

Research Article

Cite this article: Zemp C, Vallières F, Jama MA, Ali AH, Young K and Jagoe C (2024). The unmet need for mental health support among persons with disabilities in Somalia: Principal correlates and barriers to access. *Cambridge Prisms: Global Mental Health*, **11**, e73, 1–10 <https://doi.org/10.1017/gmh.2024.66>.

Received: 22 December 2023

Revised: 23 March 2024

Accepted: 29 April 2024

Keywords:

disability; mental health; Somalia; barriers to care

Corresponding authors:

Charles Zemp and Caroline Jagoe;
Emails: czemp@tcd.ie; cjagoe@tcd.ie

The unmet need for mental health support among persons with disabilities in Somalia: Principal correlates and barriers to access

Charles Zemp¹ , Frédérique Vallières¹, Mohamed Abdul Jama², Abdifatah Hassan Ali³, Kirsten Young³ and Caroline Jagoe^{4,5}

¹Trinity Centre for Global Health, School of Psychology, Trinity College Dublin, Dublin 2, Ireland; ²National Disability Agency, Mogadishu, Somalia; ³United Nations Human Rights and Protection Group, Mogadishu, Somalia; ⁴Department of Clinical Speech & Language Studies, Trinity College Dublin, Dublin 2, Ireland and ⁵School of Human and Community Development, University of the Witwatersrand, Johannesburg, South Africa

Abstract

Disability and mental ill-health may be especially prevalent in Somalia, largely due to a protracted armed conflict and its consequent humanitarian crises. Little, if any, research to date, however, has simultaneously explored disability- and mental health-related factors in the Somali context. Using both descriptive and regression analytical techniques, we aimed to determine how increasing levels of functional impairment reported across different disability domains (i.e., visual, hearing and cognition), number of concomitant disabilities, and other empirically supported variables (such as employment and sex) are associated with the likelihood of self-identifying the need for mental health support among a sample ($N = 1,355$) of Somalis with disabilities, as well as identify the common barriers to such support. Despite most participants self-identifying a need for mental health support, only 15% were able to access it, with the most common barriers being the cost of services and the unavailability of local services. Being female, married, and having increasing levels of functional difficulty in the cognitive, mobility and self-care domains of disability were each significantly associated with an increased likelihood of the self-identified need for mental health support. This study's findings highlight potential points of prioritisation for mental health policy and programming in Somalia. A Somali version of this abstract can be found in the Supplementary Material.

Impact statement

Disability and mental disorders are both pressing concerns in Global Health, particularly in low-to middle-income countries (LMICs), where the vast majority of the global population with a disability and/or mental disorder reside. Somalia stands out as an LMIC where the impact of disability and mental distress is likely especially felt, primarily due to its decades-long conflict and the resulting multitude of concurrent humanitarian crises. While previous research suggests that disability and mental distress are alarmingly common in Somalia, we are not aware of any studies that have explored both mental health- and disability-related factors in this context. We therefore aimed to determine how increasing levels of functional impairment reported across different disability domains (i.e., visual, hearing and cognition), number of concomitant disabilities, and other empirically supported variables (such as employment and sex) are associated with the likelihood of self-identifying the need for mental health support among Somalis with disabilities. In doing so, we identified certain subgroups among Somalis with disabilities who (i) may be more willing to participate in mental health and psychosocial support interventions and/or (ii) may warrant prioritisation for such intervention efforts. Additionally, we highlight the frequent barriers that Somalis with disabilities face when attempting to avail of mental health support. Findings are discussed in terms of their implications for mental health policy and mental health programming for persons with disabilities in Somalia, which is described as currently experiencing a 'mental health crisis'.

Social media summary

Research reveals associations between disability and needing mental health support in Somalia, highlighting predictors and barriers.

© The Author(s), 2024. Published by Cambridge University Press. This is an Open Access article, distributed under the terms of the Creative Commons Attribution-NonCommercial licence (<http://creativecommons.org/licenses/by-nc/4.0>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original article is properly cited. The written permission of Cambridge University Press must be obtained prior to any commercial use.



Introduction

According to recent estimates, 16% of the world's population – or 1.3 billion people – live with a significant disability (World Health Organization (WHO), 2022a), and 13% live with some form of mental disorder (Institute for Health Metrics and Evaluation (IHME), 2023). Disability and mental health are often not independent, however, with evidence suggesting a well-supported relationship between the two (e.g., Sanderson and Andrews, 2002; Turner *et al.*, 2006; Emerson *et al.*, 2008; Cree *et al.*, 2020; Augustine *et al.*, 2022; IHME, 2023). According to the 2019 Global Burden of Disease Study, mental health disorders accounted for 14.95% of the total years lived with disability and 4.92% of total disability-adjusted life-years (IHME, 2023). These global statistics, however, fail to provide a comprehensive picture of the epidemiological landscape of disability and mental health, primarily through overlooking the regional differences that are revealed upon disaggregation. For example, 80% of the global population with disabilities resides in low- to middle-income countries (LMICs) (United Nations Development Programme (UNDP), 2016; WHO, 2022a), as does 82% of the global population with mental disorders (WHO, 2022b). Somalia, a country whose protracted armed conflict since 1991 (Manku, 2018) has made it home to some “of the worst humanitarian conditions in the world” (Ononogbu, 2018, 117), stands out as one such LMIC where disability and mental health are likely to converge significantly.

The relationship between mental health, disability, poverty and conflict is both dynamic and complex. Previous qualitative research indicates that most Somalis with disabilities are thought to have become disabled due to conflict (Amnesty International, 2015). Likewise, higher poverty levels, stemming from the prolonged humanitarian crisis, also contribute to the suggestion of elevated disability rates among Somalis (WHO, 2010). Poverty and disability are reciprocally related (Groce *et al.*, 2011; WHO and World Bank, 2011; Banks *et al.*, 2018), particularly for those experiencing multidimensional poverty, which includes monetary, educational and access to basic infrastructure (Mitra *et al.*, 2013). In Somalia, an estimated 90% of the population lives in some form of multidimensional poverty (World Bank, 2022).

Similarly, the decades-long conflict and ongoing humanitarian crisis in Somalia have been described as largely responsible for a ‘collective distress’ among the Somali population and as a key risk factor for the development of mental disorders (WHO, 2010). Indeed, the detrimental effects of armed conflict on the mental health of a population are well documented (Charlson *et al.*, 2019; Jain *et al.*, 2022). Taken together, these factors all likely contribute to what Ibrahim *et al.* (2022b) have called a ‘mental health crisis’ in Somalia, whereby Somalia’s ongoing conflict has likely led to a heightened demand for effective mental healthcare in a context almost completely devoid of resources for mental health.

Closing the substantial treatment gap for mental health disorders in Somalia, while not uncommon in LMICs (Petagna *et al.*, 2023), is likely impeded by additional factors. These include a severe dearth of mental health services, potentially harmful cultural beliefs that stigmatise mental illness (Ibrahim *et al.*, 2022b) and minimal reliable data on the prevalence of mental disorders in the country. The limited data available nonetheless reflects Somalia’s mental health crisis. As of 2010, one in three Somalis suffered, or had suffered, from some sort of mental illness (WHO, 2010). A further situational analysis by the United Nations Human Rights and Protection Group (United Nations Assistance Mission in Somalia Human Rights Protection Group (UNSOM

HRPG), 2019) indicated high levels of harmful stereotyping of persons with disabilities. A narrow understanding of disability as being related exclusively to physical impairment risks further marginalisation of those with mental health (or other) disabilities with regard to access to services. Misconceptions and significant cultural and attitudinal barriers limit the full and meaningful participation of these citizens (National Disability Agency of Somalia (NDA), 2024).

