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COMMENTARY

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Promoting early language development in the Arab world and Sustainable Development Goals 3, 4, 10 and 17

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Abstract

Purpose: This commentary describes a multi-national project which addresses gaps in the design and delivery of health and education services in Arabic-speaking countries in relation to early language development, with a focus on Egypt, Jordan, Lebanon and the Palestinian Territories. This includes: (1) co-production with early years professionals and NGOs of approaches to support early language development; (2) development and standardisation of tools to identify monolingual and multilingual Arabic-speaking children at risk of poor language development; and (3) examination of language development in refugee communities.
Result: The importance of inter-professional partnership and the inclusion of families in planning support for oral language development is highlighted. Arabic versions of the Communicative Development Inventory (CDI) Toddler were developed, and data collected from 1074 Egyptian, Jordanian and Palestinian monolingual infants aged 8–30 months. Data from 201 age-matched Palestinian infants in Lebanese refugee camps highlight inequalities resulting from limited maternal educational opportunities. Data from 230 multilingual Lebanese 2-year-olds enable the interpretation of CDI scores as a function of language exposure.
Conclusion: This work contributes to the promotion of robust language development for all Arabic-speaking children. This commentary focusses on sustainable development goal (SDG) 3, SDG 4, SDG 10 and SDG 17.

Keywords: *Sustainable Development Goals (SDGs); good health and well-being (SDG 3); quality education (SDG 4); reduced inequalities (SDG 10); partnerships for the goals (SDG 17); communication disability; Arabic; oral language development; Communicative Development Inventory (CDI); social disadvantage; refugee contexts*

Introduction

The Sustainable Development Goals (SDGs) (United Nations, 2015) provide a blueprint for positive action through international partnership to tackle the most pressing challenges facing our planet. These 17 globally adopted goals include good health and well-being (SDG 3), quality education (SDG 4) and reduced inequalities (SDG 10). Around the world, unmet needs in relation to early language and communication disabilities are limiting young people's life chances and exacerbating inequalities in these crucial domains. This commentary reports on a multi-disciplinary project (Bulbul, 2019) aiming to address these needs in parts of the Arab world. We first highlight gaps in available tools, services and policy in relation to language development in Egypt, Jordan, Lebanon and the State of Palestine. We then provide an overview of work programmes designed to address these gaps. We end with a call for a multi-professional approach to enrich early years environments to support the life chances of children in the Arab world.

Language is the medium through which people form and maintain relationships, learn and develop, create a sense of identity, and navigate work, community and

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wider society. A significant minority of children do not develop oral language at the expected rate, putting them at substantial risk of poorer long-term outcomes, affecting social-emotional wellbeing, educational attainment, employment and quality of life (Law et al., 2009; Le et al., 2021).

Whilst language difficulties are found across the social spectrum, language abilities correlate with the material, cultural and social resources of the child's family (McKean et al., 2018). Funding and delivery of health and education services can exacerbate inequalities, underserving families with the greatest need. Preventative approaches are essential to support language development in the early years, but the knowledge, tools, services and policy to deliver such approaches are not universally available. We posit that the promotion of robust early language is vital to the achievement of many SDGs, particularly SDG 3, SDG 4 and SDG 10. To achieve this, support must cut-across contextual, service-provision and age-related boundaries, so partnerships across health, education, communities and non-governmental organisations (partnerships for the goals, SDG 17) are vital.

Current gaps in support for language development in the Arab world

The Arab world has a relatively young population, with children aged 0–4 years estimated to represent ~12% of the population (Central Agency for Public Mobilisation and Statistics (CAPMAS), 2021; Jordan Department of Statistics, 2020). Arabic is the native language of most children, but early multilingualism is common in Lebanon (Zablit & Trudeau, 2008). Norms on Arabic language development are scarce (Mahfoudhi & Abdalla, 2017) or non-existent in the case of multilingualism. Little is known too about oral language development in refugee communities.

Literacy statistics in the Arab world suggest low reading achievement in primary school-aged children (UNICEF, 2021). No data exist regarding early language development, a vital precursor to literacy. Research has reported that many early years educators do not have strategies to support language development and lack confidence with children who may have communication disabilities, due to limited relevant training (Kouba Hreich, 2022; Moitel Messarra, 2022). And, while a large proportion of children under 5 are cared for at home (CAPMAS, 2021; Queen Rania Foundation, 2017), we know little about what constitutes a language-rich home environment in the Arab world.

