However, a detailed section is devoted to this in the Conclusion chapter.

Overall, the sample reported many different barriers which change over time and that supported Hypothesis 2.2, and in part answered RQ 2. The above paragraphs discussed the frequently experienced motivators and barriers to exercise as stated by the sample. Furthermore, hypotheses 2.1 and 2.2 not only stipulated those motivators and barriers to vary as reported above, but also that they change throughout woman's adult life. The four age groups represented by the sample

reported on the qualitative change in motivators and barriers over time, relating to multiple aspects including changes in life circumstances, age and SA. Surprisingly, the changes which happened with age, seemed to be associated not just with age and diverse life experiences, but also with the woman's approach to the problem of motivators and barriers. This unexpected aspect could be linked to SA. When asked about mediators of MTE or specific motivators and barriers to exercise, all participants engaged with SA in some point in their life. The findings agree with existing literature which reports age-related changes to attitudes (Charles, Reynolds and Gatz, 2001). Furthermore, Pelletier, Dion and Lévesque (2004) link some of the motivators and barriers for women to self-determination and they predict it to influence positive management of self. The literature in the spectrum of motivators and barriers reports on women and body image (Homan and Tylka, 2014; Othman *et al.*, 2022), health (Schuster and Graves, 2004), as well as specific health issues, such as eating disorders (Dawson and Thornberry, 2018). This study adds to the existing literature and speculates that within the context of exercise motivation the level of SA could be an additional variable.

The data suggests that SA plays a role in the change of attitude towards motivators and barriers, however what drives the change is uncertain because SA grows with age. Related literature reports on age as a reliable predictor of self-concept formation (Carstensen, 2006). Additionally, SA has been argued to be a part of self-concept (Leary and Tangney, 2011). However, the specific correlation of age and SA seems under-reported. This study's findings suggest that SA has been found to be a notable variable. The combined value of these findings points to the possibility that motivators and barriers to exercise vary and change, and that a woman's engagement

with them is affected by her level of SA. It could be stipulated that this change is due to age and age-related changes in circumstances, however management of these motivators and barriers suggest the requirement for SA. Whether SA growth can be assigned to a specific age remains a question. The discussion above clearly identifies current barriers and motivators to exercise and considers how they may differ with age, effectively answering the RQ2.

Overall, the professional practice field within the health and fitness industry, specifically within professions aiding the female population regarding exercise and WB, could benefit from acknowledgment of the variety of motivators and barriers to exercise. Moreover, the professional practice could benefit from the knowledge that SA might play a part in this spectrum. The value of the findings and their meaning are presented in this chapter one by one, as related to RQs, but they grow via the interaction of the results as the chapter unravels. A discussion of the correlation between MTE and age follows in the coverage of RQ 3 and the associated hypotheses.

Research question 3 and the associated hypothesis

This section of the Discussion chapter interprets the findings to RQ 3, regarding whether a woman's age plays a role in her reported dominant type of MTE. In the quantitative phase 1 analysis no significant relationship was found between the highest ranked type of motivation and age. As the predominant type of motivation was reported irrespective of age, the interpretation is that women can experience any type of motivation at any age.

The results here showed that nothing was driving the relationship between MTE and age in a specific direction. This result is particularly of interest in the later sections of this chapter, where the interaction amongst results for RQ 1, RQ 3 and RQ 4 are considered in detail.

Existing literature, specifically addressing this problem, could not be located. However, there is previous evidence of a growing sense of autonomy affecting motivation with age (Sheldon, Houser-Marko and Kasser, 2006). Further literature reports the different motivators to exercise within an older population (Cohen-Mansfield, Marx and Guralnik, 2003), and reports gender and age differences in motivators and barriers (Hickey and Mason, 2017). The new findings contribute specifically regarding the correlation between the highest reported motivation (based on the BREQ five sub-sets of External, Introjected, Integrated, Identified and Intrinsic motivation) and age. This contribution appears new, whilst closely related to the existing knowledge. The meaning of the findings is perhaps more relevant to this study in their contribution to the meta-inference of results presented below, within the Interaction of results section. The answer to the RQ 3 was therefore that a woman's age does not play a role in the dominant type of MTE. In inference with previous findings this result presents a question regarding the possible moderating variable affecting predominant motivation. The interaction of the answers to RQ 2 and RQ 3 indicate SA as a possible variable in assessment of both, MTE and WB, across a woman’s adult age. This further feeds into the narrative, which so far suggests age is not the only moderating variable, as changes to the level of SA appear to happen as age increases.

The literature that assesses the types of MTE, as based on BREQ 3 sub-sets, demonstrates research within a specific age group (Markland and Tobin, 2010; McMichan, Gibson and Rowe, 2017) or within otherwise specified demographics (Cid *et al.*, 2018), but not as a comparison of age groups within single gender. This study does not directly agree or disagree with the existing findings. However as similar as these studies are, they also seem not directly comparable. The tentative conclusion here is that this project adds an additional angle of focus to the field of existing literature.

Professional practice might not draw benefits directly from the findings here. The age and type of MTE not being significantly related simply feeds into the previously stated potential practical application of findings. Each person being addressed as a complex individual would benefit the client and the industry.

To further add to the unravelling results of this study, the next paragraphs consider the correlation between age and SWB.

Research question 4 and the associated hypotheses

To expand the scope of the study, RQ 4 asked whether a woman's age plays a role in her reported levels of SWB. The associated hypotheses 4.1 and 4.2 examined the problem from a quantitative and qualitative perspective, respectively. Support was found for Hypothesis 4.1, which suggested that age does play a role in self-reported levels of SWB. An additional contribution of the findings suggests that the age group 25-44 was driving the relationship, with participants in this age group reporting significantly higher levels of SWB than the younger age group, and significantly lower

levels of WB than the older age group 45-64. These results indicate, in the scope of this study, that as women age their self-reported level of SWB appears to increase. However, this could be due to several parameters, not just age. In principle, this result agrees with existing literature reporting higher levels of self-reported WB in older age groups (Argyle, 2001; Charles, Reynolds and Gatz, 2001; Diener and Suh, 2003). Additionally, cross-sectional, and longitudinal studies have previously concluded a correlation between age and a positive outlook on life (Argyle, 2001), which adds to the overall literature, noted and considered to be in line with this study's findings.

The phase 2 semi-structured interview questions asked the participants about their attitude to their SWB and if they experienced any changes at different stages of life. The qualitative analysis of their responses contributed two themes: 'Well-being - younger women' and 'Well-being - older women'. The first theme had one sub-theme named 'Lack of knowledge & self-awareness'. The sub-theme was built on references from the younger participants, or from older participants referring to their younger years. The sub-theme illustrated how young women struggled to answer the question, displaying uncertainty in knowing what WB meant to them. The older women said that their view of WB when they were younger was non-existent, because they did not know themselves enough to know how to view or approach their own WB. This is an important result, because it potentially gives a partial answer as to why a younger age correlated with lower reported levels of WB in RQ 1 findings. The correlation between SWB and age does not appear exhaustively reported however, there is some literature that reports less negative emotional experiences in older age (Gross *et al.*, 1997; Diener and Suh, 2003).

This study in the meta-inference of findings, proposes that SA might be a factor influencing a woman's view of exercise and WB. However, the above indicates that self-knowledge could be a prerequisite of building SA, which with time allows women to form a view of their WB, upon which they act. SA and self-knowledge are often used interchangeably (Carden, Jones and Passmore, 2022), whether rightly or wrongly. Existing literature, examining mixed gender samples, reported that WB levels in older age might be positively affected by better management of emotions (Gross *et al.*, 1997), which agrees with the findings. Moreover, the proposition combined with previously discussed results regarding an older woman's ability to deal with external pressures in a more stable manner and with more agency, has a potential for further propositions to SA as a significant variable. This is in terms of the ability to successfully navigate social and external pressures, especially social media and images on social media influencing a young woman's view of self (Mask and Blanchard, 2011; Wood and Pila, 2022). Interestingly, Synnot (1992) defines the physical self as socially constructed and states that each new era re-constructs the body. In essence, what social media images project today would be very different to what young women might aspire to tomorrow, as related to their body. This further links to the idea of socially prescribed perfectionism (Dawson and Thornberry, 2018), where the woman’s experience might be grounded in social media images, rather than being grounded in self-perception and knowledge. The effect SA would have on processing these aspects and changes is invaluable, however this notion extends past the scope of this study. Further research might benefit this area of focus.

The theme 'Wellbeing & older women' included the sub-themes 'Mind and conscientiousness' and 'Calm'. The former gathered references on the deep meaning

of WB to older, more experienced women. As well as including the notion of a healthy mind as an indication of a heightened sense of WB, it also featured the indiscernible connection to others within humanity. These findings agree with previous research and add supporting material. Ryan and Deci (2000) noted 'relatedness' to be an essential human need of psychological WB. Positive relationships with others have also been reported to have a positive effect on overall WB (Ryff, 1989; Anić and Tončić (2013). Here the results offer new qualitative data, which illustrates in detail that human connection is reported to be important to older women's sense of WB. The latter sub-theme was built on responses referring to calmness of the mind as a synonym to WB. These references illustrated how women see their own WB from the perspective of life experience and that this notion does not indicate just physical health or something tangible, but a vast swath of reciprocal relationships between aspects that from an overall sense of WB. This largely agrees with existing literature (Gross *et al.*, 1997; Charles, Reynolds and Gatz, 2001) and offers new strengthening support for the existing theory.

