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Assessment of mental well-being and its socio-economic determinants among older adults in the Rohingya refugee camp of Bangladesh

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Older adults residing in refugee settlements with unhealthy living environments, inadequate access to health care services, and limited psychosocial support are vulnerable to experience mental health problems jeopardizing their mental well-being. The present study aims to explore the mental well-being status and its socio-economic determinants among the older adults living in the Rohingya refugee camp in Bangladesh. This cross-sectional study was conducted among adults aged ≥ 60 residing in five sub-camps within the Rohingya refugee camp of Cox's Bazar, Bangladesh. Data were collected through face-to-face interviews conducted between November and December 2021. The 14-item Warwick-Edinburgh Mental Well-being Scale was used to assess mental well-being. A cumulated score was derived using the scale ranging from 14 to 70, with higher scores indicating greater levels of mental well-being. A generalized linear regression model was used to examine the socio-economic factors associated with the mental well-being of older adults. A total of 864 older adults participated in the study having a mean mental well-being score of 45.4. Regression analysis revealed that the difference in the logs of mental well-being score was expected to be significantly lower among participants aged 70–79 years (β: − 1.661; 95% CI: − 2.750 to − 0.572; p = 0.003), aged ≥ 80 years (β: − 3.198; 95% CI: − 5.114 to − 1.282; p = 0.001), and those with any non-communicable chronic conditions (β: − 2.903; 95% CI: − 3.833 to − 1.974; p < 0.001) when compared to their counterparts. Conversely, the difference in the logs of mental well-being score was expected to be significantly higher among individuals with formal schooling (β: 3.370, 95% CI: 1.855 to 4.886, p < 0.001) and those having additional income besides aid (β: 1.629; 95% CI: 0.642 to 2.615; p = 0.001), compared to their respective counterparts. Our findings highlight the need to provide psychosocial

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assistance to older individuals, particularly those who live in large families, suffer from chronic diseases, and live in socio-economic deprivation.

Keywords Ageing, Bangladesh, Mental well-being, Rohingya refugee

After a brutal military assault, huge violence, and serious human rights violations in Myanmar, the Rohingya individuals were compelled to flee their homeland and find refuge in neighboring Bangladesh[1]. According to the United Nations High Commissioner for Refugees (UNHCR), around one million Rohingya refugees live in Bangladesh, most settled in refugee camps in Cox's Bazar. Most of them remained undocumented in Bangladesh[2] and more than 38,038 individuals are aged 60 years and above[3]. These Rohingya refugees witnessed and experienced killings of family members and relatives, demolition of their establishments and social relationships, heart-wrenching brutalities, rape and violence against them in Myanmar contributing to their worsened mental health and well-being[2]. Mental well-being is defined as 'a dynamic state that refers to individuals' ability to develop their potential, work productively and creatively, build strong and positive relationships with others and contribute to their community'[4].

Rohingya camps are extremely overcrowded[5], making the provision of essential healthcare services including mental health services, purified water, proper sanitation and hygiene (WASH) extremely challenging[6,7]. These unhealthy living conditions and limited access to health and social care service can adversely affect the health and well-being of the refugees, particularly older adults, who are already grappling with chronic illnesses or limited mobility[8,9]. The challenging living conditions within the camp are exacerbated by natural disasters such as cyclones, flooding, and landslides, which adversely affect the availability of resources, including healthcare facilities, further deteriorating their mental health and well-being[10,11].

Studies carried out overseas identified several socio-economic factors such as poor socioeconomic conditions, uncertain asylum status, living in shared accommodations, separation from the family, and limited language skills, and COVID-19 stressors associated with poor mental health and well-being among refugee population[12–14]. However, there are limited peer-reviewed studies on refugees' mental well-being in the context of low-and middle-income countries. In Bangladesh, the number of studies exploring the mental health problems among Rohingya refugees are growing. For example, a few studies documented that factors such as limited job opportunities[15], inadequate humanitarian support[15], COVID-19 stressors[16,17] and gender[18] are associated with mental health problems among camp dwellers. Furthermore, challenges to mental health services (e.g., limited clinical skills, limited cultural competencies and self-care) and risk factors of psychological well-being (e.g., disease burden, worse camp conditions, Myanmar's military coup, poor social networks with relatives, experiences of sexual harassment and assault) were also reported in the literature[2,19].

While young children are also vulnerable to mental health problems in Rohingya camp, several large-scale initiatives including nutritional support[20] basic education[21], baby-friendly spaces[22] are currently in place targeting the children in the camp. Prior research also explored mental well-being among children residing in the Rohingya refugee camp[23]. However, there are limited empirical studies focusing on older people's mental well-being and its socio-economic determinants such as age, formal schooling, family size, living arrangements and feelings of loneliness. To fill up this gap in existing literature, our research aims to investigate the mental well-being of older adults residing in Rohingya camps and its associated socio-economic factors.

The significant number of Rohingya older adults in need of mental health support, combined with limited resources and a shortage of specialists, presents a formidable challenge for comprehensive mental health care. Therefore, an urgent need exists for a comprehensive understanding of the mental well-being of older Rohingya adults[17,24]. By exploring their mental well-being status and its associated determinants, the current study seeks to offer insights into and recommendations to stakeholders, policymakers, and international organizations regarding the mental health requirements of this vulnerable population.

Subjects and methods

Study design and participants

This study followed a cross-sectional design and was conducted between November and December 2021. Data were collected from older adults aged 60 years and above residing in five selected sub-camps of the Rohingya refugee camp in Bangladesh. A required sample size of 973 was calculated based on the following parameters: a 50% prevalence (unknown), a 5% margin of error, a 95% confidence level, an 80% test power, and a 25% non-response rate. These assumptions for parameters (i.e., prevalence rate, margin of error, power of the test, and non-response rate) to determine the sample size were selected based on prior research conducted in the same setting[17].