There is also a lack of awareness of the role of early language intervention amongst parents (Ahmed, Mohamed, Ali, & Ahmed, 2019; Araifi, Darawsheh et al., 2020). Most speech–language pathology services in the Arab world are private and concentrated in major cities, leaving many families unable to access support (Araifi et al., 2020). Early monitoring of children's health does not typically include language assessment, and valid tools to aid early identification of communication disabilities are scarce (cf. Rifaie et al., 2021; Zebib et al., 2019).

How Bulbul aims to address these gaps

Bulbul (2019) is a multi-disciplinary study with partners in the United Kingdom, Egypt, Jordan, Lebanon and the State of Palestine. It aims to develop free tools which enable parents and professionals working with young children to measure the children's early language abilities. Data collection from different regions in each country and with families from difference socio-economic circumstances will enable researchers and professionals to interpret language scores as a function of language exposure and family circumstances (e.g. monolingual or multilingual language use, maternal education, and displacement). Co-production with early years professionals and NGOs is also planned in order to foster approaches to support early language development. This research has been granted ethical approval by the Newcastle University Faculty of Humanities and Social Sciences Ethics Committee. The following presents preliminary progress in our work to address the gaps described above.

A Multi-agency approach to the promotion of robust language development in the Arab world

Children's services are complex ecologies made up of a mix of statutory and voluntary provision, funded through public, private and charitable organisations and staffed by a mix of health, education and social care professionals. The precise nature of these ecologies emerges through interactions between current and historical policy and funding, geography and the effectiveness of inter-agency and inter-professional collaboration. For equitable, sustainable provision which promotes optimal language development for all, intervention models need to be developed and evaluated with sufficient flexibility to be tailored to the needs of families and the range of service delivery and community contexts. Bulbul is conducting a series of qualitative enquiries through interview, documentary analysis, focus groups and surveys to understand this 'complex ecology' for children aged 0–4 years in Lebanon.

Initial themes highlight substantial barriers to support. The perspective of a parent in a rural district exemplifies geographical and socio-economical inequities:

> Last time we went to the paediatrician, she told me that I must either take him to a speech therapist or to a nursery… I can't even put him in a nursery because of the situation in the country… we stay at home all day…

Families can, therefore, be left feeling helpless and unsupported: "We don't have any experience in this field, so we are incapable of doing this alone".

A paediatrician commented on the difficulty families face in accessing resources to support their child's language development: "They are not available to the public … They're either not free or people might not know where to look for them and how". A speech-language pathologist noted that media that provides messages on supporting children's language are not accessible to all and their content does not comprise a coordinated public health campaign:

> In general, the majority are therapists or specialists who … choose a certain pathology or disorder and talk about it or show a certain practical activity … However, that's not enough because … not everyone has access to social media … not all parents know how to use them.

It is also clear that public health messages designed in English-speaking contexts and cultures should not be lifted 'off-the-peg' and applied here. For example, whilst parents we interviewed did not mention shared book-reading as part of their daily routine, other opportunities for language-enriching interactions are present, especially around shared mealtimes, intergenerational family gatherings and bedtime routines including song and religious rituals. Despite recent development of models of collaborative practice (Kouba Hreich, 2022; Moitel Messarra, 2022) early years educators we interviewed do not all feel equipped to support children's language development and would value more collaborative working with speech-language pathologists: "I wish the speech therapy team could give us some tips to apply in class, but we were never able to do so". Work is ongoing to further understand the unique assets and challenges relevant to the provision of language enriching early years environments in Lebanon. These will inform the development of recommendations for policy and provision designed to maximise the assets in this context, aiming to be sustainable and realistic whilst also being ambitious for children's outcomes.

Language assessment tools

A multi-dialectal Arabic Communicative Development Inventory

The CDI Toddler parental questionnaire measures vocabulary knowledge and production in children aged 8–30 months. We developed the Palestinian and Jordanian versions (including dialect-specific items for each of the unique 100 words) through extensive consultation by adapting the Egyptian CDI (Abdelwahab et al., 2021). Stratified sampling using census data ensured proportional representation of family socio-economic status (SES), measured through maternal education, across administrative regions in Palestine and Jordan. Exclusion criteria included hearing loss or diagnosed communication disability; premature birth; bilingualism; speakers of other Arabic dialects; and living outside the target country. Data were collected using online and face-to-face interactions. Parents were asked to indicate whether their child knew and/or produced each word. Preliminary findings are based on a total of 1074 CDIs (Table I).