Moreover, it offers new material, which specifically depicts the correlation of age and WB, the differences between younger and older age groups regarding their views on WB and proposes SA as an additional variable affecting women's attitudes to their WB. Self-concept, as a collection of beliefs about oneself, becomes increasingly multidimensional with age, but can be differentiated from other constructs (Marsh, 1997). SA seems to be, according to findings here, one of the facets of this construct, as it increases with age. Griffin (1988, p.76) considers whether it is "effectively possible to compare one person's well-being with another's". The findings here somewhat disagree with that statement, as SA is proposed to be important, according

to all participants in the sample across all age groups. However, TA is in part subjective, hence generalisation is tentative here and some might argue that comparing the depiction of WB of participants is not reliable evidence.

These results sufficiently answered RQ 3 and showed that age and SWB correlate, with further reporting on the qualitative differences in women's attitudes towards WB at different stages of life.

All the results in this project have added to some extent some value to each RQ and hypothesis, but more so they had value as a sum of all parts. As each part is discussed, the whole story emerges through the meta-inference of those parts. The results and their interpretations as related to answering the RQS, have been outlined above. The meaning of those results has value within the individual RQs, but more so as a sum of those parts. The following section considers the value to the interaction of results in this study.

Interactions of RQ results

This research project was set to examine the correlation between MTE and SWB in women and consider age as a variable in their narrative. Some of the results were anticipated and some were surprising. But none was as exciting as the meaning behind the combined results.

That External motivation correlated with lower SWB, and intrinsic motivation correlated with higher levels of SWB, was largely unsurprising. Yet, the predominant motivation did not significantly relate to age, whilst age was shown to positively affect SWB. Additionally, women experienced varied motivators and barriers to exercise,

which change throughout life. The combined meaning here is carefully suggested to be an age-related variable, which may prove effective in interpreting the results overall. The answer offered by the sample when asked to elaborate in their own words on what makes a difference, was SA. As stated above, this variable increases with age, hence corresponds with the proposed meaning. It would explain why older women report external motivation as frequently as younger women, yet report higher levels of SWB, despite the clear reports in RQ 1 that External motivation and SWB correlate negatively. Perhaps as SA increases with age, the perception of external motivators qualitatively changes and subsequently lacks the negative impact demonstrated in younger women. However, the study cannot prove nor disprove whether it is age, SA, or other unknown variables that contribute to the significant change in women's attitude here.

To ensure that the correlation of MTE and age had been thoroughly investigated a decision was made post phase 1, based on the results of the phase, to expand RQ 2 and add a question to the semi-structured interviews to assess whether motivators and barriers to exercise change with age (as reported in previous section regarding RQ 2). Since types of motivation versus age were reported not to be statistically significant, it was of interest to the study's conclusions to see if a respondent reported different quality in her motivators or barriers to exercise over stages of life. The findings of the phase 2 analysis of RQ 2, as stated above, showed that motivators and barriers to exercise indeed change for women. These findings further reported that there was not a set of motivators or barriers to be assigned to a specific stage in life of an adult woman or her age. Moreover, the phase 2 findings showed that there was not an absolute and unequivocal split of motivators or barriers

across age groups, which supported the findings of phase 1 answers to RQ 3. However, the statement that motivators and barriers change with age, of course contradicts the RQ 3 conclusion. This could simply mean that the correlation requires further investigation, perhaps incorporating mixed methods design with a larger sample of female demographic, and with a single focus on the type of MTE and age. This result further matters, because whilst women said that they experience varied motivators and barriers and showed that any type of motivation can be associated with any age group, they also reported the view that their SA influences their decision making. This links the findings back to RQ 1, in that if SA affects how a woman perceives the motivators and barriers to exercise, and any motivation can be experienced at any age, whilst WB grows with age and the type of MTE positively or negatively affects it, then SA is viable. An example of this is that an older (more self-aware) woman can experience external motivation, but still report a higher level of WB than a younger woman. SA in women is also reported in conjunction with the ability to deal with changes in life circumstance in later life (Taylor-Swanson *et al.*, 2019). However, this study contributes new material, suggesting that SA might also feature as a variable to recognition of own attitude to motivators and barriers.

Some existing literature mentions that the normative effects on WB related to self-autonomy increase (Sheldon, Houser-Marko and Kasser, 2006) and self-efficacy (Magklara and Morrison, 2016). However, the methods and sample implemented in these previous works do not correspond with this study, and their primary aims also differ. Hence care is required where drawing parallels. The SDT findings of Ryan and Frederik (1997), which are outlined in the Literature Review chapter, have partly created the basis for the aims of this project. Namely, their focus on subjective vitality

was instrumental in the phraseology of the WB questions (phase 1) and subsequently changing those to the OECD (2013) recommendations. The findings here complement the SDT research in the additional knowledge it contributes, but also in the recommended attention to the language used in the phrasing of WB questions and the female demographic focus. It does not directly disagree with the findings of Ryan and Frederick (1997) but contributes to their conclusions.

One of the probing questions used in the semi-structure interviews was 'Why do you think that is?' (Appendix 9). This question, in relation to the changes women experience in their attitudes to exercise and SWB, was used to ascertain why the sample thought these changes occurred. The answers have been grouped under a separate theme 'Self-awareness'. The women said that SA allowed for better management of self, as well as their environment in relation to the topic. All participants at some point during the interview mentioned SA or self-knowledge as a significant factor in their decision-making regarding exercise and WB. This theme of SA, which does not reflect the original RQs, was retained as supporting material, as it was frequently reported by the sample in relation to MTE and WB. The aspects of MTE and WB began to overlap and produce results which showed the intertwined meanings for women in the UK. The data and results were assessed for any potential conflating of the terms by the participants, or the linking of the terms out of lack of clarity. However, only when asked to further explain a phenomenon relating to their perception of MTE and SWB and related changes, did the sample offer self-assessment, including terminology such as self-knowledge or SA as an answer. Figure 1 in the Literature Review chapter proposed a model of reciprocal determination of aspects of WB. This section of results illustrates how different life

experiences and behaviours impact a woman's sense of WB, thus supporting the reciprocal determinism (Bandura, 1986) idea presented by Figure 1.

The need for the researcher's reflexivity was noted (Morse and Niehaus, 2016; Saunders, Lewis and Thornhill, 2016) to judge all data objectively and to ensure that this theme or any other were not somehow led by the researcher as an interviewer. The meaning behind the proposition of SA as one of the essential facets to a woman's navigation through the world of exercise and WB lies in the study's potential contribution to the existing academic research, as well as to the professional practice. The significance of this finding is also in the potential contribution to existing CIMSPA approved courses for CPD of Personal Trainers and Gym Instructors. As outlined in the Introduction chapter, education for those professions is at present governed by CIMSPA as a chartered professional body for regulation of sport and physical activity sector. The set standards for minimum requirements for qualifications within the sector include aspects of behavioural change and impact of modern lifestyles on well-being. This project in its findings contributes new knowledge related to those specifications. To further the education and professional practice of Personal Trainers and Gym and Fitness Instructors, CPD courses would benefit from incorporating self-knowledge and self-awareness aspects as moderators of well-being perception in women.

The aims and objectives of this project have been achieved in the answering of the RQs, however the researcher would like to offer new knowledge which indicates SA as an important variable in MTE and WB in women. The contribution to literature, as well as professional practice, have been outlined throughout, and is further detailed in section 6.6 in the Conclusion chapter. Additionally, the study proposes an argument

for future research to examine SA in a larger sample of the female demographic, in correlation with self-management and WB.

5.4 Chapter summary

The findings showed that MTE and SWB in UK-based women correlate. Specifically, if a woman scores high in external or introjected MTE, she is likely to score lower on SWB. If intrinsic motivation is reported, the woman is likely to express higher levels of SWB.

Additionally, motivators and barriers to exercise were found to vary and change with age. This change might occur over time and be related age or events in life, however the results also showed that women report SA as a significant factor in this change. Alternative explanations could be considered, namely rooted in the phraseology behind the explanations of the phenomena, which could mean that self-knowledge, self-esteem, or life experience could be assigned as potential variables instead of SA. Herein lies the scope for future research.

The above also discussed results related to age as unimportant in the dominant MTE, meaning that women report any type of MTE at any age. This corresponds with the study's proposition of possible other variables than age. Yet, WB levels increase with age. Perhaps if we consider SA to be the possible moderating variable, we might be better able to explain this phenomenon.

Furthermore, professional practice might benefit from increased consideration of how a woman perceives herself, and based on her narrative could then prescribe the type and quality of exercise accordingly, to facilitate adherence and lead to an

increase in WB through exercise. As stated above, previous research shows that exercise leads to a rise in self-reported WB (Nezlek *et al.*, 2018) and that adherence to exercise in turn leads to better management of barriers to exercise (Edmunds, Ntoumanis and Duda, 2007). This study offers supporting evidence to this existing research and contributes new material for consideration.

The results that emerged from the phase 2 analysis and were omitted from the main body of the Discussion chapter, were summarised under the themes 'Covid 19' and 'Feminism' in the Results chapter. These were themes that did not directly inform the RQs. However, future research might include further investigation of these aspects.

The sections above aimed to discuss and interpret the study's results, create a narrative which shows the meta-inference of the mixed methods results, and together with previous research, proposes valid conclusions and considerations for professional practice. The academic research contribution of this study, in part, is the recommendation that the measuring of WB in relation to exercise should consider incorporating MTE as a starting point, to determine whether it is exercise alone that leads to better sense of WB, or whether the initial MTE plays a role. Furthermore, the consideration of a potential moderating variable in SA, when researching dominant motivators and barriers to exercise, could contribute to further findings and knowledge in the field.