Despite the well-established connection between disability and mental health and the increased likelihood of both disability and psychological distress in conflict settings, there remains a notable gap in research explicitly exploring the association between disability and mental health as well as the barriers impeding access to mental health services within the Somali context. A better understanding of this relationship has the potential to enhance the living conditions of individuals with disabilities (UNDESA, *n.d.*; Khaltarkhuu and Sagesaka, 2019; WHO, 2023a) and mental health disorders (Kilbourne *et al.*, 2018; Moukaddam *et al.*, 2022; WHO, 2023b) as well as to inform stronger programming and policy.

Therefore, and to bridge these identified research gaps, this study first sought to describe a large sample of Somalis with disabilities in terms of key socio-demographic characteristics related to disability and mental health, specify the percentage of participants with disabilities reportedly needing mental health support but not receiving it, and identify common barriers to accessing mental health support. Next, we sought to investigate the effect, if any, that the level of functional difficulty across different disability domains, the number of disabilities, and other known correlates of mental health and disability have on the probability of Somalis with disabilities endorsing a need for mental health support.

Methods

Study design

This study was a secondary analysis of cross-sectional data collected by the National Disability Agency of Somalia (NDA) as part of their “Disability Data Collection and Needs Assessment Survey” (NDA, 2024). Born from the absence of nationwide disability data in Somalia (SIDA, 2014), the survey began in January 2022 with the aim of understanding the perceptions and priorities of persons with disabilities in Somalia across various service sectors. To gather this information, the NDA – with input from the Somalia Bureau of Statistics, different UN agencies, Organisations for Persons with Disabilities (OPDs) in Somalia and local experts by experience (persons with disabilities involved in the study team) – expanded on a survey tool that had previously been used in disability inclusion studies in South Sudan (The International Organization for Migration (IOM), 2021a) and internally displaced person (IDP) camps in Kismayo, Somalia (IOM, 2021b).

While the original study collected data across a multitude of sectors (e.g., health, housing, water, sanitation and hygiene), this study exclusively focuses on the relationships between disability and the reported need for mental health support. Therefore, a minimal number of variables measured in the original study were included in this study.

Participants

The data used in this study come from a sample of $N = 1,367$ adults (18 years of age or above) residing in the five regional

administrative capitals of Somalia (excluding the country capital of Mogadishu): Kismayo ($n = 301$), Dhuusamareeb ($n = 286$), Jowhar ($n = 281$), Baidoa ($n = 266$) and Garowe ($n = 233$) (NDA, 2024). Somaliland was not included within the original study because the NDA's current reach does not extend to Somaliland. Ultimately, data analyses were performed using ($n = 1,355$) cases from the original study, whereby the inclusion criteria included those (i) who were ≥ 18 years of age at the time of data collection and (ii) met the Washington Group on Disability Statistics' (WG) standard threshold for disability (i.e., responding 'a lot of difficulty' or 'cannot do at all' to one of the domains in the short-set of questions, further described below). Participants were recruited in the original NDA study through non-probability sampling methods. Purposive sampling was first used via OPDs in each district, followed by snowball sampling to recruit more participants with disabilities. The exclusion criteria for the original NDA study included individuals not self-identifying as having a disability and being below the age of 18.

Data collection

The data reported in this article were collected via household questionnaires administered in-person by local enumerators. The enumerators who collected data were Somali and were trained by the IOM using the WG training materials that had been translated into Somali. Despite efforts by the NDA to recruit enumerators with disabilities, none of them were able to participate in the data collection for the five regions included in the current study. Participant data were collected digitally using Kobo Toolbox.

Instruments and variables

Level of functional difficulty

The WG Short Set on Functioning (WG-SS) was used to assess the level of functional difficulty across six disability domains: vision, hearing, mobility, cognition (remembering), self-care and communication, originally selected for their "simplicity, brevity, universality and comparability" (WG, 2023, para. 7). Developed by a UN Statistics Commission City Group, the WG-SS was designed to facilitate cross-country comparisons of disability data and allows for the disaggregation of outcome indicators based on disability status. Although its validation in the Somali context is not yet established, the WG-SS has undergone extensive testing and validation worldwide (Groce and Mont, 2017) and, as of 2021, is included in the national census of 111 countries (WG, 2022a). The WG-SS was translated for use in the original NDA study by individuals who are fluent in both English and Somali and who have familiarity with the design and aim of the WG-SS questions.

The WG-SS contains six questions – one for each disability domain – that assess the level of difficulty experienced by respondents. Sample items administered directly to the individual include: "Do you have difficulty seeing, even if wearing glasses?" and "Do you have difficulty walking or climbing steps?" (WG, 2022b, 2). Responses are scored on a scale of 1–4, with a greater score indicating a greater level of functional difficulty, ranging from 1 indicating 'no difficulty' to 4 indicating 'cannot do at all'.

Disability status

Aligned with the WG's recommended criteria (WG, 2020), a score of 3 ('a lot of difficulty') or 4 ('cannot do at all') on any of the six domains of the WG-SS was used as indicative of disability. A new variable, 'disability status', was thus created to determine the percentage of total participants who met this criterion. To determine

participant disability status for particular domains, six additional new variables were created within the participant dataset – one for each disability domain – coded as either 1 (i.e., reaching the threshold for disability in that domain of functioning) or 0 (absence of disability in relation to that domain of functioning).

Number of disabilities

The number of disabilities a participant had was then assessed by summing the number of disability domains (vision, hearing, mobility, cognition [remembering], self-care and mobility) present for each participant, with a possible score ranging from 0 to 6.

Need for mental health support

Participants' need for mental health support was measured dichotomously by asking them "Have you needed psychosocial support like counselling or psychological therapy?" The question was translated with input from local team members familiar with the cultural–linguistic context and the disability and human rights context of the country. Although counselling and psychological therapy is not the typical 'first-line' of assistance sought, the terms used were deemed familiar and culturally appropriate by the local experts and experts by experience (persons with disabilities involved in the study team). As such, the translated question was aligned with a common lay understanding in Somalia of the concept of professional counselling or psychological therapy, which did not include spiritual or traditional healing practices. Participants could respond with either 'yes' or 'no', coded as '1' and '0', respectively.

Barriers to accessing mental health support

Participants who initially responded 'yes' to the question "Have you needed psychosocial support like counselling or psychological therapy?" were also asked the question: "Have you been able to get the services you needed?" If they answered 'no' to the latter, barriers to accessing mental health support were assessed by asking participants if they had experienced any of the following obstacles to receiving psychosocial support: unavailability of local services, a lack of information, distance, cost of services, a lack of physical access, a lack of safety, discrimination and/or harassment, communication barriers or other. Participants could select multiple options or specify their own options if they chose 'other'.

Covariates

Consistent with a biopsychosocial model of both health and disability, the strength and direction of the relationship between disability and mental health depend on several interdependent socio-demographic factors. These include, but are not limited to, age (Cree et al., 2020), gender (Caputo and Simon, 2013; Noh et al., 2016), marital status (Caputo and Simon, 2013; Cree et al., 2020) and employment status (Cree et al., 2020). Likewise, the literature indicates an association between education and both disability (Kuper et al., 2014; Houtenville et al., 2022) and mental health (Jiang et al., 2020; Kondirolli and Sunder, 2022). Therefore, the following socio-demographic variables were selected as covariates:

Age

Age was recorded as a continuous variable. Participants were asked their age (in years) during data collection interviews.

Sex

Biological sex at birth was recorded as a dichotomous variable, with males being coded as '0' and females as '1'. Participants were asked whether they were male or female during data collection interviews.

