Usage guidelines

'Loneliness in the City': examining socio-economics, loneliness and poor health in the North East of England

Objectives: The aim of this study was to discover whether lower socio-economic status is associated with increased experiences of loneliness and isolation. The research subsequently determined whether this relationship impacted on health inequalities.

Study design: The study employed a cross-sectional, self-reported survey collecting information on loneliness, isolation and poor health (n= 680). The survey was administered through Sunderland District Council in 2016–2017 and data was analysed at the University of Sunderland.

Methods: The study employed a quantitative approach, and data was analysed using descriptive statistics, engaging in univariate, bivariate and multivariate levels of analysis.

Results: A number of significant findings emerged from the data analysis, linking lower socio-economic status to experiences of loneliness ($p = 0.000$) and social isolation ($p = 0.000$). When determining if social isolation and socio-economics had a detrimental impact on a person's health, no statistical association was discovered ($p = 0.098$). Yet, there was a significant relationship concerning socio-economic status, loneliness and poor health ($p = 0.026$).

Conclusions: The authors have identified a number of associations within the data with reference to isolation, loneliness and poor health. Therefore, participants from a lower socio-economic group experienced disproportionately high levels of social isolation and emotional loneliness when compared with other socio-economic groups. The data also demonstrates that participants who experienced loneliness, and were from a lower socio-economic background, were consistently more likely to report poor health than those from other socio-economic backgrounds.

Inequalities, socio-economics, annual income, isolation, loneliness, poverty

Introduction

The association between health inequalities and socio-economic status has been significantly documented over the past three decades 2[1, 2, 3, 4, 5,]. The Marmot review substantiates that employment and economic prosperity directly influence the UK population's health. Inequalities in health arise because of inequalities in the conditions of daily life. The conditions in which people are born, grow, live, work and age are fundamentally affected by inequalities of money, resources and power[3, 4]**Error! Bookmark not defined.**. The World Health Organisation suggests that our health is determined by a complex interaction between our individual characteristics, lifestyle, and the physical, social and economic environment which we occupy[6, 7]. Despite the commitment and implementation of policies from the government in England and Wales, the gap in health inequalities is widening within some geographical regions, particularly in the North of England[8, 5]. After the 2008 banking crisis, austerity measures resulted in increased economic deprivation which had a significant impact within the North East regions of England[9]. As Whitehead indicates, communities across the North East of England have seen a rise in health inequalities and premature deaths, when compared with the national average[8]. As Whitehead[8] suggests, the City of Sunderland, which is situated within the North East of England, was specifically identified as a geographical area of concern with regard to rising health inequalities. Sunderland has a population of approximately 277,000, and the Indices of Multiple Deprivation[10] indicate that 38% of the city's population live in areas that are among the 20% most disadvantaged across England, with the annual household income significantly lower than the national average. Hence, income is a key determinant of deprivation, and evidence shows that societies with a bigger gap between rich and poor have worse health outcomes overall [3].

Although there have been numerous studies linking socio-economics with health inequalities, very few studies have investigated the intersectional impact that socio-economics and loneliness have on poor health[11]. However, defining the concept of loneliness is not without its challenges. Studies in the UK and globally have used different methodologies to collect data on the concept of loneliness. Hence, it can be suggested that the concept of loneliness is a subjective interpretation of a person's day-to-day interactions, and is difficult to measure. In previous research, the concepts of loneliness and isolation have been somewhat interconnected and even misinterpreted. Dahlberg and McKee have attempted to clarify the concept of loneliness by referring to the 'emotional'[20]. They suggest that 'emotional loneliness refers to the absence of an attachment figure in one's life and someone to turn to' [20], thereby suggesting that 'emotional loneliness' is a subjective interpretation relating to the perceived quality of a person's relationships with others. Furthermore, Tanskanen and Anttila have attempted to clarify this definition further by separating the concepts of loneliness and isolation into different quantitative categories[21]. They suggest that social isolation and emotional loneliness are distinctly different analytical categories, where the first relates to concrete interactions and the second relates to subjective interpretations of emotional reactions to a person's environment. Tanskanen and Anttila suggest that 'social isolation is concerned more with environmental impoverishment or restrictions than with the individual's ability to create and maintain social relationships'[21]. From this perspective, social isolation is underpinned by environmental factors which relate to the breaking down of social networks. Therefore, emotional loneliness can occur due to social isolation because of a lack of contact with family members or friends, but it can also occur even when people do have significant contact with other social groups, but where there is a 'lack of desired quality of social engagement'[21]. From this perspective, an individual can also be socially isolated but not experience feelings of loneliness.