In conclusion, the meta-inference of the quantitative phase 1 and qualitative phase 2 results, as presented throughout the discussion of the results, depicted the contribution of this study to existing research, and to professional practice. Specifically, contribution to existing knowledge has been noted throughout this chapter

and related to specific findings in line with relevant literature as outlined in the Literature review chapter. The use of mixed methods produced rich data from the two phases and minimised the risk of limitations by use of a single method. Whilst many segments of the results were convergent with previous research, the study extended the existing knowledge in the specific contribution of the correlation between MTE and WB, in consideration of age and SA as a proposed moderating variable. The RQs were answered sufficiently. The MTE and WB were shown to be related, which was further expanded on through the qualitative account of predominant motivators and barriers. A woman's age was shown to not correlate with MTE, which suggests that any type of motivation can be experienced at any age. However, age did play a role in the reported levels of WB. The interpretation of this result further benefited from the qualitative data, which showed that age or the age-related variable of SA were likely moderating variables of women's WB attitudes.

This study offers additional knowledge to the existing academic research, as well as the contribution to professional practice. Specifically, it offers potential additions to existing educational material for sport and physical activity professions as governed by CIMSPA. The dissemination of findings into professional practice is partly planned via Well-being Workshops and corporate talks incorporating the notion that SA plays a role in women's motivation and behavioural change. This, and recommendations for future research, including the limitations of this study, are noted in the Conclusion chapter.

Chapter 6: Conclusion

6.1 Introduction

This chapter concludes the thesis, by summarising the key research outcomes of the study in line with the aims and objectives. It provides a condensed discussion of findings from a broader perspective, in relation to the RQs, indicating the contribution to existing literature and professional practice thereof. Included is the review of the limitations of the study and the opportunities for future research.

6.2 Research findings based on aims, objectives and RQs

The aims of this project were based on the professional practice-based knowledge and the literature review of existing research in the field of health and WB. The aims included the investigation into the MTE and self-reported WB in women, the correlation, and related aspects such as age, motivators and barriers. The Literature Review (Chapter 2) gave the background to the proposed project and a justification basis to RQs and the associated hypotheses (Appendix 12). To effectively address the research problem by answering the RQs, the objectives included selecting and using suitable methods (Chapter 3). The study aimed to contribute to research and professional practice, considering the overall findings. Sections 6.3 and 6.4 outline the suggested contribution.

The results of this mixed-methods study have been presented in Chapter 4, following the chronological order of quantitative phase 1 and qualitative phase 2.

Interpreted within the Discussion (Chapter 5), the findings were documented in order of the RQs. Therefore, the quantitative and qualitative phase findings were mixed to accommodate the presentation. As based on the data from 146 respondents in phase 1 and 11 participants in phase 2, the hypotheses were addressed and the RQs answered. The interpretation of the key findings is outlined in section 5.2 in Chapter 5.

The results of the study, from the broader perspective of the RQs, indicate that MTE and SWB correlate. Specifically, the External and Introjected motivation show a negative correlation with SWB, and intrinsic motivation shows a positive correlation. Integrated and Identified motivation and SWB did not present significant results. As stated in the review of literature, exercise positively correlates with WB (Ryan and Frederick, 1997; Briki, 2018; Nezlek *et al.*, 2018), whilst positively motivated goals have a positive impact on WB (Sheldon *et al.*, 2004) and negatively perceived motivators have a negative influence on WB (Dawson and Thornberry, 2018). This study adds findings from a female demographic in the UK and illustrate the potential impact the initial MTE might have on SWB in the scope of exercise effects. The motivators and barriers that women reported informed those results by adding rich qualitative data. Both, reported motivators and barriers to exercise, were grouped under physical body, mental health and mindset, and connectedness to others. These findings were confirmatory of existing research, by reporting such motivators as body image (Homan and Tylka, 2014), health (Schutzer and Graves, 2004), mental health and feeling good (Frederick and Ryan, 1993; Deci 2012), and company of others (Othman *et al.*, 2022). Motherhood, and specifically the positive effects on parenting, was reported as an additional motivator. Previous research offers limited material on motherhood as a motivator to exercise. Furthermore, the motivator of body image was

reported more by younger women than older women, suggesting that this motivator becomes less important with age. An alternative explanation, as based on the themes emerging from the qualitative phase 2 analysis, could be SA. The older participants reported change in mindset and attitude towards their MTE and WB, with increased knowledge and awareness of self.

Furthermore, the barriers, equally supporting existing research, were reported as health (Clarke *et al.*, 2015; Ingledew and Markland, 2008), mindset (Bredahl *et al.*, 2015) and time (Welch *et al.*, 2009). Interpreted as a positive barrier, was the reference to the agency a woman might have over her exercise-related behaviour, and the liberating choice to not exercise when she does not feel like it. This was reported by older women and linked to self-knowledge and SA, which allowed for this attitude to be adopted without guilt. The findings suggested that SA might play the role of a moderating variable. However, because SA increases with age (Carstensen, 2006; Leary and Tangney, 2011), this study cannot prove or disprove whether it is age or SA that affect the attitude to exercise.

Whilst MTE and age did not show a significant correlation, SWB and age did. This could indicate that a sense of WB increases with age. Qualitative data added an explanation, illustrating that women report this shift to be linked to SA. Once again, this suggests that SA can play a role as a variable in attitude towards one's WB.

The findings addressed the research aims, by providing some additional knowledge regarding how women are motivated to exercise and what their view is of their WB. The findings suggest that it might not be just exercise itself that leads to a heightened sense of WB as reported by existing literature, but that the initial MTE might play a role. The potential variable of SA emerged as an unexpected result and

provided the author with an impetus for future research. The address of the study aims was satisfactory, within the scope of the project and its limitations. The choice of methods has proven equally successful, within the limits of what could be reasonably expected of a study of this scope. The project findings offered some contribution to research and to professional practice, as outlined in the following sections.

6.3 Contribution to research

The contribution to research has been noted in section 6.2, in relation to each individual variable within the topic of this study. The contribution lies in the new confirmatory material added to the existing literature and in the proposition of a new potential variable of SA. The study largely confirms existing research, and its scope does not allow for a challenge of existing theories, as only broader research could achieve this.

It had been noted in previous sections that there are many theories and aspects of theories that relate to the topic of this project. Not all could have been included in the investigation however those that were stated in the Literature Review make an important contextual point to the project. Further research might benefit from combining the findings here in relation to other previously investigated theories.

The dissemination of the results is additionally planned to take the form of a contribution to the existing literature, by publication of academic articles in academic journals. The journals catering to the field of the project are amongst others: *Applied Psychology*, *Health and Well-being*, *Journal of Happiness Studies*, *Gender, and Society*, *Psychology of Women Quarterly*, *Journal of Exercise Science and Fitness*

and others. To inform the academic community, an academic-style article, with presentation suitable for publication in an academic journal would be needed. The strategy for the post-doctoral work is to publish an article in a suitable format, however there is no clear plan at present, as further academic experience and preparation would be required.

Another planned format of dissemination is an oral presentation to an academic audience at conferences and forums. To date, the author has taken part in various verbal presentations at the UoS, supported by a Research poster (Appendix B). The faculty of Health and Well-being accommodated a 20-minute talk and question time as part of their research presentation platform in March 2022. A regional three-minute presentation competition, including five universities took place in June 2022, and UoS was represented by the author and two other presenters (Appendix C). Furthermore, the author has been applying to topic-relevant conferences, by submission of an Abstract and aims to continue post-doctoral study.

6.4 Research limitations

The limitations were anticipated, as outlined in Chapter 1, to be grounded in the scope of the research. The critical reflection on the shortcomings of the study, which emerged during and at the end of the research process, has proven the limitations to be broader.

The Literature Review chapter outlined variety of theories and theoretical aspects which could have been investigated within this study and would yield data beneficial to the coverall contribution. Theories such as TBA, aspects of self-efficacy,

self-regulation aspects outline in Chapter 2 and others, have provided useful and important context to the project. Due to the scope of the project, the size and time restrictions, not all the outlined theoretical concepts could be included in the investigation.

The sampling method, whilst suited to this study, limited its generalisability. A sample with more equally represented age groups and ethnic backgrounds would rectify the problem. The sample size, whilst based on existing validated research in the field (Markland, 2009; Lovell *et al.*, 2016) provided limited data access.

Time and financial constraints presented a limit to the time and budget that could be devoted to the project. The shortcomings of this study were justified, given the relative constraints of the project. However, the outline of the scope does not present limited credibility of the study, but an opportunity to understand the potential contribution that future research could offer. The value of this study therefore also lies in the recommendations for further academic research devoted to the topic of exercise motivation and WB as reported by women in their rich stories. It would form an additional contribution to the understanding of how a female demographic navigates the terrain of exercise and WB, and how professional practice within the health and fitness industry and public policies could aid that process.

The fact that some respondents might not answer truthfully, can also present a limitation to survey and interview-based investigation. This was managed by screening of the data, where in phase 1 any incomplete questionnaires, and those that presented potentially questionable response were excluded from the data analysis. Also, not all participants might tell the truth when asked about their exercise habits or

WB attitudes. Whilst in this case it is believed that all respondents and participants felt comfortable to take part, it is noted that the notion of truth might present a limitation.

The age distribution was unequal, in that the two middle age groups were represented by 47.3% and 41.1% respectively, and the youngest and oldest age groups by 7.5% and 4.11% respectively. The unequal distribution in age groups may affect the generalisability of the findings. However, the conclusions are still recommended as presented. There is a further limitation noted regarding the absence of the 75+ age group, which if represented would contribute to richer data. Furthermore, the fact that the age group 75+ was not represented at all was incorporated into the data analysis and only the four represented age groups were considered in the results.