Marital status

Marital status was originally recorded as a categorical variable, assessed by asking participants about their marital status during data collection interviews. Possible responses included 'single', 'married', 'divorced', 'widowed' or 'other'. If participants responded with 'other', they were asked to specify. For this study, participants who responded with 'single', 'divorced' or 'widowed' in the original study were recoded as '0 – no', while those who responded with 'married' were recoded as '1 – yes'.

Employment status

Employment status was originally recorded as a categorical variable, assessed by asking participants the question "Are you doing any work that earns you money?" The response options included 'unemployed', 'work sometimes', 'employed' or 'other'. If participants responded with 'other', they were asked to specify. For this study, participants who responded with 'unemployed' were recoded as '0 – no', while those who responded with 'work sometimes', 'employed' or 'other' in the original study were recoded as '1 – yes'.

Education status

Education status was recorded as a dichotomous variable, assessed by asking participants the following question: "Have you had access to education services?" Participants could respond with either 'no' (coded as '0') or 'yes' (coded as '1').

Data analysis

Data analysis was performed using IBM's Statistical Package for the Social Sciences, Version 27.

To achieve the first objective of this study, multiple descriptive analyses were performed. Continuous socio-demographic variables were summarised as a mean, standard deviation and range. Categorical socio-demographic variables were summarised as counts and sample percentages. Likewise, participant's need for mental health support, ability to access mental health support and the assessed barriers to mental health support were all summarised as counts and sample percentages.

For the second objective of this study, binary logistic regression was chosen to determine the predictive effects of independent variables on the probability of belonging to the self-identified category of needing mental health support. Violations of assumptions of linearity between continuous independent variables (including covariates) and minimal multicollinearity for binary logistic regression were tested using the Box–Tidwell transformation test and by checking variance inflation factor scores, respectively (Harris, 2021).

Two binary logistic regressions were performed. The first regression was used to investigate the effect of each of the independent variables – the level of functional difficulty for each WG-SS disability domain and the number of disabilities – on the probability of a participant self-identifying the need for mental health support. A second adjusted model was then used to investigate the same effects while also accounting for the following covariates: age, sex, marital status, employment status and education status. The reference categories for the categorically measured covariates

were female for sex, married for marital status, employed for employment status and educated for education status.

Ethics

Ethical approval to conduct the study was granted by the NDA and the UN Human Rights. Approval for the use of the anonymised data for the purposes of this secondary analysis was obtained via the School of Linguistic, Speech and Communication Sciences at Trinity College Dublin.

Results

Table 1 summarises the demographic characteristics of the selected sample ($n = 1,355$).

Table 2 summarises the number (n) and percentage (%) of participants with disabilities who met the criteria for each of the WG's six disability domains and those with disability status in more than one domain, as well as the descriptive statistics for the independent variables in both regression models.

Slightly over half of the participants with disabilities self-identified the need for mental health support (51.7%, $n = 695$). Among these participants, a significant majority reported not being able to access the mental health support they needed (84.9%, $n = 590$). Table 3 details the frequency with which each barrier to receiving mental health support was endorsed.

Results – regression (without covariates)

The first regression model was statistically significant ($\chi^2(7) = 38.38$, $p < .001$) indicating its ability to distinguish between participants with disabilities who self-identified needing mental health support and those who did not. The model explained between 2.8% (Cox and Snell R square) and 3.8% (Nagelkerke R square) of the variance in self-identifying the need for mental health support and correctly classified 56.5% of the total cases. A non-significant Hosmer and Lemeshow test value ($p = .524$) suggests that the model was a good fit for the data. As shown in Table 4, multiple statistically significant predictors of the likelihood of self-identifying the need for mental health support – compared to not self-identifying such a

Table 1. Demographic characteristics of participants with disabilities

	<i>n</i>	%	Mean	SD	Range
Gender					
Male	723	53.4	–	–	–
Female	632	46.6	–	–	–
Marital status					
Married	765	55	–	–	–
Unmarried	610	45	–	–	–
Employment status					
Employed	186	13.8	–	–	–
Unemployed	1,159	86.2	–	–	–
Education status					
Educated	195	14.5	–	–	–
Uneducated	1,150	85.5	–	–	–
Age	–	–	49.68	20.49	18–110

Table 2. Number (*n*) and percentage (%) of participants' disability status per disability domain and multiple domains (disabilities) and descriptives of level of functional difficulty for each WG-SS disability domain and the total number of domains of functional difficulty (disabilities) per participant

			Descriptives		
			Mean	SD	Range
	<i>n</i>	%			
WG-SS domain					
Vision	455	33.6	1.94	1.11	1–4
Hearing	278	20.5	1.66	0.96	1–4
Mobility	902	66.6	2.65	1.01	1–4
Cognition (remembering)	198	14.6	1.59	0.83	1–4
Self-care	580	42.8	2.21	1.04	1–4
Communication	243	17.9	1.57	0.89	1–4
Multiple WG-SS domains (disabilities)*	818	60.3	–	–	–
Total number of domains of functional difficulty (disabilities)*	–	–	1.96	1.04	1–6

Note: *participants can report more than one domain of functional difficulty.

Table 3. Reported barriers to mental health support

	<i>n</i>	%
Cost of services	364	30.7
Unavailability of local services	257	21.7
Lack of information	200	16.9
Distance	192	16.2
Lack of physical access	11	9.5
Communication barriers	21	1.8
Discrimination and/or harassment	20	1.7
Lack of safety	14	1.2
Other	3	0.3
Total	1,184	100

need – were found: the level of functional difficulty in the mobility (OR = 1.23, 95% C.I. = 1.07–1.42), cognition (OR = 1.13, 95% C.I. = 1.13–1.58) and self-care (OR = 1.25, 95% C.I. = 1.08–1.45) WG-SS domains all significantly increased the likelihood, while only the number of disabilities (OR = .77, 95% C.I. = .62–.96) significantly decreased the likelihood.

Results – regression (adjusted model)

The second regression model was statistically significant (χ^2 (12) = 64.291, *p* = .001), indicating its ability to distinguish between participants with disabilities who self-identified needing mental health support and those who did not. In a slight improvement over the first model, the second model explained between 4.7% (Cox and Snell R square) and 6.2% (Nagelkerke R square) of the variance in self-identifying the need for mental health support and increased the rate of correctly classified cases to 60%. A non-significant Hosmer and Lemeshow test value (*p* = .163) suggests that the model was a good fit

Table 4. Logistic regression (without covariates) predicting the likelihood of self-identifying the need for mental health support

	B	S.E.	Wald	df	<i>p</i>	AOR	95% C.I. for AOR	
							Lower	Upper
Vision [†]	.023	.06	.15	1	.68	1.02	.911	1.149
Hearing [†]	.024	.08	.09	1	.76	1.02	.881	1.190
Mobility [†]	.21	.07	8.05	1	.00**	1.23	1.07	1.42
Cognition [†]	.29	.08	11.87	1	.00**	1.34	1.13	1.58
Self-care [†]	.22	.08	8.63	1	.00**	1.25	1.08	1.45
Communication [†]	.04	.09	.24	1	.63	1.05	.875	1.248
Total number of domains of functional difficulties (disabilities)	–.26	.11	5.55	1	.01*	.77	.62	.96

Note: **p* < .05 and ***p* < .001, denoting statistically significant thresholds.