A linear regression on CDI production scores against age and maternal education, with gender and country as dummy variables, significantly explained 38.4% of the variance ($F(4, 1065) = 165.6$, $p < .001$). Age, gender, and country were significant predictors, but not maternal education. The same analysis on CDI comprehension scores gave a significant model explaining 45% of the variance ($F(4, 1065) = 216.8$, $p < .001$), with age and maternal education, but not gender, contributing significantly. The correlation between maternal education and word comprehension is expected (e.g. Dollaghan et al., 1999), and here it may explain the variance in vocabulary growth between countries due to the unequal distribution of maternal education.

What is the impact of multilingualism on language development?

Preliminary data from 230 Lebanese 24-month-olds (Table II) were collected using a stratified sampling approach to cover all Lebanese areas and SES. The Lebanese CDI included measurements of Lebanese Arabic, English and French to account for the multilingual situation in Lebanon. Speakers of other languages were excluded.

For English CDI scores, regression with gender, maternal education and English exposure predicted 43.1% of the variance in comprehension ($F(3224) = 55.8$, $p < .001$) and 39.0% in production ($F(3, 224)$

Table II. Descriptive data from 230 Lebanese children (maternal education scale: 1–11).

	Mean	SD
Age	23.9	0.35
Gender	50% girls	
Maternal education	8.6	3.0
Arabic exposure (%)	63.3	24.9
English exposure (%)	15.0	14.2
French exposure (%)	21.6	23.4
Arabic CDI comprehension	63.6	24.2
Arabic CDI production	34.5	24.9
English CDI comprehension	28.2	31.1
English CDI production	15.8	20.6
French CDI comprehension	36.0	35.3
French CDI production	21.9	26.3

Table I. Descriptive data for children whose parents filled in the CDI Toddler (maternal education scale: 1–8).

	N	Age	% Girls	Maternal education	CDI production	CDI comprehension
Egypt	215	19.21 (7.10)	48.4	4.27 (2.40)	28.37 (29.92)	48.44 (26.41)
Jordan	502	19.39 (6.79)	44.2	4.96 (1.71)	35.09 (32.83)	61.31 (27.46)
Palestine	357	20.07 (6.66)	44.5	5.37 (1.41)	35.26 (31.45)	63.28 (26.00)