The ethnic background question showed that 82.2% of the participants identified with White British ethnic background. Overall, there were 18 ethnic backgrounds represented by the sample. To address the unequal representation, the qualitative phase 2 collected data from a similar representation as the quantitative phase 1, therefore conclusions for both phases reflect similar representations. The limitation here is more significant and it ought to be considered that the results based on ethnic background are not generalisable to other or all ethnic groups. However, since the UK population shows a similar split across different ethnic backgrounds, the study's sample remains a valid representation of the female UK demographic (ONS Census, 2012). Future research recommendations reflect the stated limitations of the demographic data.

The main part of the questionnaire was composed of the adapted BREQ 3 (five sub-sets) (Bangor University, 2022), and questions adopted to assess levels of SWB

(OECD, 2013). The limitation, specifically related to the quantitative data results from the adapted BREQ 3, leads to future research recommendations, related to the negative loading of some questions. Bangor University, which offers the use of BREQ 3 as an instrument of measure, acknowledges the positive versus negative loading of the questions in some of the subsets of the BREQ 3 as a whole instrument in comparison with previous versions. It states previous research which used and validated formats of the scale (Ingledew, Markland and Ferguson, 2009; Markland and Tobin, 2010). The sub-sets used in this study were tested by Cronbach's Alpha and data were further tested accordingly, the results of which are reported in Chapter 4. A potential limitation associated with the BREQ 3 is the negative loading of some of its questions, but not in others. Future research might consider not using the whole instrument in the inferential statistical tests, but instead differentiating the sub-sets. This suggestion would need validation.

The main section of the questionnaire also included questions regarding self-reported levels of WB. The questions were adopted from OECD (2013). The questions were selected based on their proven validity and for the phraseology used. A pilot study established that the original question format in American English, as based on CSDT instruments of measure, was not well received by participants. A potential further limitation may be that not all participants might tell the truth when asked about their exercise habits or WB attitudes. It would be of interest to see, therefore, if self-reported levels of WB correlate with other measures, which could cross-reference answers and establish a valid pattern for further testing.

The researcher's subjective interpretations of the qualitative results are, of course, also noted as a possible limitation of this study. However, the researcher took

conscious care to ensure objectivity and reflexivity during the whole process of this project, to create valid outcome. As stated by Saunders, Lewis and Thornhill (2016, p. 390) the “subjective approach to interviewing recognised the central role of the interviewer in the process of constructing meaning and the need for reflexivity, to reflect on and evaluate his or her approach to interviewing”. Equally, the use of TA was subjective and produced results which were hindered by the positioning of the researcher. The methodology and applied methods have been carefully researched and are outlined in detail on in the Methodology chapter. Despite all careful preparation the results are, to an extent, a product of the researcher's interpretation. This is noted as one of the limitations of the study and should be considered when engaging with this study's findings. Further to the qualitative data collection, the length of the semi-structured interviews was 20 minutes and it had been noted that longer time devoted to the interviews would have likely produced more data.

Previous sections have considered the potential issue with trustworthiness and bias as related to the qualitative analysis process. The analysis had been completed by the author and no further trustworthiness methods have been employed. This, in line with need for reliability of the findings, can be considered a limitation of the project. Earlier sections of the thesis concerned with the design prior to applied methods, consider all four criteria of trustworthiness as summarised by Stahl and King (2020) and further additions by Ryan, Coughlan and Cronin (2007).

Most research limitations can be used as a further impetus for future research, as outlined in next section.

6.5 Recommendations for future research

The recommendations for future research have been tentatively mentioned throughout the Discussion chapter. In general terms, the correlation between MTE and WB in a female sample has been by no means investigated exhaustively. Further attention would yield beneficial new data on the topic and contribute to existing literature.

The demographic data showed scope for a more thorough focus on wider representation of age groups and ethnic backgrounds. Future research might benefit from the usage of a different age demographic question as based on the GSS (2020) grouping. Similarly, it is recommended that further research considers incorporating a larger sample of the UK female population, expanding on the quantitative aspect of this study. A larger sample could contribute data from a wider range of ethnic backgrounds. Additionally, some correlations reported in this project were not significant, if replicated within a larger sample the outcomes may differ. Naturally, the topic if investigated within other genders would also provide a greater understanding of the problem.

The WB aspect of this study's investigation was assessed effectively by the OECD (2013) questions. Whilst further research might consider other formats of self-reported WB questions within a questionnaire, this project found the OECD (2013) questions reliable and contributory of valid data. Based on the results of the project, further investigation might consider SA as a possible variable of behavioural change in women within a larger sample, and the inclusion of MTE when researching exercise effects on WB.

Within the qualitative aspect, the time dedicated to each interview, if extended, would also yield more data, albeit the participants' motivation to take part might be negatively affected. Overall, the methods used were satisfactory, suited the project and resulted in a logical reporting of results. A future research recommendation is to consider mixed methods as a valid and valuable solution.

The software packages used in this project were all satisfactory and in general terms contributed to effective data management and analysis. It is noted that the scope of the information technology within academic research software services is growing and improving. Therefore, whilst Qualtrics for questionnaire design and distribution, NVivo for qualitative data management and analysis, and SPSS for quantitative analysis were not considered a limitation in this study, further research might consider more up-to-date software available in future.

The author aims to be an active part of future research within the topic and within social sciences overall. The undiscussed outcome of the qualitative phase 2 data analysis, specifically the themes of 'COVID 19' and 'Feminism', is recommended material for research of MTE or WB within the female demographic in future. These themes emerged within the interviews in relation to both, MTE and WB. There is clearly scope for further investigation, and whilst no active plans are in place, the author aims to include further research in their post-doctoral academic work and professional practice.

6.6 Dissemination of results and contribution to professional practice

The applications of research findings can, as part of the Professional Doctorate

project, be two-fold. This would be as a contribution to existing academic research and as the dissemination of findings within the researcher's field of profession. When considering the dissemination of a research study's findings, it is important to note the origins of the study and the researcher's background. As stated in the Introduction chapter, this project has been a part of the Professional Doctorate programme, and as such the initial interest in the research topic was grounded in the researcher's professional background. Specifically, within the Health and Fitness industry, as a Well-being Consultant at the time of this writing. Given this project has investigated the MTE and SWB in adult women, the dissemination of findings within the professional practice is planned as follows. The wealth of knowledge provided by the participants in the qualitative phase could provide additional help to professional practice regarding how fitness instructors and personal trainers approach their clients and structure exercise sessions. The notion that some clients might perceive the expectations placed upon them, albeit with good intentions to optimise their physical fitness, as demotivating is an interesting addition to the impact on professional practice. Furthermore, the inclusion of interdisciplinary teams to aid patients and clients on their journey to optimise well-being could be considered in practice. The many restrictions to this set up, mainly financial in context of leisure centres or other less financially able platforms, would need to be addressed.

An effective strategic approach to dissemination of findings incorporates direct contact with some of the sub-groups of the community of practice (Fulton *et al.*, 2013) and dissemination within suitable professional platforms to inform wider audiences of the study findings. Whilst the initial impetus for the project was based in professional practice, it was not based at a place of work, as is common for professional doctorate

studies. Therefore, no specific report on the project was needed. However, those within the researcher's current teams of health and WB practitioners with potential interest in the study findings, will be offered the information in variety of other suitable ways.

The education of Health and Fitness industry practitioners takes place via either professional courses, which are pre-requisites for accepting a specific job in the industry, or within the place of work, where an employer offers further education to the employees. The standards of education in the industry, as mentioned above, is currently standardised by CIMSPA. The courses provided for such professional positions as Fitness Instructor or Personal Trainer are grounded in theories which evidence the need for self-compassion, empathy on behalf of the professional as well as understanding of the context of client's motivation to exercise. The theories have been noted in section 2.4.2.2. The author oftentimes provides services to sports and fitness centre operators, within the scope of continuing professional development (CPD) for their employees. Current education modules for personal trainers and fitness instructors do in most cases include stages of behavioural change and importance of client expectations and CPD modules would further benefit from this inclusion. The dissemination of the findings to fitness and sports professionals is therefore planned to take place via CPD courses and workshops offered to sports and fitness clubs. Hardcastle *et al.* (2015, p. 1) reported that "motivating people disinclined to engage in health behaviour presents a significant challenge to public health practitioners", which agrees with the author's professional experiences and adds further impetus for improvement in the sector.

The addition to the current CPD education would be grounded in the findings. Exercise professionals might welcome additional knowledge and understanding the complexity of exercise behaviour in women. The message then would be not to just pay attention to exercise itself but encourage the female audience to assess their quality of motivation in relation to the prescribed exercise and the level of joy the exercise might bring. A client who is externally motivated is unlikely to adhere to exercise long-term (Ingledew and Markland, 2008) or to see exercise as a positive experience and their sense of WB could be adversely affected. If, as exercise professionals, we remain conscious of these relationships and implement the knowledge in practice, the overall outcome could be positively influenced. Whilst there will always be assumptions upon which we base our professional conduct, even with the utmost aim to be reflective, it would be a valuable addition to the fitness professions to know more about how motivation reflects on a woman's overall SWB. incorporating mindfulness as a WB practice (Richards, Campenni and Muse-Burke, 2010; Klussman *et al.*, 2020) adjacent to exercise, has the potential to increase SA (Wootton and Horne, 2015) and the ability to evaluate one's motivation. Thus, increasing the likelihood of exercise adherence as well as increased WB. The results, when disseminated, could contribute to a shift in the existing policies to incorporate the acknowledgement of the female client as a complex being. The mindful design of exercise prescription could contribute to an increase in enjoyment of the prescribed exercise, and hence adherence to the activity and a rise in self-reported WB. This would in turn lead to a healthier and happier population, and to overall success of the individuals in the fitness associated professions. Additionally, to implement the complex array of focus on aspects of physical exercise, combined with sports

psychology and such findings as the importance of self-awareness in exercise environment, multidisciplinary teamwork could be considered. The cost and sourcing of relevant specialists might present a challenge for clubs, and similar platforms, with lesser financial backing. However, with the aim to aid all our clients and exercise participants, the notion of multidisciplinary team is sound. Fitness Instructors and Personal Trainers could then focus on their field specialty, as could nutritionists, physiotherapists and osteopaths, leading to overall service with increased potential to deliver positive results.