When investigating social isolation and emotional loneliness, a number of studies have illustrated the negative impact this experience has on public health. Previous studies indicate that having no social connections has an

increased effect on mortality that exceeds the impact of well-known public health risk factors such as obesity, physical activity and mental well-being, and has a similar impact to cigarette smoking [11, 12, 13, 14, 15, 16]. As Leigh-Hunt *et al.* indicate, there is a growing amount of literature linking loneliness and isolation to increasing health inequalities, but very few studies have investigated increased risk factors due to socio-economics [11]. Previous studies linking loneliness and isolation to health inequalities have predominantly examined a sample of older and retired participants [17, 18]. Studies on loneliness and isolation that have developed a more inclusive age range sample have predominately reflected on risk factors concerning age and gender, rather than socio-economics per se [19, 20, 21].

Methods

This article presents findings from a study examining the impact of loneliness and isolation on communities within Sunderland. The study was funded by Sunderland City Council in order to try to comprehend pathways into loneliness and/or isolation, and was conducted to improve and to develop effective services within the district. The research project was conducted over a one-year period, from September 2016 to September 2017. To collect data on loneliness and isolation a cross-sectional, mixed-mode method was developed, using a survey that could be completed online or in hard copy[25]. It was distributed in a variety of ways to ensure the inclusion of participants from a wide range of social demographics throughout the city; particularly to access socially-excluded populations. Firstly, an unrestricted self-selected survey was made available on Sunderland City Council's website[25]. This project had been widely publicised throughout the City of Sunderland, and residents could 'opt in' to complete the online survey. However, this approach was supplemented by a team of health visitors, third sector employees and social care professionals, who targeted diverse, and often socially excluded, populations from across the city [25]. Surveys were also made available in local services including, housing, health, criminal justice, libraries, education and immigration. In total, 680 participants took part in the research. Anyone living in the city was invited to take part in the study, whether they identified as experiencing loneliness and/or isolation or not, and in total 240 participants

self-identified as either experiencing loneliness, isolation or both; this was 35.3% of the sampled population. This allowed the team to make comparisons between the participants who identified as lonely/isolated and participants who did not (N = 440). The data was predominantly coded at nominal and ordinal level. The team used SPSS in order to analyse the results using descriptive statistics. Data was analysed by engaging in univariate, bivariate and multivariate analysis[22]. The team analysed the data using frequency tables at univariate level, and cross-tabulations at bivariate and multivariate level, to produce statistically relevant information[22]. At the bivariate and multivariate level, frequency distributions were analysed using a chi-square statistic (x^2) or where the expected count fell below five, a Fisher's Exact Test was used to confirm statistical significance. Data was considered significant if it fell below the 0.05 statistically significant threshold[22]. Only statistically significant data ($p \leq 0.05$) is used in the research findings.

Within this article, annual household income was used as the independent variable in order to discover if socio-economics impacted on participants' experiences of emotional loneliness and social isolation[20, 21]. When studying people's experiences of loneliness and social isolation, a number of complexities arose with reference to measurement. As research by Leigh-Hunt *et al.* illustrates, there are numerous methodological issues when examining previous research on loneliness and isolation[11]. In previous research, 'loneliness' has been used as an analytical category that incorporates aspects of both 'emotional loneliness' and 'social isolation'[19,23, 24]. Drawing on work from Dahlberg and McKee[20] and Tanskanen and Anttila [21], this study separated the two concepts of emotional loneliness and social isolation. Therefore, the study measured and defined 'emotional loneliness' as a subjective experience, based on strengths of relationships, whereas 'social isolation' refers to a lack of access to social networks within communities. It should be noted that full ethical approval was gained by the research team from Sunderland City Council and the host university before the research commenced.

Results: Social demographics

At the multivariate stage of analysis, the team discovered that there were no intersectional relationships between age, gender, sexuality and ethnicity with reference to loneliness and isolation. The project attempted to collect data on a wide range of social demographics to examine emotional loneliness and social isolation within Sunderland. Table 1 shows that the sample consisted of a relatively equal age range. The younger category represented participants aged between 17 to 44 years, which consisted of 29% of the sample. The older category of 60 years plus consisted of 34% of the sample. The largest category, at 38%, consisted of the middle-aged group who were 45 to 59 years. Unfortunately, the study did have a gender bias, as the majority of participants who completed the study were female at 69%, compared with male at 31%. With reference to sexuality, the vast majority of the group at 93% identified as heterosexual, compared with LGBT at 7%. This is consistent with the reported demographics of Sunderland, where 6% of the population come from a sexual minority background[10]. Furthermore, the vast majority of participants (98%) identified as being from a white ethnic group, with only 2% reporting they were from an ethnic minority background. Again, this is consistent with the ethnic demographics of Sunderland, which has a relatively small ethnic minority population at 4% [10].