[†]Each of the six domains of functional difficulty in the WG-SS.

for the data. Table 5 demonstrates the effect of each independent variable and covariate on the probability of self-identifying the need for mental health support, compared to not self-identifying such a need. Similar to the first model, statistically significant predictors of an increased likelihood of self-identifying the need for mental health support were found in the level of functional difficulty in the mobility (AOR = 1.25, 95% C.I. = 1.07–1.45), cognition (AOR = 1.39, 95% C.I. = 1.17–1.65) and self-care (AOR = 1.26, 95% C.I. = 1.09–1.47) WG-SS domains, while the number of disabilities (AOR = .76, 95% C.I. = .61–.95) significantly decreased the likelihood. Additionally, the

Table 5. Adjusted logistic regression predicting the likelihood of self-identifying the need for mental health support

	B	S.E.	Wald	df	<i>p</i>	AOR	95% C.I. for AOR	
							Lower	Upper
Vision [†]	.06	.07	.73	1	.39	1.06	.93	1.20
Hearing [†]	.04	.08	.29	1	.59	1.04	.89	1.22
Mobility [†]	.22	.08	8.34	1	.00**	1.25	1.07	1.45
Cognition [†]	.33	.09	14.19	1	.00**	1.39	1.17	1.65
Self-Care [†]	.23	.08	9.19	1	.00**	1.26	1.09	1.47
Communication [†]	.06	.09	.43	1	.51	1.06	.89	1.27
Total number of domains of functional difficulties (disabilities)	–.27	.11	5.97	1	.01*	.76	.61	.95
Age (in years)	–.005	.003	2.50	1	.11	.995	.99	1.00
Gender	–.37	.12	10.11	1	.00**	.69	.55	.87
Employment status	–.10	.17	.36	1	.55	.91	.65	1.25
Marital status	–.47	.12	15.98	1	.00**	.63	.50	.79
Education status	.07	.17	.20	1	.66	1.08	.78	1.49

Note: **p* < .05 and ***p* < .001, denoting statistically significant thresholds.

[†]Each of the six domains of functional difficulty in the WG-SS.

adjusted regression results indicated that being male (AOR = .69, 95% C.I. = .55–.87) and unmarried (AOR = .63, 95% C.I. = .50–.79) were significantly associated with a reduced likelihood of self-identifying the need for mental health support compared to being female and married (respectively).

Discussion

This study first sought to describe a large sample of Somalis with disabilities in terms of key characteristics, investigate the prevalence of their self-identified need for mental health support and identify the most endorsed barriers to accessing such support. Particularly noteworthy were the significant levels of unemployment and lack of education among the participants with disabilities. Results also demonstrated that most participants with disabilities self-identified the need for mental health support. This finding is consistent with previous research, which found that 31% of IDPs with disabilities in Kismayo, Somalia expressed mental health concerns (IOM, 2021b). However, as mental health is heavily stigmatised in Somalia (Ibrahim et al., 2022b), it seems possible that participants in this study underreported the need for mental health support.

Concerningly, only a small proportion of those who identified the need for mental health support reported being able to access the required services. This aligns with previous research from sub-Saharan Africa, where the treatment gap for mental disorders is estimated to range from 75% to 90% (Lund et al., 2015). The profound scarcity of mental health resources in Somalia (Ibrahim et al., 2022a,b) was further reflected by ‘unavailability of local services’ being a frequently mentioned barrier to care noted by participants with disabilities. To address this barrier, task-sharing, a practice involving the redistribution of care from specialists to non-specialist health workers (NSHWs) (van Ginneken et al., 2011; Le et al., 2022), provides a promising approach, as it allows for an increase in the availability of human resources (Singla et al., 2017). Previous research has advocated for the expansion of task-sharing programmes within Somalia, highlighting the precedent of the *Marwo Caafimaad* program – a task-sharing initiative to address maternal health issues in the country (Ibrahim et al., 2022a). While task-sharing has been shown to be effective in ameliorating mental distress in LMICs (Kakuma et al., 2011; Singla et al., 2017), there are likely several barriers to its implementation for mental health in Somalia (e.g., Le et al., 2022).

One such barrier may be the general acceptability and feasibility of these interventions (Padmanathan and De Silva, 2013). A task-sharing programme that could address this challenge is ‘Islamic Trauma Healing’ (Bentley et al., 2021). Developed in collaboration with Somali refugees, this group-based, lay-lead intervention integrates Islamic principles into evidence-based psychotherapies. Previous research demonstrates its feasibility, acceptability and preliminary effectiveness in reducing psychological distress among Somali Muslims (Bentley et al., 2021; Zoellner et al., 2021). Given Somalia’s predominantly Muslim population (Bentley et al., 2021), there is significant potential for further investigations into the efficacy of Islamic Trauma Healing as a community-based programme to ameliorate mental distress among Somalis with disabilities.

Enhancing task-sharing for mental health services within Somalia could also be achieved through implementing the WHO’s Mental Health Action Gap (mhGAP) programme, as highlighted by Ibrahim et al., 2022b. Indeed, the mhGAP is embedded in the ‘2019–2022 Somali Mental Health Strategy’, which emphasises its implementation as an essential activity and highlights positive

outcomes from previous mhGAP training sessions for Somali health workers (Federal Ministry of Health and Human Services, 2019). These implementation efforts, however, may be hindered by the lack of a “coherent, consolidated human resource development plan” (Federal Ministry of Health and Human Services, 2019, 14). To address this, the ‘C4 Framework’ (Bolton et al., 2023) is worth exploring. Drawing from the mhGAP guide, this framework offers a comprehensive, collaborative and community-based (C4) care model that provides detailed guidance on how to bolster human resources for the delivery of sustainable and feasible task-sharing mental health services in low-resource settings. Continued research into how these task-sharing initiatives can be optimally integrated into the Somali healthcare system is essential, as – due to the disruption of health services caused by humanitarian emergencies – there is substantial opportunity for sustainable improvements in mental healthcare provision (Epping-Jordan et al., 2015).

Interestingly, discrimination and/or harassment was only mentioned 20 times as a barrier to accessing mental health support. This finding is inconsistent with a meta-synthesis of 41 qualitative studies that found that discrimination often discouraged persons with disabilities in LMICs from seeking healthcare (Hashemi et al., 2022). In a context like Somalia, where both disability (Manku, 2018) and mental health (Manku, 2018; Ibrahim et al., 2022b) are heavily stigmatised, one would anticipate discrimination against persons with disabilities seeking mental healthcare to be a frequent occurrence. This discrepancy may stem from a hesitancy to report experiences of discrimination, a common cross-contextual occurrence (e.g., Yoon et al., 2021; Perone, 2023). Likewise, Somalis with disabilities may underreport discrimination due to “internalised oppression” – wherein marginalised groups acknowledge their secondary status and view their unfair treatment as nondiscriminatory (Krieger, 1999, 324). Nevertheless, the unexpected nature of these findings within the context of previous research (e.g., Hashemi et al., 2022) calls for further exploration. A more qualitative approach may be needed to better understand the experiences of discrimination that persons with disabilities in Somalia encounter, and how these experiences affect their ability to access mental health services. This study also sought to explore the independent impact of different disability domains, the number of disabilities and related covariates on the probability of self-identifying a need for mental health support. The results indicate that an increasing level of functional difficulty in the cognitive domain of disability was associated with the greatest odds of self-identifying the need for mental health support, consistent with what previous research suggests (e.g., Horner-Johnson et al., 2013; Cree et al., 2020). However, our results differ from those of Horner-Johnson et al. (2013) regarding the impact of mobility disabilities. While Horner-Johnson et al. found that persons with a mobility disability had lower odds of reporting poor mental health compared to those with a hearing disability, this study’s results demonstrate that Somalis with a mobility disability had increased odds of acknowledging the need for mental health support, whereas those with a hearing disability did not. This difference could be due, in part, to divergent methodological characteristics between this study and that of Horner-Johnson et al. (2013). Contextual differences, such as potentially greater infrastructural and societal accommodations for Americans with a mobility disability than their Somali counterparts, may also contribute to this observed discrepancy.