Furthermore, the researcher is a frequent presenter of Well-being Workshops within corporate settings, speaking to female audience of employees with varied backgrounds, and workshops within the fitness industry such as sports clubs. In that format the presentation is oral and followed by some form of physical exercise interaction. The study findings are planned to be integrated as part of these oral presentations, following the successful completion and defence of the thesis. Within such workshops the female audience would be presented with material incorporating the study findings, and it is hoped that they would benefit from information regarding our own agency over SA in relation to exercise and WB. The presentation would be suitably formatted to the platform and audience and is unlikely to include an academic style or format.

It has, from the start of this project, been the intention to help establish ‘learning goals’ rather than ‘performance goals’ (Utman, 1997) in the exercise behaviour of a client and the professional progress of the practitioner. What format this would take is a question which requires further time and planning. However, this approach could help to establish a view of physical activity as enjoyable and allow external motivators

to be met with more resilience. Essentially assimilating a state of Flow (Csikszentmihalyi, 1990), which would set intrinsically motivated activities at an advantage. This links to MacLeod, Coates and Hetherton's (2008) conclusions of increased WB, by learning goal setting and planning skills. The community of practice (Fulton *et al.*, 2013) has some sub-groups, catering for which is planned via other platforms, including talks and conferences, and professional journals such as *OmYoga* and *PlanetMindful*. Once more, this is expected to form part of the post-doctoral work strategy.

In regard to the dissemination of the study's findings within the world of academia, the author plans as follows. This study, once submitted and defended at Viva Voce, is aimed to provide material for an academic journal article, post conferment of the author. In condensed format this study is planned to be presented to the academic community via peer reviewed platform. This will provide a way to share the findings with the academic community and to contribute to the existing literature in a true sense via publishing.

Additionally, the author aims to conduct further research enhancing this study's findings, specifically in collaboration with leadership behaviours researchers. The proposal for future research is in its initial stages at the time of this writing.

The author is an active member of both the academic and professional communities, and as such can plan and deliver the above with confidence. The process of this project has also influenced the researcher's outlook in general terms. The reflexivity demanded by the project aided the professional transformation to a more reflective and less action-motivated practitioner. The personal journey through this project has enriched the author's personal growth, which during the process of the

project organically followed the perpetual cycle of work - education - personal development, without the conscious knowledge of existing theories on the subject. The influence of the project is therefore also on the researcher as a professional, affecting the style of working, managing, and presenting with more reflexivity and SA.

The research, as summarised above, contributes to both the academic research and professional practice.

6.7 Closing summary

And so, as the story began over two decades ago with an interest in exercise and WB, based on personal experiences and later professional practice, it has now gained another facet. The conducted academic research had reported results which contributed to the practice-based knowledge and to existing academic literature. Specifically, it added some new knowledge regarding the correlation between MTE and SWB, age and SWB, and reported on the varied motivators and barriers to exercise UK women might experience throughout their adult life. Furthermore, any changes that the participants noted, whether in motivation or SWB, have been contributed to age and SA. However, SA cannot, in this study, be proven or disproven to be a moderating variable. Nonetheless, the qualitative findings indicate both, MTE and SWB, to be either directly or indirectly influenced by it. Future research is anticipated to benefit the field by investigating the effects of SA on MTE, and further investigate the correlation between MTE and SWB in women, as an addition to the existing literature reporting the positive correlation of exercise and WB.

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Appendices:

Appendix 1: Questionnaire (Quantitative phase 1, Qualtrics)

Q1. Please indicate which age group you belong to:

- ○ 18 - 24
- ○ 25 - 44
- ○ 45 - 64
- ○ 65 - 74
- ○ 75 +

Q2. Please indicate which gender you identify with:

- ○ Female
- ○ Male
- ○ Other / Please specify _____
- ○ Prefer not to say

Q3. Which ethnic group do you identify with?

Choose one option that best describes your ethnic group or background:

- ○ White English/Welsh/Scottish/Northern Irish/British
- ○ Irish
- ○ Gypsy or Irish Traveller
- ○ Any other White background / please specify: _____
- ○ White and Black Caribbean mixed ethnic group
- ○ White and Black African mixed ethnic group
- ○ White and Asian mixed ethnic group
- ○ Any other Mixed/Multiple ethnic background / please specify: _____
- ○ Indian
- ○ Pakistani
- ○ Bangladeshi
- ○ Chinese
- ○ Any other Asian background / please specify: _____
- ○ African
- ○ Caribbean
- ○ Any other Black/African/Caribbean background / please specify: _____
- ○ Arab
- ○ Any other ethnic group / please specify: _____

Q4. Overall, how satisfied are you with your life nowadays?

Not at all Completely

0 1 2 3 4 5 6 7 8 9 10

Q5. Taking all things together, how happy would you say you are?

Not at all Completely

0 1 2 3 4 5 6 7 8 9 10

Q6. Please rate the following statements about exercise:

	Definitely not true	Probably not true	Sometimes true	Probably true	Very true
It is important to me to exercise regularly.	○	○	○	○	○
I exercise because it's fun.	○	○	○	○	○
I feel guilty when I don't exercise.	○	○	○	○	○
I exercise because it is consistent with my life goals.	○	○	○	○	○
I exercise because other people say I should.	○	○	○	○	○
I value the benefits of exercise.	○	○	○	○	○
I enjoy my exercise sessions.	○	○	○	○	○
I feel ashamed when I miss an exercise session.	○	○	○	○	○
I consider exercise part of my identity.	○	○	○	○	○

I take part in exercise because my friends/family/partner say I should.	○	○	○	○	○
I think it is important to make the effort to exercise regularly.	○	○	○	○	○
I find exercise a pleasurable activity.	○	○	○	○	○
I feel like a failure when I haven't exercised in a while.	○	○	○	○	○
I consider exercise a fundamental part of who I am.	○	○	○	○	○
I exercise because others will not be pleased with me if I don't.	○	○	○	○	○
I get restless if I don't exercise regularly.	○	○	○	○	○
I get pleasure and satisfaction from participating in exercise.	○	○	○	○	○
I would feel bad about myself if I was not making time to exercise.	○	○	○	○	○
I consider exercise consistent with my values.	○	○	○	○	○
I feel under pressure from my friends/family to exercise.	○	○	○	○	○

Q7

Thank you for completing the survey questions. If you wish to take part in the second stage of our study - a short interview with the researcher about your personal motivators and barriers to exercise, and about your well-being - please enter your email address.

_____

Appendix 2 : Participant Information Sheet (Quantitative phase 1, Qualtrics)

Participant Information Sheet

You have been invited to participate in a research study titled above. Our aim is to investigate the relationship between the motivation to exercise and overall sense of well-being in women. Any female over the age of 18 and residing in the UK is invited to take part in the study. The associated survey takes approximately 5 minutes to complete. In the context of this study, the word 'exercise' is meant as your preferred activity, from a gentle walk to a vigorous exercise class.

All information that you decide to provide will be confidential. Collected data will be used for research purposes only. You are free to withdraw your participation during the survey at any time. Additionally, you can withdraw your consent by contacting the researcher within two weeks of participation and your data will not be used in the study. Your participation in this study does not carry any foreseen disadvantages or risks to you. Whilst completing this survey might not benefit you personally, it will contribute to the understanding of the topic.

The second stage of the study, in which you can but do not have to participate, consists of a short interview about your personal motivators and barriers to exercise, and your well-being. Please indicate at the end of the survey whether you wish to be contacted by the researcher for the follow up interview.

This study is conducted by Petra Vojnova as part of a doctoral research. The University of Sunderland Research Ethics Committee has reviewed and approved this study. For further information please contact the researcher on: petra.vojnova@research.sunderland.ac.uk, or the University of Sunderland Principal lecturer for Academic Development, Dr Angela Cartwright: angela.cartwright@sunderland.ac.uk

In the survey, please give answers as the true reflection of your life and not as how you think your life ought to be. Treat each item separately from every other item.

Note: To limit any potential bias, this research is not externally funded.