Social demographics		%	N
Sex	Male	30.6%	205
	Female	69.4%	466
	Total	100.0%	671
Age	17–29	10.1%	66
	30–44	18.6%	121
	45–59	37.5%	244
	60–74	26.4%	172
	75+	7.4%	48
	Total	100.0%	651
Sexuality	Straight/heterosexual	92.7%	613
	LGBT	7.3%	48
	Total	100.0%	661
Ethnic groups	White	97.8%	655
	Mixed	0.2%	1
	Asian	1.0%	7
	Black	1.0%	7
	Total	100.0%	670
Lonely	No	70.9%	482
	Yes	29.1%	198
	Total	100.0%	680

Socially isolated	No		85.0%	578
	Yes		15.0%	102
	Total		100.%	680
Socio-economics: annual household income	Under £10k		26.6%	158
	£10-24k		34.7%	206
	£25-49k		28.2%	167
	£50-100k		9.1%	54
	Over £100k		1.3%	8
	Total		100.0%	593

Table 1: Social demographics

Socio-economics, loneliness and isolation

When examining an association between socio-economics (n = 593), experiences of loneliness (n = 198) and social isolation (n = 102; see Table 1), a number of significant findings emerged from the data analysis. This study uncovered a correlation between annual income and social isolation (p = 0.000). In Table 2, the principal group, at 36%, who considered themselves as socially isolated, were people who had an annual household income of less than £10K. Reports of social isolation declined considerably as household income increased. Only 11% of participants who earned between £10K–24K reported experiencing social isolation. Experiences of social isolation gradually decreased to 4% for people in the £50K–100K group. However, there was a slight increase to 13% for the £100K+ group. When comparing annual household income of less than 10K with that of £100K+, a reduction can be observed from 36% to 13% from the lowest to the highest socio-economic group.

			Under £10k	£10-24,999k	£25-49,999	£50-100k	Over £100k	Sig.
Isolated	No	n =	101	183	153	52	7	
		%	63.9%	88.8%	91.6%	96.3%	87.5%	p = 0.000
	Yes	n =	57	23	14	2	1	
		%	36.1%	11.2%	8.4%	3.7%	12.5%	
Total		n =	158	206	167	54	8	
		%	100.0%	100.0%	100.0%	100.0%	100.0%	

Table 2: Socio-economics and isolation

			Under £10k	£10-24,999k	£25-49,999	£50-100k	Over £100k	Sig.
Lonely	No	n =	64	151	145	43	8	
		%	40.5%	73.3%	86.8%	79.6%	100.0%	p = 0.000
	Yes	n =	94	55	22	11	0	

		59.5%	26.7%	13.2%	20.4%	0.0%	
	%						
Total	n =	158	206	167	54	8	
	%	100.0%	100.0%	100.0%	100.0%	100.0%	

Table 3: Socio-economics and loneliness

With reference to socio-economic status and participants who reported experiencing loneliness, a significant relationship appeared within the data analysis (p = 0.000). As can be seen in Table 3, a staggering 60% of participants whose annual household income was below £10K described feelings of emotional loneliness. The experience of loneliness reduced from 60% to 27% for participants whose annual income was from £10K–24K. There was a slight variation between the £25–49K and the £50K–100K group, as loneliness decreased to 13% for the £25–49K group and subsequently increased to 20% for the £50K–100K group. No participant in the £100K+ group reported feelings of loneliness. When comparing data for participants with an annual household income of less than 10K with those in the £100K+ group, there was a reduction from 60% to 0% between the lowest and highest socio-economic groups.

Risk factors, loneliness and isolation

When exploring risk factors to loneliness and isolation, the team examined if participants described spending most of their time alone. The data presented in Table 4 revealed a significant relationship between socio-economic groups and limited social engagement (p = 0.000). For participants in the under £10K group, 68% spent the majority of time on their own. This decreased to 41%, 29%, and 17% for the £10K–24K group, £25K–49K group and £50–100K group respectively. Interestingly, there was an increase for participants whose household income was £100K+, as 38% of this group reported spending most of their time on their own. Although there was an increase for this group, when comparing time spent alone for the under £10K group with the over £100K group there is a reduction from 68% to 38% from the lowermost socio-economic to the uppermost socio-economic groups in this study.