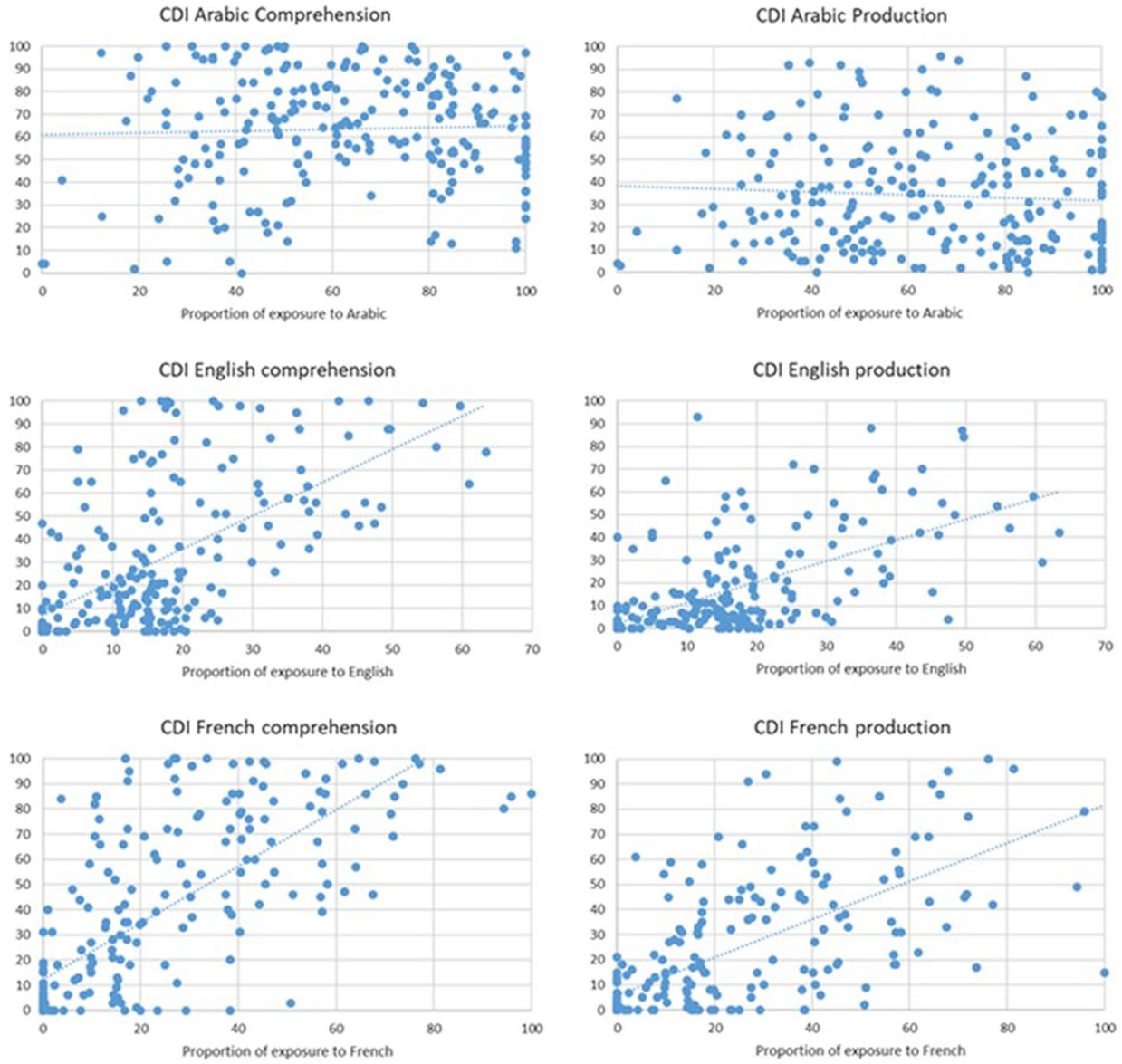

Figure 1. CDI scores in Arabic, English and French for Lebanese 24-month-olds as a function of language exposure (%).

= 47.15, $p < .001$). Only English exposure contributed significantly to these models. Results for French were similar, with exposure again the unique predictor (Figure 1). Results for Arabic were initially surprising, because regressions for comprehension and production with gender, maternal education and Arabic exposure failed to reach significance. However, Arabic exposure is skewed towards high values. Previously researchers showed that CDI scores of young bilinguals raised in the United Kingdom and exposed to 60% English or more were not distinguishable from monolinguals (Cattani et al., 2014). When focussing on the Lebanese children exposed to less than 60% Arabic, we found a significant contribution of Arabic exposure for comprehension scores. Measuring Arabic word knowledge in Lebanese children will therefore require consideration of exposure, with adjustment of CDI scores if needed.

Table III. Descriptive data from Palestinian children living in refugee camps or in Palestine.

	N	Age	% Girls	Maternal education
Palestinians in Lebanon	201	19.4 (6.3)	54.2	2.7 (1.6)
Palestinians	357	20.1 (6.7)	44.5	5.4 (1.4)

Displacement and language development

The Arabic CDI Toddler also was administered to 201 Palestinian children living in a protracted refugee situation in Lebanon. Data collection was completed face-to-face, facilitated by a non-governmental organisation. Compared with the non-displaced Palestinian children (3.2.1) (Table III), the samples are similar in age, slightly different in gender distribution (χ^2 (1) = 4.46, $p = .035$), and very dissimilar in maternal education ($F(1, 552) = 421.7$, $p < .001$).