Being female was also associated with greater odds of self-identifying the need for mental health support. This may be accounted for by a greater likelihood of females experiencing

internalised mental health problems – such as anxiety and/or depression – compared to men (Seedat et al., 2009; Riecher-Rössler, 2016; Otten et al., 2021) with the greatest disparity in sub-Saharan Africa (Yu, 2018). Furthermore, more females receive mental health care than males (National Institute of Mental Health (NIMH), 2023), suggesting that women may be more willing to seek support than men. While the data from the NIMH (2023) is from the United States – and thus, not representative of Somalia – it nonetheless offers a potential explanatory mechanism for the results found in this study. The findings of this study also support those of Moodley and Graham (2015), who found that the intersection of gender and disability has particularly negative outcomes for women. Therefore, in addition to those with a cognitive or mobility disability, Somali females with a disability may be especially interested in, or especially benefit from, participating in mental health interventions.

Surprisingly, an increasing number of disabilities was associated with a lower likelihood of self-identifying the need for mental health support in this study. This contradicts the findings by Horner-Johnson et al. (2013), who discovered that having more than one disability significantly increased the odds of an individual reporting poor mental health. Similarly, Cree et al. (2020) highlight how participants who had more than one disability had the highest prevalence of frequent mental distress and diagnosed depressive disorders. Differences in the applied criteria for being considered to have a disability between this study and those of Horner-Johnson et al. (2013) and Cree et al. (2020) may contribute to this discrepancy. Indeed, there are several distinct conceptual models of what disability is, each of which can have different implications for how it is measured (Palmer and Harley, 2012).

Given the extreme dearth of mental health resources in Somalia (Ibrahim et al., 2022a), it seems crucial to prioritise certain individuals for intervention. The results of this study indicate Somalis with cognitive or mobility disabilities and Somali females with disabilities (or an intersection of the two) may be particularly receptive to practical interventions targeting the amelioration of mental distress.

This study is not without limitations. First, the cross-sectional data collection method used in the original NDA study hinders this study's ability to establish any causal dimension to the relationship between disability and the self-identified need for mental health support. Nonetheless, the results of this study indicate a weak, largely positive association between the two variables in the Somali context, suggesting the potential for a future longitudinal study to explore causality further. A second limitation of this study is the exclusion of an explicit intellectual disability variable from the regression models. This is, in part, due to the lack of a WG-SS question that specifically targets intellectual disability. While people with intellectual disabilities may respond with significant functional difficulties in multiple of the WG-SS domains – such as self-care, communication and cognition – the WG-SS may not fully capture the suggested complexity and heterogeneity of intellectual disability (Zhang and Holden, 2022). Given the highest regional prevalence rates of intellectual disabilities are found in LMICs (Nair et al., 2022), especially in sub-Saharan Africa (Olusanya et al., 2022), and the significant co-occurrence of intellectual disabilities and poor mental health (Emerson and Hatton, 2007; Munir, 2016; Totsika et al., 2022), it is essential to explicitly include them in investigations into the relationship between disability and mental health going forward. Future research should build on these results by incorporating the measurement of intellectual disability in the Somali context to better understand its impact on mental health outcomes.

Third, our regression analyses had a limited scope, as only some of the theoretically supported covariates were included in the adjusted model. The original study contained additional social determinants of mental health variables that may influence the self-identified need for mental health support among Somalis with disabilities – such as their ability to access public areas (Libertun de Duren et al., 2021), water and sanitation facilities (Simiyu et al., 2021) and food sources (Na et al., 2018). Future research should expand the number of theoretically supported variables as covariates to gain a more comprehensive understanding of the relationships between disability and mental health in Somalia.

Finally, the use of non-probability sampling techniques in the original NDA study from which this study's data originates introduces the potential for selection bias (Andridge et al., 2019) and thus “inaccurate estimations” of the discovered associations (Shringarpure and Xing, 2014, 902). Furthermore, such sampling techniques restrict the ability to generalise the study's findings to the entire population of Somalis with disabilities (Alvi, 2016). Future research should attempt to investigate the relationship between disability and mental health in Somalia using more probability-based sampling techniques.

Conclusion

Despite the limitations, this study provides valuable insight into the concerning mental health condition of persons with disabilities in Somalia. This study reveals priority areas for practical interventions, including females, individuals with cognitive or mobility disabilities and individuals experiencing an intersection of these factors. However, further research is essential to gain a more detailed understanding of the mental health challenges that Somalis with disabilities face and how to effectively support this population. In particular, research that investigates the feasibility of delivering established low-resource mental health interventions within the Somali disability context is recommended. In sum, this study serves as an important steppingstone, highlighting the pressing need for future research and practical efforts aimed at ameliorating the mental health outcomes of persons with disabilities in Somalia.

Open peer review. To view the open peer review materials for this article, please visit <http://doi.org/10.1017/gmh.2024.66>.

Supplementary material. The supplementary material for this article can be found at <http://doi.org/10.1017/gmh.2024.66>.

Data availability statement. The data that support the findings of this study are available from the author M.A.J. (upon reasonable request), as an employee of the NDA of Somalia, which originally collected the data.

Acknowledgements. The authors would like to acknowledge all the collaborators and individuals who made this work possible. Specifically, the authors would like to thank those staff members of the NDA of Somalia and the UN Human Rights and Protection Group Somalia who were involved in both the original data collection and the analysis that is this study. The authors would also like to extend their gratitude to the Somali participants who donated their valuable time and energy to kindly participate in the original NDA of Somalia study from which this current study is born.

Author contribution. M.A.J., K.Y. and C.J. conceived the study. A.H.A. supported data collection. C.Z., F.V. and C.J. analysed the data. C.Z. was the principal author in drafting this manuscript, supervised by F.V. and C.J. All authors contributed to the interpretation, editing of the paper and approval of the version for submission.

Financial support. Data collection costs were supported by funding from UN agencies in Somalia. The analysis costs were covered in part through pro-bono contributions and in part funded by the SADIE Network (Strengthening evidence-based Action on Disability and Inclusion in Emergencies).

Competing interest. M.A.J. is employed by the National Disability Agency of Somalia; A.H.A and K.Y. are employed by the UN Human Rights and Protection Group Somalia. C.Z., F.V. and C.J. declare no conflicts of interest.

Ethics standard. All authors declare to adhere to the publishing ethics of Global Mental Health. The ethics for original data collection were granted by the National Disability Agency of Somalia and the UN Human Rights and Protection Group Somalia (SLSCS TT87). Participant consent was verbal and recorded by each enumerator in the Kobo toolbox system prior to proceeding with data collection.