			Under £10k	£10-24,999k	£25-49,999	£50-100k	Over £100k	
Time spent alone	Yes	n =	102	76	42	9	3	
		%	67.5%	40.6%	29.0%	17.0%	37.5%	p = 0.000
	No	n =	49	111	103	44	5	
		%	32.5%	59.4%	71.0%	83.0%	62.5%	
Total		n =	151	187	145	53	8	
		%	100.0%	100.0%	100.0%	100.0%	100.0%	

Table 4: Time spent alone

			Under £10k	£10-24,999k	£25-49,999	£50-100k	Over £100k	Sig.
Desired increase in social interaction	Yes	n =	70	54	51	14	0	
		%	51.5%	32.1%	36.4%	28.6%	0.0%	p = 0.001
	No	n =	66	114	89	35	8	
		%	48.5%	67.9%	63.6%	71.4%	100.0%	
Total		n =	136	168	140	49	8	
		%	100.0%	100.0%	100.0%	100.0%	100.0%	

Table 5: Desired increase in social interaction

Within this study, the team recognised that participants may choose to spend the majority of their time alone. Therefore, the team explored whether participants actively decided to spend their time alone or wanted increased interactions/activities with others. The data in Table 5 revealed that there was a significant correlation between socio-economic groups and the desire to have increased and reduced contact time with others (p = 0.001). The data revealed that 52% of participants who had an annual income below £10K desired to engage in more activities than they currently do outside their households. This decreased to 32% for participants who had an annual income of £10K–24K. Interestingly, there was a slight increase to 36% for individuals from the £24K–50K group, but this fell to 29% for the £50–100K group. Again, no participants in the £100K+ group desired any increase in activities, and seemed content with their current social networks. The data seems to indicate that, for individuals from the lowermost socio-economic group, there is a desire for increased activities/interactions outside the home, which is not the case for individuals from the uppermost socio-economic group.

Health issues, loneliness and isolation

When comparing the relationship between socio-economics and self-reported poor health, the data revealed that there was a significant correlation between poverty and health in this survey (p = 0.000). Table 6 illustrates that participants who earned less than £10K per annum reported the highest level of poor health, at 25%. Furthermore, only 33% of this group described themselves in good health. For participants in the £10K–24K group, only 11% described themselves as in poor health, and 60% of this group described themselves as in good health. For the £24K–50K group, again we could see a reduction in poor health, to 6%. There was also an increase in good health, at 77% for this group. Interestingly, only 2% of the £50–100K group, and none of the £100K+, group described themselves as in poor health. Most participants in these groups also described themselves as relatively healthy, as 81% of the £50–100K group and 75% of the £100K+ group reported being in good health. Therefore, the data in Table 6 demonstrates that poor health diminishes as household income increases, in this survey.

Table 6: Socio-economics and poor health

			Under £10k	£10-24,999k	£25-49,999K	£50-100k	Over £100k	Sig.
Socio-economics and general health	Good	n =	50	117	118	43	6	
		%	32.5%	60.0%	76.6%	81.1%	75.0%	p = 0.000
	Fair	n =	66	56	27	9	2	
		%	42.9%	28.7%	17.5%	17.0%	25.0%	
	Bad	n =	38	22	9	1	0	
		%	24.7%	11.3%	5.8%	1.9%	0.0%	
Total		n =	154	195	154	53	8	
		%	100.0%	100.0%	100.0%	100.0%	100.0%	

When comparing socio-economic status and health inequalities with loneliness and isolation, the data analysis indicated that there was no significant relationship between socio-economics, poor health and social isolation (p = 0.098). However, there was a significant relationship (p = 0.026) between socio-economics, poor health and

experiences of loneliness. It should be noted that loneliness is associated with poor health, but experiences of loneliness disproportionately affected the health of people from lower socio-economic groups. The data in Table 7 demonstrates that, for participants from the under £10K group, 29% of participants who had experienced loneliness also reported poor health, compared with 18% of this group who had not experienced loneliness but reported health problems. Interestingly, it was the £10K–24K group where loneliness had the biggest impact, as 33% of participants who had experienced loneliness reported poor health, compared with only 3% of this group who had not experienced loneliness but reported health problems. Poor health then decreased as income increased for people who experienced loneliness. This can be seen in the £25K–49K group who experienced loneliness, as only 14% reported poor health, and 5% of this group who had not experienced loneliness reported health problems. Similarly, only 9% of the £50–100K group described experiences of loneliness and poor health, and none of this group who had not experienced loneliness reported having poor health. Finally, none of the £100K+ group reported either feelings of loneliness or experiences of poor health, in this study.