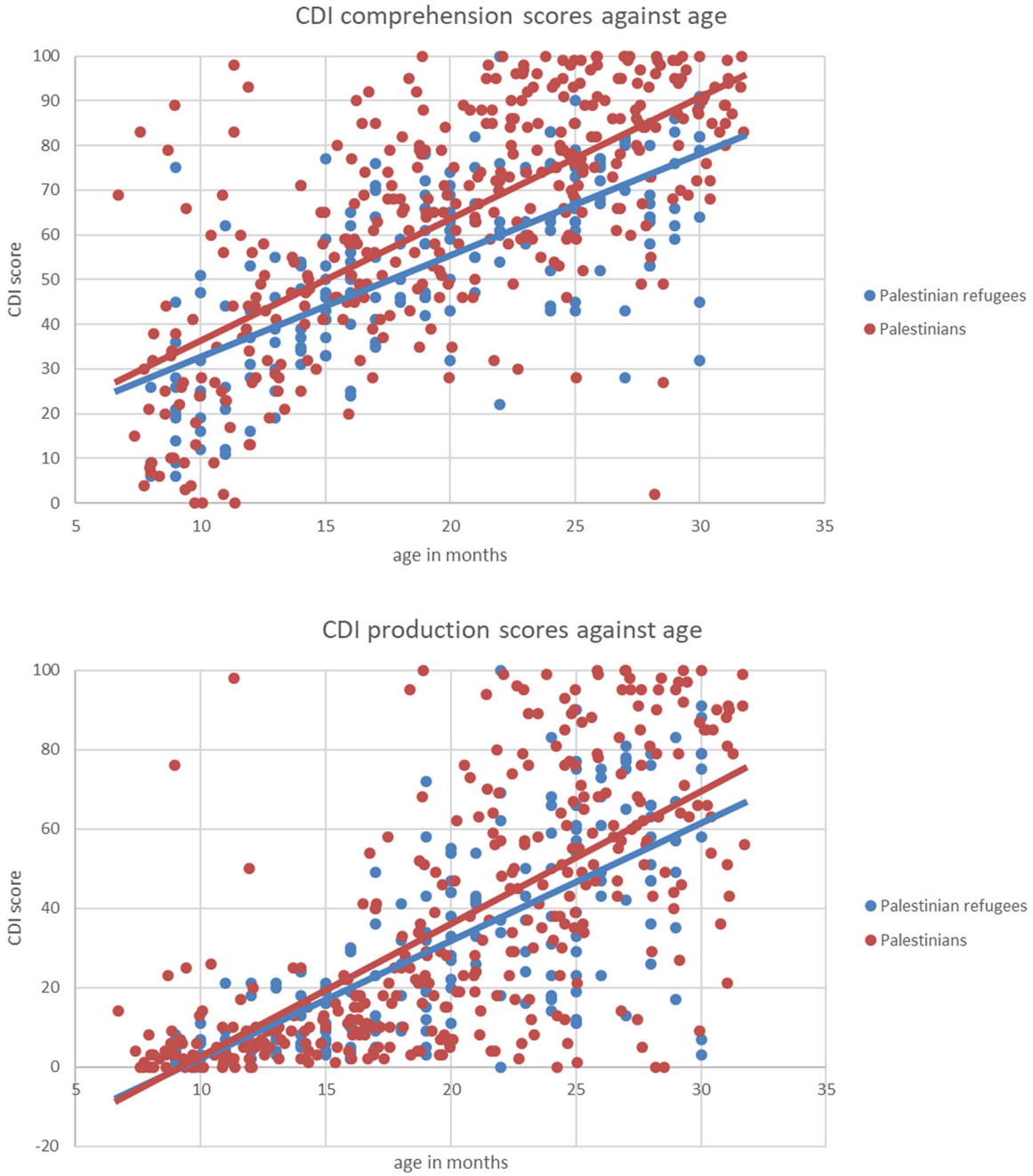

Figure 2. CDI scores as a function of age for Palestinian children in Palestine and in Lebanese refugee camps.

A regression on CDI comprehension scores with age, gender and maternal education explained 52.7% of the variance ($F(3,549) = 204.0$, $p < .001$) with age and maternal education contributing significantly; the addition of country as a variable did not significantly explain more variance ($F(1, 548) = 1.45$). The results were similar for CDI production scores, with added significant contribution from gender. Displacement does not seem to impact children's language development between 8 and 30 months, once maternal education is considered. However, because maternal education is significantly different between the two populations, in absolute values, children's language development in refugee camps is below that of children in Palestine (Figure 2).

Summary and conclusion

Our research reveals the importance of considering the views of all stakeholders who contribute to early childhood development (SDG 17) to ensure that efforts to support oral language development are effective and do not inadvertently exclude families with the greatest needs. Ongoing work provides the necessary data to standardise the Arabic CDI Toddler in three countries, enabling early years professionals and parents to monitor language development and detect difficulties, thereby advancing good health and well-being (SDG 3), quality education (SDG 4), and reduced inequalities (SDG 10). In Lebanon, multilingual results highlight the need to

consider relative language exposure (Cattani et al., 2014). Data from refugee families underscore the importance of mothers' education and limited educational opportunities in refugee camps. Collaboration with non-governmental organisations and policymakers will focus on developing systems of support enabling access for all children to quality education, health and quality of life.

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Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

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