References

- Alvi M (2016) A Manual for Selecting Sampling Techniques in Research. Munich Personal RePEc Archive Paper No. 70218. Available at https://mpra.ub.uni-muenchen.de/70218/1/MPRA_paper_70218.pdf (accessed 18 Dec 2023).
- Amnesty International (2015) Somalia: Prioritise Protection for People with Disabilities, March 12, 2015. AI INDEX: AFR 52/1166/2015. Available at: <https://www.amnesty.org/en/documents/af52/1166/2015/en/> (accessed 20 Dec 2023).
- Andridge RR, West BT, Little RJA, Boonstra PS and Alvarado-Leiton F (2019) Indices of non-ignorable selection bias for proportions estimated from non-probability samples. *Journal of the Royal Statistical Society. Series C: Applied Statistics* 68(5), 1465–1483. <https://doi.org/10.1111/rssc.12371>
- Augustine L, Bjereld Y and Turner, R (2022) The role of disability in the relationship between mental health and bullying: A focused, systematic review of longitudinal studies. *Child Psychiatry & Human Development*. <https://doi.org/10.1007/s10578-022-01457-x>.
- Banks LM, Kuper H and Polack S (2018) Poverty and disability in low- and middle-income countries: A systematic review. *PLoS One* 12(12), e0189996. <https://doi.org/10.1371/journal.pone.0189996>.
- Bentley JA, Feeny NC, Dolezal ML, Klein A, Marks LH, Graham B and Zoellner LA (2021) Islamic trauma healing: Integrating faith and empirically supported principles in a community-based program. *Cognitive and Behavioral Practice* 28(2), 167–192. <https://doi.org/10.1016/j.cbpra.2020.10.005>.
- Bolton P, West J, Whitney C, Jordans MJD, Bass J, Thornicroft G, Murray L, Snider L, Eaton J, Collins PY, Ventevogel P, Smith S, Stein DJ, Petersen I, Silove D, Ugo V, Mahoney J, el Chammay R, Contreras C, Eustache E, Koyiet P, Wondimu EH, Upadhaya N and Raviola G (2023) Expanding mental health services in low- and middle-income countries: A task-shifting framework for delivery of comprehensive, collaborative, and community-based care. *Cambridge Prisms: Global Mental Health* 10(e16), 1–14. <https://doi.org/10.1017/gmh.2023.5>.
- Caputo J and Simon RW (2013) Physical limitation and emotional well-being: Gender and marital status variations. *Journal of Health and Social Behavior* 54(2), 241–257. <https://doi.org/10.1177/0022146513484766>.
- Charlson F, van Ommeren M, Flaxman A, Cornett J, Whiteford H and Saxena S (2019) New WHO prevalence estimates of mental disorders in conflict settings: A systematic review and meta-analysis. *Lancet* 394, 240–248. [https://doi.org/10.1016/S0140-6736\(19\)30934-1](https://doi.org/10.1016/S0140-6736(19)30934-1).
- Cree RA, Okoro CA, Zack MM and Carbone E (2020) Frequent mental distress among adults, by disability status, disability type, and selected characteristics - United States, 2018. *Morbidity and Mortality Weekly Report* 69(36), 1238–1243. <https://doi.org/10.15585/mmwr.mm6936a2>.
- Emerson E and Hatton C (2007) Mental health of children and adolescents with intellectual disabilities in Britain. *British Journal of Psychiatry* 191, 493–499. <https://doi.org/10.1192/bjp.bp.107.038729>.
- Emerson E, Honey A and Llewellyn G (2008) The Well-Being and Aspirations of Australian Adolescents and Young Adults with a Long-Term Health Condition, Disability or Impairment. Canberra: ARACY. Available at https://www.aracy.org.au/publications-resources/command/download_file/id/153/filename/The_well-being_and_aspirations_of_Australian_adolescents_and_young_adults_with_a_long-term_health_condition (accessed 20 Dec 2023).
- Epping-Jordan JE, van Ommeren M, Ashour HN, Maramis A, Marini A, Mohanraj A, Noori A, Rizwan H, Saeed K, Silove D, Suveendran T, Urbina L, Ventevogel P and Saxena S (2015) Beyond the crisis: Building back better mental health care in 10 emergency-affected areas using a longer-term perspective. *International Journal of Mental Health Systems* 9(15). <https://doi.org/10.1186/s13033-015-0007-9>.
- Federal Ministry of Health and Human Services (2019) 2019–2022 Somali Mental Health Strategy. Available at <https://moh.gov.so/en/wp-content/uploads/2020/07/Somali-Mental-Health-Strategy-2019-2022.pdf> (accessed 22 Mar 2024).
- Groce N, Kett M, Lang R and Trani JF (2011) Disability and poverty: The need for a more nuanced understanding of implications for development policy and practice. *Third World Quarterly* 32(8), 1493–1513. <https://doi.org/10.1080/01436597.2011.604520>.
- Groce N and Mont D (2017) Counting disability: Emerging consensus on the Washington group questionnaire. *Lancet Global Health* 5(7), E649–E650. [https://doi.org/10.1016/S2214-109X\(17\)30207-3](https://doi.org/10.1016/S2214-109X(17)30207-3).
- Harris JK (2021) Primer on binary logistic regression. *Family Medicine and Community Health* 9(Suppl 1), e001290. <https://doi.org/10.1136/Ffmc-2021-001290>.
- Hashemi G, Wickenden M, Bright T and Kuper H (2022) Barriers to accessing primary healthcare services for people with disabilities in low and middle-income countries, a meta-synthesis of qualitative studies. *Disability and Rehabilitation* 44(8), 1207–1220. <https://doi.org/10.1080/09638288.2020.1817984>.
- Horner-Johnson W, Dobbertin K, Lee JC, Andresen EM and The Expert Panel on Drug and Health Disparities (2013) Disparities in chronic conditions and health status by type of disability. *Disability and Health Journal* 6 (4), 280–286. <https://doi.org/10.1016/j.dhjo.2013.04.006>.
- Houtenville A, Shreya P and Rafal M (2022) Annual Report on People with Disabilities in America: 2021. Durham, NH: University of New Hampshire, Institute on Disability. Available at <https://disabilitycompendium.org/sites/default/files/user-uploads/Events/2022ReleaseYear/Annual%20Report%20-%202021%20-%20WEB.pdf> (accessed 19 Dec 2023).
- Ibrahim M, Malik MR and Noor Z (2022a) Investing in mental health in Somalia: Harnessing community mental health services through task shifting. *Cambridge Prisms: Global Mental Health* 9, 94–98. <https://doi.org/10.1017/gmh.2022.4>.
- Ibrahim M, Rizwan H, Afzal M and Malik MR (2022b) Mental health crisis in Somalia: A review and a way forward. *International Journal of Mental Health Systems* 16(12). <https://doi.org/10.1186/s13033-022-00525-y>.
- Institute for Health Metrics and Evaluation (IHME) (2023) GBD Results. Available at <https://vizhub.healthdata.org/gbd-results/> (accessed 10 May 2023).
- Jain N, Prasad S, Czarth ZC, Chodnekar SY, Mohan S, Savchenko E, Panag DS, Tanasov A, Betka MM, Platos E, Swiatek D, Krygowska AM, Rozani S, Srivastava M, Evangelou K, Gristina KL, Bordeniuc A, Akbari AR, Jain S, Kostiks A and Reinis A (2022) War psychiatry: Identifying and managing the neuropsychiatric consequences of armed conflicts. *Journal of Primary Care & Community Health* 13. <https://doi.org/10.1177/21501319221106625>.
- Jiang W, Lu Y and Xie H (2020) Education and mental health: Evidence and mechanisms. *Journal of Economic Behavior and Organization* 180, 407–437. <https://doi.org/10.1016/j.jebo.2020.09.032>.
- Kakuma R, Minas H, van Ginneken N, Poz MRD, Desiraju K, Morris JE, Saxena S and Scheffler RM (2011) Human resources for mental health care: Current situation and strategies for action. *Lancet* 378(9803), 1654–1663. [https://doi.org/10.1016/S0140-6736\(11\)61093-3](https://doi.org/10.1016/S0140-6736(11)61093-3).
- Khaltarkhuu BE and Sagesaka A (2019) Disability Data is Integral to Achieving the SDGs. World Bank Blogs. Available at <https://blogs.worldbank.org/open-data/disability-data-integral-achieving-sdgs> (accessed 1 June 2023).
- Kilbourne AM, Beck K, Spaeth-Ruble B, Ramanuj P, O'Brien RW, Tomoyasu N and Pincus HA (2018) Measuring and improving the quality of mental health care: A global perspective. *World Psychiatry* 17(1), 30–38. <https://doi.org/10.1002/wps.20482>.