				Under £10k	£10-24,999k	£25-49,999k	£50-100k	Over £100k	Sig.
Not Lonely	Socio-economics, poor health and loneliness	Good	n =	30	96	107	38	6	p = 0.000
			%	50.0%	68.6%	81.1%	90.5%	75.0%	
		Fair	n =	19	40	19	4	2	
			%	31.7%	28.6%	14.4%	9.5%	25.0%	
		Bad	n =	11	4	6	0	0	
			%	18.3%	2.9%	4.5%	0.0%	0.0%	
	Total		n =	60	140	132	42	8	
			%	100.0%	100.0%	100.0%	100.0%	100.0%	
Lonely	Socio-economics, poor health and loneliness	Good	n =	20	21	11	5	0	p = 0.026
			%	21.3%	38.2%	50.0%	45.5%	0.0%	
		Fair	n =	47	16	8	5	0	
			%	50.0%	29.1%	36.4%	45.5%	0.0%	
		Bad	n =	27	18	3	1	0	
			%	28.7%	32.7%	13.6%	9.1%	0.0%	

		94	55	22	11		
Total	n =					0	
	%	100.0%	100.0%	100.0%	100.0%	100.0%	

Table 7: Socio-economics, poor health and loneliness

Strengths and Limitations

It should be recognised that no definitive conclusions can be drawn from this article, as there were a number of limitations to the survey. Firstly, it should be noted that this study was exploratory in nature and aimed to target a relatively hidden and hard-to-reach community. The survey was conducted partially online and although this gave the authors access to a greater number of hard-to-reach participants, it did not allow us to create a sample frame or randomly select a representative population. Secondly, our socio-economic categories were not evenly distributed within our sample leading to small numbers in the higher socio-economic groups which could lead to bias in our findings. Thirdly, information on loneliness and isolation was self-reported, and no objective measurement was used to categorise individuals as either lonely or isolated. Fourthly, there was a gender bias within the data collected, as 70% of participants were female. Finally, the survey had limited information on participants' socio-economic profiles, hence household income was used as the determinant factor to categorise groups. Although these limitations exist, which may not lead to a precise estimation of the impact that loneliness has on health, the data did present some interesting findings that can be used to design a larger confirmatory study.

Conclusions

The findings seem to illustrate that socio-economics and emotional loneliness affected poor health in this sampled population (p = 0.026). As the findings illustrated, participants with a household annual income of below £10K experienced disproportionately high levels of social isolation and emotional loneliness, when compared with other socio-economic groups (p = 0.000). The group with a household income below £10K also spent most of their time on their own, compared with other groups within this survey (p = 0.000). Yet this group was more likely to want

increased access to activities outside of their households than the other socio-economic groups within the study. Although the other groups reported spending a significant amount of time on their own, they were less likely to want increased access to more social activities (p = 0.001). This may suggest that individuals who experienced social isolation in the higher socio-economic groups have had the ability to choose whether they wanted increased or decreased social activities, which is not the case for participants in the below £10K group. Therefore, social isolation seems more likely to be a choice for participants as their household income increases, which, to a certain extent, may lead to a lower level of emotional loneliness among these groups.

Finally, when examining if social isolation has a detrimental impact on a person's health, no association was discovered with reference to socio-economics (p = 0.098). However, there was a significant relationship between socio-economic status, emotional loneliness and poor health (p = 0.026). As the data demonstrated, participants with a household income of less than £24K annually were most likely to report poor health compared with the other groups. One might theorise that if participants have no control over their feelings of loneliness this may have a detrimental impact on their health, whereas individuals who have more choice over their reduced contact with people outside their home have improved health, meaning overall improved health for groups with access to increased economic wealth. Although the article does not present any conclusive findings, it does illustrate a number of noteworthy relationships between socio-economics, loneliness and perceived poor health. Therefore, the findings present data that may be useful as a foundation for future research examining the complex intersectional relationships between socio-economics, experiences of loneliness and health inequalities.

Ethical approval

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