Please print or save a copy of this Participant Information Sheet for your records

Appendix 3: Consent Form (Quantitative phase 1, Qualtrics)

Consent Form

1. I am over the age of 18
2. I have read and understood the Participant Information Sheet and I consent to participate in this survey by adding my name below
3. I am a voluntary participant with the right to withdraw from the study, without giving a reason, at any time during the survey
4. I understand that I also have the right to withdraw my participation in the study by contacting the researcher within 2 weeks of completing the survey

Please type your name below:

Appendix 4: Figure 12: Bar chart: age group distribution within population sample

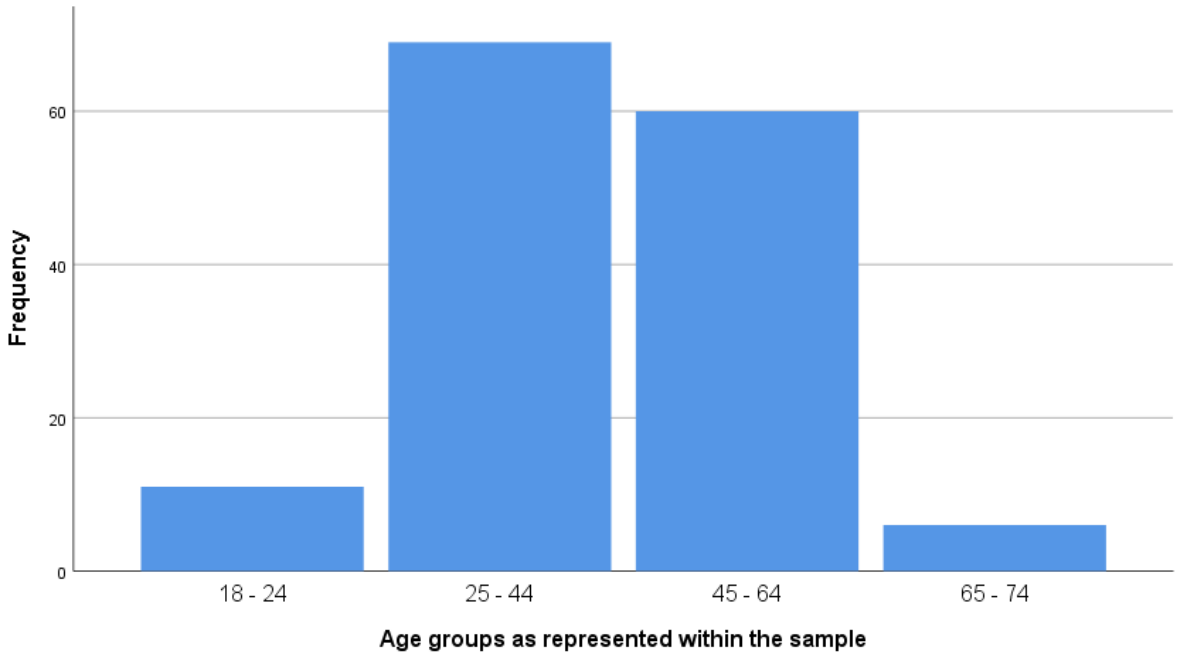


Figure 12: Bar chart: age group distribution within population sample

(Source: SPSS analysis by the author)

Appendix 5: Table 7: Summary of correlations in RQ 1 inferential statistics between Motivation to exercise and Subjective Well-being

Table 8: Summary of correlations in RQ 1 inferential statistics between Motivation to exercise and Subjective Well-being

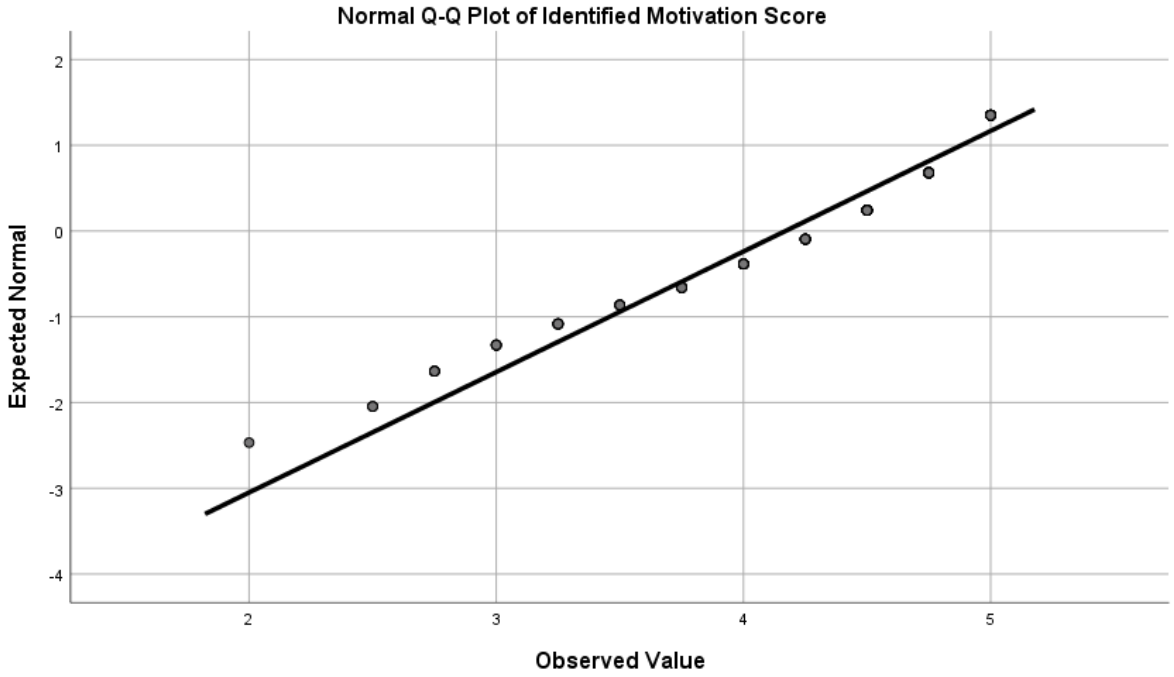
	External Motivation	Identified Motivation	Introjected Motivation	Integrated Motivation	Intrinsic Motivation
Well-being	r_s = -.201*	r_s = .028	r_s = -.232**	r_s = .134	r_s = .170*
	p = .015	p = .738	p = .005	p = .108	p = .040

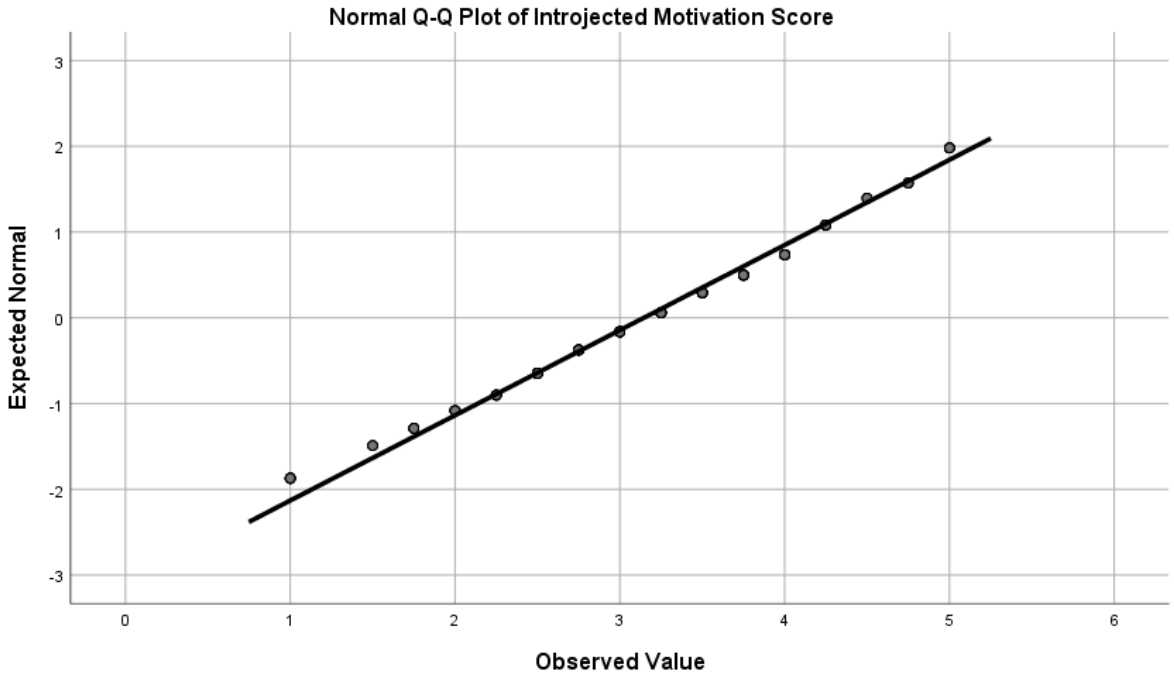
* Correlation is significant at $p < 0.05$