- Kondiroli F and Sunder N (2022) Mental health effects of education. *Health Economics* 31(Suppl 2), 22–39. <https://doi.org/10.1002/hec.4565>.
- Krieger N (1999) Embodying inequality: A review of concepts, measures, and methods for studying health consequences of discrimination. *International Journal of Social Determinants of Health and Health Services* 29(2), 295–352. <https://doi.org/10.2190/M11W-VWXE-KQM9-G97Q>.
- Kuper H, Monteath-van Dok A, Wing K, Danquah L, Evans J, Zuurmond M and Gallinetti J (2014) The impact of disability on the lives of children: Cross-sectional data including 8,900 children with disabilities and 898,834 children without disabilities across 30 countries. *PLoS One* 9(9), e107300. <https://doi.org/10.1371/journal.pone.0107300>.
- Le PD, Eschliman EL, Grivel MM, Tang J, Cho YG, Tay C, Li T, Bass J and Yang LH (2022) Barriers and facilitators to implementation of evidence-based task-sharing mental health interventions in low- and middle-income countries: A systematic review using implementation science frameworks. *Implementation Science* 17(4). <https://doi.org/10.1186/s13012-021-01179-z>.
- Libertun de Duren NR, Salazar JP, Duryea S, Mastellaro C, Freeman L, Pedraza L, Rodriguez-Porcel M, Sandoval D, Aguerre JA, Angius C, Ariza MC, Artieda L, Bonilla JP, Cabrol M, Guerra V, La Forge G, Chacón-Martínez K, Mitchell A, Pineda V, Pinzon-Cacedo, M and Poitier F (2021) Cities as spaces for opportunities for all: Building public spaces for people with disabilities, children, and elders. Inter-American Development Bank. Available at <https://publications.iadb.org/en/cities-spaces-opportunities-all-building-public-spaces-people-disabilities-children-and-elders> (accessed 20 Dec 2023).
- Lund C, Alem A, Schneider M, Hanlon C, Ahrens J, Bandawe C, Bass J, Bhana A, Burns J, Chibanda D, Cowan F, Davies T, Dewey M, Fekadu A, Freeman M, Honikman S, Joska J, Kagee A, Mayston R, Medhin G, Musisi S, Myer L, Ntulo T, Nyatsanza M, Ofori-Atta A, Petersen I, Phakathi S, Prince M, Shibre T, Stein DJ, Swartz L, Thornicroft G, Tomlinson M, Wissow L and Susser E (2015) Generating evidence to narrow the treatment gap for mental disorders in sub-Saharan Africa: Rationale, overview and methods of AFFIRM. *Epidemiology and Psychiatric Sciences* 24(3), 233–240. <https://doi.org/10.1017/S2045796015000281>.
- Manku S (2018) *Supporting Persons with Disabilities in Somalia. K4D Helpdesk Report*. Brighton, UK: Institute of Development Studies. Available at https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/13587/Supporting%20People%20with%20Disabilities%20in%20Somalia_Public.pdf?sequence=1&isAllowed=y (accessed 19 Dec 2023).
- Mitra S, Posarac A and Vick B (2013) Disability and poverty in developing countries: A multidimensional study. *World Development* 41, 1–18. <https://doi.org/10.1016/j.worlddev.2012.05.024>.
- Moodley J and Graham L (2015) The importance of intersectionality in disability and gender studies. *Agenda* 29(2), 24–33. <https://doi.org/10.1080/10130950.2015.1041802>.
- Moukaddam N, Sano A, Salas R, Hammal Z and Sabharwal A (2022) Turning data into better mental health: Past, present, and future. *Frontiers in Digital Health* 4. <https://doi.org/10.3389/fdgth.2022.916810>.
- Munir KM (2016) The co-occurrence of mental disorders in children and adolescents with intellectual disability/intellectual developmental disorder. *Current Opinion in Psychiatry* 29(2), 95–102. <https://doi.org/10.1097/YCO.0000000000000236>.
- Na M, Miller M, Ballard T, Mitchell DC, Hung YW and Melgar-Quinoñez H (2018) Does social support modify the relationship between food insecurity and poor mental health? Evidence from thirty-nine sub-Saharan African countries. *Public Health Nutrition* 22(5), 874–881. <https://doi.org/10.1017/S136898001800277X>.
- Nair R, Chen M, Dutt AS, Hagopian L, Singh A and Du M (2022) Significant regional inequalities in the prevalence of intellectual disability and trends from 1990 to 2019: A systematic analysis of GBD 2019. *Epidemiology and Psychiatric Sciences* 21(31), e91. <https://doi.org/10.1017/S2045796022000701>.
- National Disability Agency of Somalia (NDA) (2024) Disability Survey Report: Disability Disrespected: The Perceptions and Priorities of Persons with Disabilities in Somalia. Available at <https://www.tcd.ie/triss/assets/PDFs/1.%20NDA%20Disability%20Survey%20Report%20-%20Final%20.pdf> (accessed 20 Dec 2023).
- National Institute of Mental Health (NIMH) (2023) Mental Illness. Available at <https://www.nimh.nih.gov/health/statistics/mental-illness> (accessed 24 July 2023).
- Noh JW, Kwon YD, Park J, Oh IH and Kim J (2016) Relationship between physical disability and depression by gender: A panel regression model. *PLoS One* 11(11), e0166238. <https://doi.org/10.1371/journal.pone.0166238>.
- Olusanya BO, Kancherla V, Shaheen A, Ogbo FA and Davis AC (2022) Global and regional prevalence of disabilities among children and adolescents: Analysis of findings from global health databases. *Frontiers in Public Health* 10. <https://doi.org/10.3389/fpubh.2022.977453>.
- Ononogbu C (2018) Counter-insurgency operations of the African union and mitigation of humanitarian crisis in Somalia. *Mediterranean Journal of Social Sciences* 9(2), 117–129. <https://doi.org/10.2478/mjss-2018-0032>.
- Otten D, Tibubos NA, Schomerus G, Brähler E, Binder H, Kruse J, Ladwig KH, Wild PS, Grabe HJ and Beutel ME (2021) Similarities and differences of mental health in women and men: A systematic review of findings in three large German cohorts. *Frontiers in Public Health* 9. <https://doi.org/10.3389/fpubh.2021.553071>.
- Padmanathan P and De Silva MJ (2013) The acceptability and feasibility of task-sharing for mental healthcare in low and middle income countries: A systematic review. *Social Science & Medicine* 97, 82–86. <https://doi.org/10.1016/j.socscimed.2013.08.004>.
- Palmer M and Harley D (2012) Models and measurement in disability: An international review. *Health Policy and Planning* 27(5), 357–364. <https://doi.org/10.1093/heapol/czr047>.
- Perone AK (2023) Constructing discrimination rights: Comparisons among staff in long-term care health facilities. *The Gerontologist* 63(5), 900–909. <https://doi.org/10.1093/geront/gnac152>.
- Petagna M, Marley C, Guerra C, Calia C and Reid C (2023) Mental health gap action Programme intervention guide (mhGAP-IG) for child and adolescent mental health in low- and middle-income countries (LMIC): A systematic review. *Community Mental Health Journal* 59(1), 192–204. <https://doi.org/10.1007/s10597-022-00981-3>.
- Riecher-Rössler A (2016) Sex and gender differences in mental disorders. *Lancet Psychiatry* 4(1), 8–9. [https://doi.org/10.1016/S2215-0366\(16\)30348-0](https://doi.org/10.1016/S2215-0366(16)30348-0).
- Sanderson K and Andrews G (2002) Prevalence and severity of mental health-related disability and relationship to diagnosis. *Psychiatric Services* 53(1), 80–86. <https://doi.org/10.1176/appi.ps.53.1.80>.
- Seedat S, Scott KM, Angermeyer MC, Berglund P, Bromet EJ, Brugha TS, Demyttenaere K, de Girolamo G, Haro JM, Jin R, Karam EG, Kovess-Masfety V, Levinson D, Mora MEM, Ono Y, Ormel J, Pennell BE, Posada-Villa J, Sampson NA, Williams D and Kessler RC (2009) Cross-national associations between gender and mental disorders in the WHO world mental health surveys. *Archives of General Psychiatry* 66(7), 785–795. <https://doi.org/10.1001/archgenpsychiatry.2009.36>.
- Shringarpure S and Xing EP (2014) Effects of sample selection bias on the accuracy of population structure and ancestry inference. *G3 (Bethesda, Md.)* 4(5), 901–911. <https://doi.org/10.1534/g3.113.007633>.
- Simiyu S, Bagayoko M and Gyasi RM (2021) Associations between water, sanitation, and depression among older people in Ghana: Empirical evidence from WHO-SAGE wave 2 survey. *Aging & Mental Health* 26(6), 1112–1119. <https://doi.org/10.1080/13607863.2021.1910796>.
- Singla DR, Kohrt BA, Murray LK, Anand A, Chorhita BF and Patel V (2017) Psychological treatments for the world: Lessons from low- and middle-income countries. *Annual Review of Clinical Psychology* 13, 149–181. <https://doi.org/10.1146/annurev-clinpsy-032816-045217>.
- Swedish International Development Agency (SIDA) (2014) Disability Rights in Somalia. December, 2014. Available at <https://cdn.sida.se/app/uploads/2021/05/07125817/rights-of-persons-with-disabilities-somalia.pdf> (accessed 19 Dec 2023).
- The International Organization for Migration (IOM) (2021a) Disability and Inclusion Survey: Malakal Protection of Civilians Site, February 15, 2021. Available at <https://dtm.iom.int/reports/south-sudan-%E2%80%94-disability-inclusion-survey-malakal-poc-site-2020> (accessed 19 Dec 2023).
- The International Organization for Migration (IOM) (2021b) Disability Inclusion Study: IDP Sites in Kismayo, Somalia - December 2021. Available at <https://reliefweb.int/report/somalia/disability-inclusion-study-idp-sites-kismayo-somalia-december-2021> (accessed 19 Dec 2023).