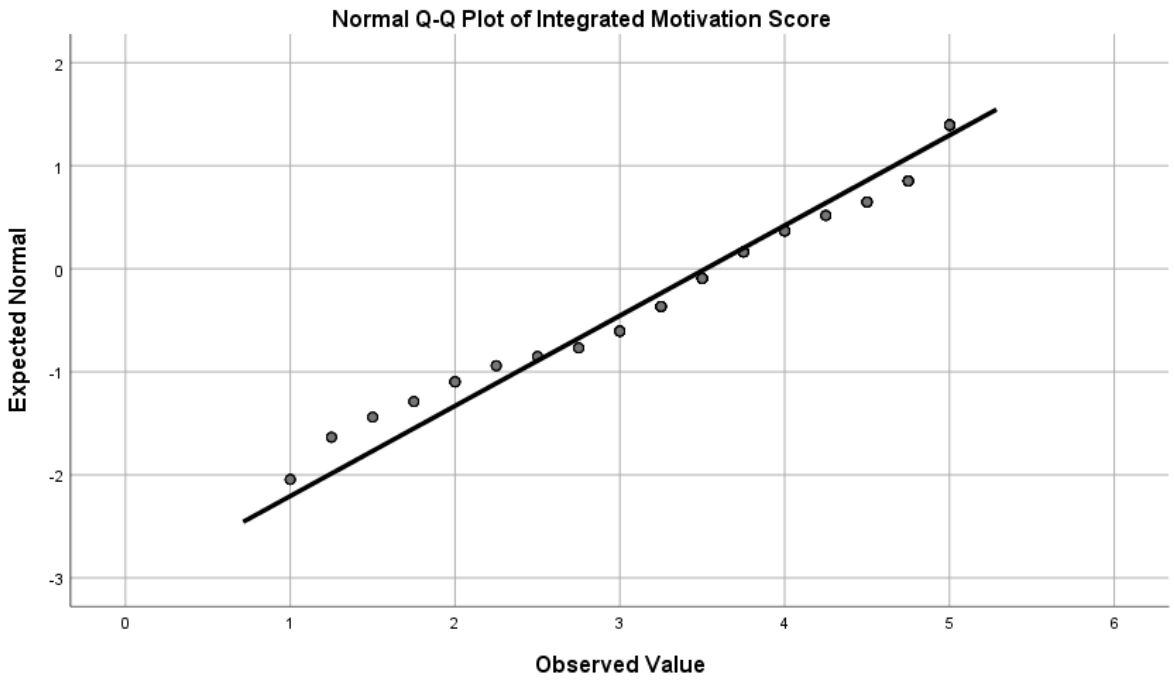
** Correlation is significant at $p < 0.01$

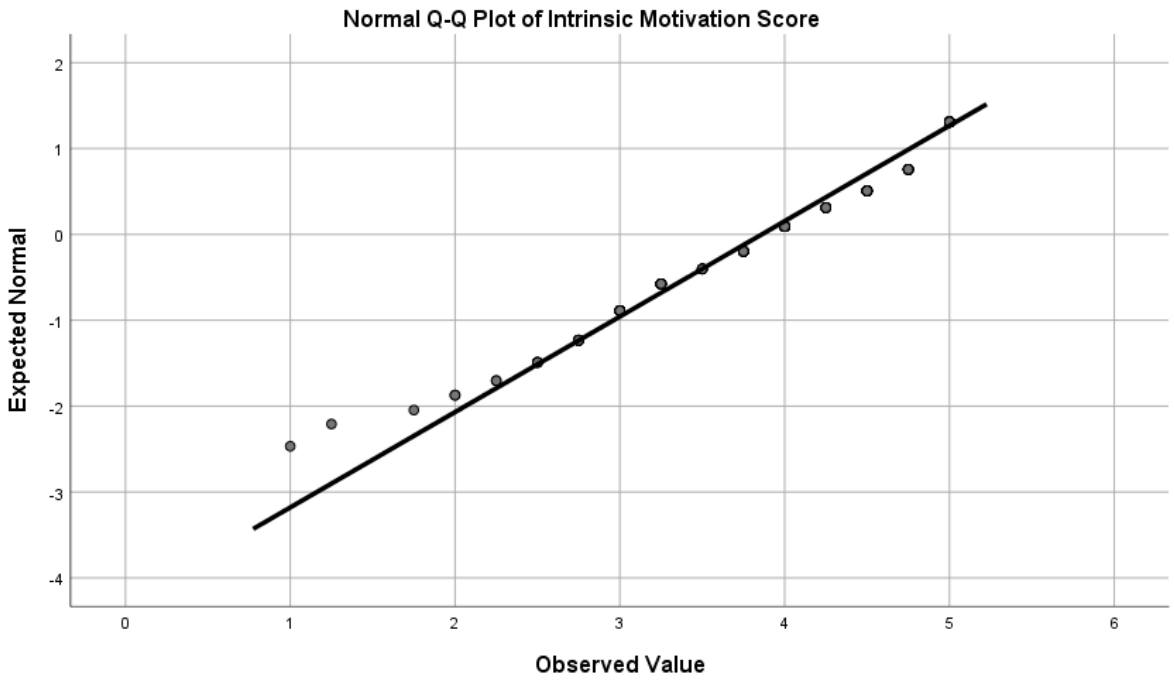
(Source: SPSS analysis by the author)

Appendix 6: Figure 13: Q-Q Plots






Normal Q-Q Plot of Integrated Motivation Score
Expected Normal
Observed Value
2
1
0
-1
-2
-3
0
1
2
3
4
5
6


Normal Q-Q Plot of Intrinsic Motivation Score
Expected Normal
Observed Value
2
1
0
-1
-2
-3
-4
0
1
2
3
4
5
6

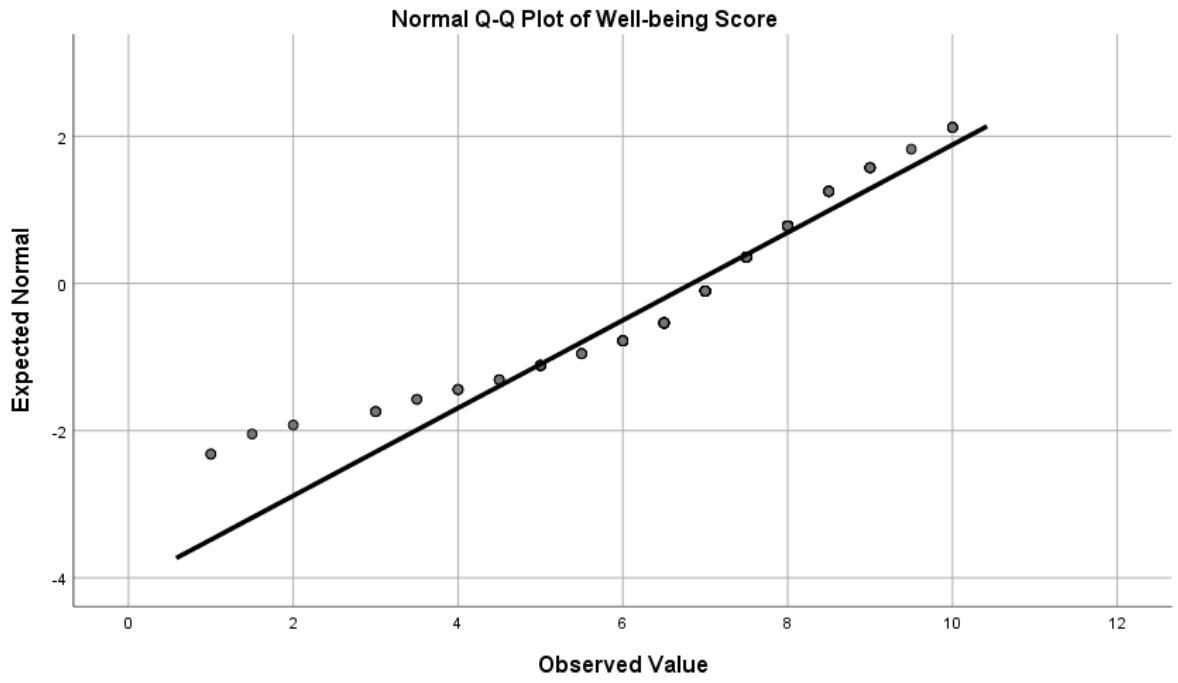


Figure 13: Q-Q plots

(Source: SPSS analysis by the author)

Appendix 7 : Participant Information Sheet (Qualitative phase 2)

Woman's motivation to exercise and her sense of well-being.
Research study phase two: short interview with the researcher.

Based on the information you have given in the first phase of this research you have been invited to participate in a short interview with the researcher.
The aim is to investigate the relationship between motivation to exercise and overall sense of well-being in women. You will be asked questions about your personal motivators and barriers to exercise, and your well-being. In the context of this study, the word 'exercise' is meant as your preferred activity, from a gentle walk to a vigorous exercise class.
All information that you decide to provide will be confidential. The interview will be audio-recorded. Collected data will be used for research purposes only and data storage protocol will adhere to University of Sunderland guidelines. You are free to withdraw your participation by ending the interview at any time. Additionally, you can withdraw your consent by contacting the researcher within two weeks of participation and your data will not be used in the study. Your participation in this study does not carry any foreseen disadvantages or risks to you.
This study is conducted by Petra Vojnova as part of a doctoral research. The University of Sunderland Research Ethics Committee has reviewed and approved this study. For further information please contact the researcher on:
petra.vojnova@research.sunderland.ac.uk, or the University of Sunderland Director of Post Graduate Research, Dr John Fulton: john.fulton@sunderland.ac.uk
To limit potential bias, this research is not externally funded. Please print or save a copy of this Participant Information Sheet for your records.

Petra Vojnova Date: ……

Appendix 8: Consent Form (Qualitative phase 2)

Woman's motivation to exercise and her sense of well-being.
Research study phase two: short interview with the researcher.

1. I am over the age of 18
2. I have read and understood the Participant Information Sheet and I consent to participate in this study by taking part in a short interview with the researcher
3. I am a voluntary participant with the right to withdraw from the study at any time during the interview without giving a reason
4. I understand that I also have the right to withdraw my participation by informing the researcher within 2 weeks of completing the interview, and my data will not be used in the study.

Signed: _____
Print name: _____
Date: _____

Participant Code: _____
(Your name, along with your participant code is important to help match your data from two questionnaires. It will not be used for any purpose other than this.)

Witnessed by: _____
Print name: _____
Date: _____

Appendix 9: Interview Schedule Aide-memoire

Woman's motivation to exercise and her sense of well-being.

Research study phase two: Interview schedule to be used as Aide-memoire

- arrival
- positionality (physical)
- introduction of the research & Reiteration of purpose
- provide Participant Information Sheet / confirm receipt of electronic copy
- collect signed Consent Form
- ethics: confidentiality and anonymity
- ask participant whether they are comfortable and agree to begin
- opening questions
- main body questions
- wrapping up: would the participant like to add anything?
- thank you

INTERVIEW QUESTIONS:

1. what are your main motivators to exercise?
2. have those motivators changed over time for you?
3. what are your main barriers to exercise?
4. have those barriers changed over time for you?
5. what does well-being mean to you?
6. has your attitude to your well-being changed over time, and if so, how?

PROBING QUESTIONS:

- can you give an example?
- why do you think that is?
- what, in your opinion, prompted that change?

Appendix 10: Interview Contextual Data sheet

Woman's motivation to exercise and her sense of well-being.

Research study phase two: short interview with the researcher.

Participant Code: _____

Date and time: _____

Location of interview:

The setting of the interview:

Background information about the participant:

Immediate impression of how well it went:

Appendix 11: Table 9: NVivo Interview Codes

Code Name	Description	Code type	Interview total	Reference total
BAR-ACCESS	Facilities access / equipment	Priori	4	5
BAR-AWR	Barriers & self-awareness	In Vivo	2	4
BAR-SOC-COND	Social conditioning / barrier	Priori	4	17
BAR-FINANCIAL	Financial barrier to exercise	Priori	1	2
BAR-HEALTH	Health as a barrier	Priori	4	5
BAR-OLD	Barriers at older age	Priori	7	25
BAR-WEATHER	Weather as a barrier	Priori	1	2
BAR-YNG	Barriers at younger age	Priori	10	45
BEING-YOURSELF	Be yourself / Own your truth	In Vivo	6	14
BODY IMAGE	Aesthetics as a motivation	Priori	9	17
COMPASSION	Compassion / self and others	In Vivo	4	12
COVID	Covid 19 and exercise mot.	In Vivo	3	5
EXE-HISTORY	Women and sports in history	In Vivo	2	4
EXT-PRESSURE	Perceived external pressure	Priori	9	41
FEELING GOOD	Exercising to feel good	Priori	6	9
FEMINISM	Feminism/Comparisons	In Vivo	8	34
GROWTH-SELF	Learning/Personal growth	In Vivo	9	20
GUILT/FAMILY	Motherhood guilt	Priori	4	8
HEALTH-LONG	Healthy longevity / motivator	Priori	7	12
INCREMENTS	Incremental improvements	Priori	1	6
INT-PRESSURE	Perceived internal pressure	Priori	3	6

KIND-SELF	Kindness to self	In Vivo	2	3
MENTAL HEALTH	Sadness/Depression/Exercise	Priori	8	25
MOT- AWR	Self-awareness & motivation	In Vivo	9	29
MOT-HEALTH	Health & exercise motivation	Priori	4	4
MOT-OLD	Motivation at older age	Priori	7	56
MOT-PARENT	Motherhood as a motivator	Priori	3	5
MOT-SOC-INFL	Motivation & social influence	Priori	8	28
MOT-YNG	Motivation at younger age	Priori	11	65
PRIORITY/TIME	Barrier of Time/Prioritizing	Priori	8	20
PRS-REP	Personal responsibility	Priori	2	7
SELF-ACC	Self-acceptance	In Vivo	6	15
SELF-AWR	Self-awareness	In Vivo	11	101
SOCIAL-ACC	Social acceptance	Priori	2	2
STRUCTURE	Exercise routine as a motivator	Priori	2	4
TIREDNESS	Tiredness/Fatigue as barriers	Priori	4	8
TOGETHERNESS	Group exercise & commitment	Priori	8	30
WB-AWR	Well-being & self-awareness	In Vivo	9	47
WB-CALM	Calmness as well-being	Priori	5	10
WB-EXE	Well-being and exercise	In Vivo	7	17
WB-OLD	Well-being and older age	Priori	9	48
WB-SOC-INFL	Well-being & social influence	Priori	6	19
WB-YNG	Well-being and younger age	Priori	10	44
Total: 43 Codes				

(Source: TA analysis by the author)

Appendix 12: Research Questions and Hypotheses

RQ 1. What is the relationship between the motivation for exercise and overall subjective well-being in women? (Quantitative)
RQ 2. What are the common motivators and the barriers to exercise for women? (Qualitative)
RQ 3. Does woman's age play a role in reported dominant type of motivation to exercise? (Quantitative)
RQ 4. Does woman's age play a role in the reported level of well-being? (Quantitative and Qualitative)

Hypothesis 1.1: Reported external motivation and introjected motivation to exercise correlate with lower reported subjective well-being in women.
Hypothesis 1.2: Reported identified and integrated motivation to exercise correlate with higher reported level of subjective well-being in women.
Hypothesis 1.3: Reported intrinsic motivation to exercise correlates with higher subjective well-being in women.
Hypothesis 2.1: Motivators to exercise vary throughout woman's life.
Hypothesis 2.2: Barriers to the motivation to exercise vary throughout woman's life.
Hypothesis 3.1: Age plays a role in reported type of motivation to exercise.
Hypothesis 4.1: Age plays a role in reported levels of well-being.
Hypothesis 4.2: Woman's attitude towards her well-being changes with age.

Appendix A: Ethical Approval Letter

University of Sunderland

Downloaded: 09/06/2021
Approved: 07/06/2021

Petra Vojnova
London Campus
Programme: Professional Doctorate Research

Dear Petra

PROJECT TITLE: Woman's motivation to exercise and her sense of well-being.
APPLICATION: Reference Number 009220

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 07/06/2021 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following documentation that you submitted for ethics review:

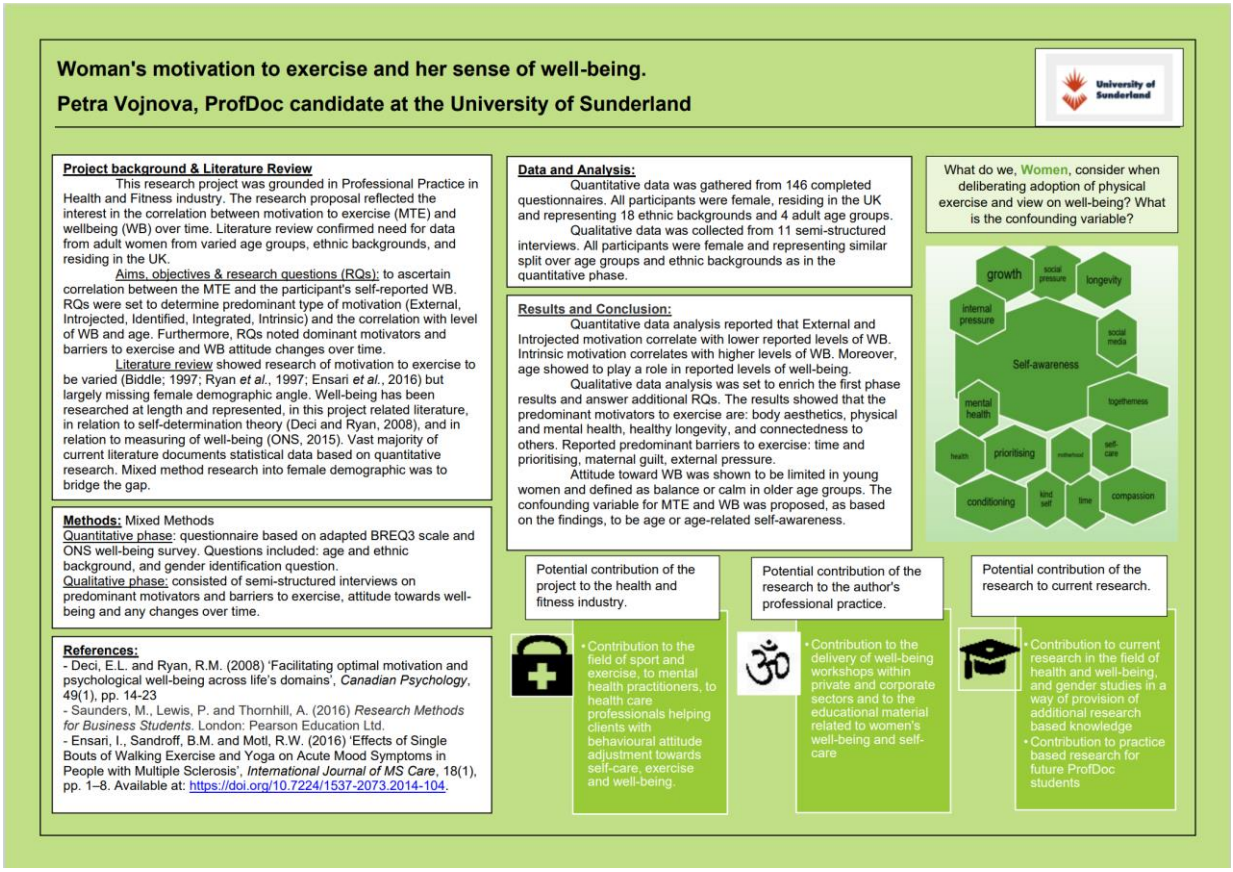
- University research ethics application form 009220 (form submission date: 17/05/2021); (expected project end date: N\A).
- Participant information sheet 1015785 version 1 (17/05/2021).
- Participant consent form 1015786 version 1 (17/05/2021).

If during the course of the project you need to deviate significantly from the above-approved documentation please email ethics.review@sunderland.ac.uk

For more information please visit: https://www.sunderland.ac.uk/research/governance/researchethics/

Yours sincerely

Appendix B: Presentation poster



Appendix C: Research presentation certificate