- The World Bank** (2022) *Somalia Economic Update: Investing in Social Protection to Boost Resilience for Economic Growth (English)*. Washington, D.C.: World Bank Group. Available at <http://documents.worldbank.org/curated/en/099645010242215445/P17502402429f50e708a6408e3872dbb193> (accessed 20 Dec 2023).
- Totsika V, Liew A, Absoud M, Adnams C and Emerson E** (2022) Mental health problems in children with intellectual disability. *Lancet Child & Adolescent Health* 6(6), 432–444. [https://doi.org/10.1016/S2352-4642\(22\)00067-0](https://doi.org/10.1016/S2352-4642(22)00067-0).
- Turner RJ, Lloyd DA and Taylor J** (2006) Physical disability and mental health: An epidemiology of psychiatric and substance disorders. *Rehabilitation Psychology* 51(3), 214–223. <https://doi.org/10.1037/0090-5550.51.3.214>.
- United Nations Assistance Mission in Somalia Human Rights and Protection Group (UNSOM HRP) and UN Human Rights** (2019) Situation Analysis of Persons with Disabilities in Somalia. On file with author KY.
- United Nations Department of Economic and Social Affairs (UNDESA)** (n.d.) Monitoring and evaluation of disability-inclusive development. Available at <https://www.un.org/development/desa/disabilities/resources/monitoring-and-evaluation-of-inclusive-development.html> (accessed 18 Dec 2023).
- United Nations Development Programme (UNDP)** (2016) Evaluation of Disability-inclusive Development at UNDP. Available at <https://erc.undp.org/evaluation/documents/download/10230>.
- van Ginneken N, Tharyan P, Lewin S, Rao GN, Romeo R and Patel V** (2011) Non-specialist health worker interventions for mental health care in low- and middle-income countries. *The Cochrane Database of Systematic Reviews* 2011(5), CD009149. <https://doi.org/10.1002/14651858.CD009149>.
- Washington Group on Disability Statistics (WG)** (2020) Analytic guidelines: Creating Disability Identifiers Using the Washington Group Short Set on Functioning (WG-SS) SPSS Syntax. Available at https://www.washingtongroup-disability.com/fileadmin/uploads/wg/Documents/WG_Document__5A_-_Analytic_Guidelines_for_the_WG-SS_SPSS_.pdf (accessed 20 Dec 2023).
- Washington Group on Disability Statistics (WG)** (2022a) Background document: 53rd Session of the United Nations Statistical Commission. Available at <https://unstats.un.org/unsd/statcom/53rd-session/documents/BG-4b-WashingtonGroup-E.pdf> (accessed 20 Dec 2023).
- Washington Group on Disability Statistics (WG)** (2022b) The Washington Group Short Set on Functioning (WG-SS). Available at https://www.washingtongroup-disability.com/fileadmin/uploads/wg/Washington_Group_Questionnaire__1_-_WG_Short_Set_on_Functioning__October_2022_.pdf (accessed 20 Dec 2023).
- Washington Group on Disability Statistics (WG)** (2023) WG Short Set on Functioning (WG-SS). Available at <https://www.washingtongroup-disability.com/question-sets/wg-short-set-on-functioning-wg-ss> (accessed 29 June 2023).
- World Health Organization (WHO)** (2010) A Situation Analysis of Mental Health in Somalia, October, 2010. Available at https://iris.who.int/bitstream/handle/10665/116674/EMROPUB_2010_EN_736.pdf (accessed 19 Dec 2023).
- World Health Organization (WHO)** (2022a) *Global Report on Health Equity for Persons with Disabilities*. Geneva: WHO. Available at <https://www.who.int/publications/i/item/9789240063600> (accessed 19 Dec 2023).
- World Health Organization (WHO)** (2022b) *World Mental Health Report: Transforming Mental Health for All*. Geneva: WHO. Available at <https://www.who.int/publications/i/item/9789240049338> (accessed 19 Dec 2023).
- World Health Organization (WHO)** (2023a) Strengthening the collection of data on disability. Available at <https://www.who.int/activities/collection-of-data-on-disability> (accessed 11 July 2023).
- World Health Organization (WHO)** (2023b) Mental health atlas. Available at <https://www.who.int/teams/mental-health-and-substance-use/data-research/mental-health-atlas> (accessed 26 November 2023).
- World Health Organization (WHO) and the World Bank** (2011) *World Report on Disability*. Geneva: WHO. Available at <https://www.who.int/teams/non-communicable-diseases/sensory-functions-disability-and-rehabilitation/world-report-on-disability> (accessed 20 Dec 2023).
- Yoon J, Kim J, Chung Y, Park J, Sorensen G and Kim S** (2021) Gender differences in under-reporting hiring discrimination in Korea: A machine learning approach. *Epidemiology and Health* 43, e2021099. <https://doi.org/10.4178/epih.e2021099>.
- Yu S** (2018) Uncovering the hidden impacts of inequality on mental health: A global study. *Translational Psychiatry* 8, 98. <https://doi.org/10.1038/s41398-018-0148-0>.
- Zhang H and Holden ST** (2022) Disability types and children's schooling in Africa. Centre for Land Tenure Studies Working Paper 04/22. Available at <https://www.econstor.eu/bitstream/10419/262026/1/clts-wp-22-04.pdf> (accessed 20 Dec 2023).
- Zoellner LA, Bentley JA, Feeny NC, Klein AB, Dolezal ML, Angula DA and Egeh MH** (2021) Reaching the unreached: Bridging Islam and science to treat the mental wounds of war. *Frontiers in Psychiatry* 12, 599293. <https://doi.org/10.3389/fpsyg.2021.599293>.