A national NGO, currently operating in five sub-camps of Rohingya refugee camp had a comprehensive list of all individuals residing in the designated five sub-camps. Every individual was identified by a unique number (starting from 1) in the list, and it has information about age, sex and sub-camp number for each individual. In the next step, we retained only those individuals aged 60 years and above in the list, which served as our sampling frame. The list was not stratified based on sex or sub-camp number as we deemed to perform simple random sampling. Thereafter, using computer-generated random numbers, we randomly selected the required number of participants from this list. The age of the beneficiaries was validated using the SMART card issued to each camp resident by UNHCR. The inclusion criteria comprised Rohingya older adults aged ≥ 60 years residing in the refugee camp. The exclusion criteria included severe mental conditions (clinically diagnosed schizophrenia, bipolar mood disorder), a hearing disability, or inability to communicate.

Data collection tools and techniques

A pre-tested semi-structured questionnaire developed in the Bengali language was used for data collection. Data were electronically recorded in the SurveyCTO mobile app (https://www.surveycto.com/) by two enumerators who were local residents, fluent in local Bengali dialects, and possessed prior experience in conducting health surveys using electronic platforms. Before the data collection, the enumerators underwent an extensive three-day training on the data collection tool and techniques conducted by the research team.

The English version of the questionnaire (Supplementary file 1) was first translated into Bengali and then back-translated into English by two staff members of the participating local NGO proficient in both English and local Bengali dialects. In this regard, we would like to acknowledge that we recognize Rohingya language is a distinct, spoken language from Bengali. The Bengali version of the tool was piloted among a small sample (n = 10) of Rohingya older adults from the selected sub-camps to refine the language for the final version. The participants did not suggest any corrections or modifications to the Bengali-translated tool. Data were collected using this finalized tool through face-to-face interviews with participants, each lasting approximately half an hour.

Measures

Outcome measure

The primary outcome measure was mental well-being, assessed using the Warwick-Edinburgh Mental Well-being Scale (WEMWBS)[25]. The WEMWBS consists of 14 positively worded items, including positive affect (feelings of optimism, cheerfulness, relaxation), satisfying interpersonal relationships and positive functioning (energy, clear thinking, self-acceptance, personal development, competence and autonomy). Participants rate their agreement with each statement on a 5-point Likert scale, ranging from "none of the time" (1 point) to "all of the time" (5 points). A cumulative score was calculated by summing the item scores, resulting in a possible range from 14 to 70, with higher scores indicating greater levels of mental well-being. The Bengali version of the previously validated questionnaire[26] was employed in this study. Prior to the data collection, authorization to use the WEMWBS was obtained through a user license (Registration ID: 579233277).

Explanatory variables

The explanatory variables for this study were selected through a review of existing literature[17–19,24,27–29]. The selected explanatory variables included: age in years (categorized as 60–69, 70–79 and ≥ 80), sex (male/female), marital status (currently married/without partner), having formal schooling (no/yes), family size (≤ 4 or > 4), family monthly income (dependent solely on aid/receive supplementary income), living arrangements (living alone or with family), current presence of chronic condition (no/yes), and loneliness (yes/no).

Family monthly income was categorized as either solely dependent on aid or had some supplementary income. While Rohingya refugees typically rely on aid, additional income is sometimes possible through small businesses and other income-generating activities such as small businesses or household-based cattle rearing.

Self-reported data on pre-existing non-communicable chronic conditions such as arthritis, hypertension, heart diseases, stroke, hypercholesterolemia, diabetes, chronic respiratory diseases, chronic kidney disease, and cancer were collected. For each condition, participants were asked if they were diagnosed by a health professional and/or if they were taking any prescription medications for that condition. It was then determined if the participants were suffering from any of these conditions and categorized as yes or no.

Loneliness was assessed using the 3-item UCLA Loneliness scale[30], previously used in the Bangladeshi population[31]. Each scale item was evaluated through yes/no questions, encompassing the following three aspects: (i) lack of companionship, (ii) feeling left out, and (iii) experiencing isolation within the last two weeks. Responses were rated on a 3-item Likert scale: hardly ever (1 point), some of the time (2 points), and often (3 points). Participants were deemed to be experiencing loneliness if they responded 'some of the time' or 'often' to any items[32].

Method of analyses

We performed descriptive analyses to explore the socio-economic characteristics of the participants. The bivariate analyses explored the situation of mental well-being among the participants in relation to their socio-demographic characteristics. As the outcome data is discrete in nature, we executed a generalized linear model with a Poisson family distribution and an identity link function to determine the influencing factors associated with mental wellbeing among the participants[33,34]. All the statistical analyses were executed using the Stata (Version 14.0).

Ethics approval

The study was approved by Jashore University of Science and Technology's institutional review committee (Ref: ERC/FBST/JUST/2020–61), and all methods were performed in accordance with the guidelines of the Declaration of Helsinki. The written permission to enter the camp and conduct the survey was obtained from the Office of the Refugee Relief and Repatriation Commissioner (RRRC). Both verbal and written informed consent was sought from the participants before administering the survey. Thumbprints were taken from participants unable to read and write, and informed consent was obtained from their legal guardian(s). Participation was voluntary without compensation.

Patient and public involvement

Patients and/or public were not involved in the development of research question, study design, conducting study and result dissemination.

Results

Participants' characteristics and well-being status

The characteristics of the participants and their mental well-being stats are presented in Table 1. Out of the 973 individuals approached, 864 participants consented to participate in the study, yielding a response rate of 88.8%. Most participants were aged between 60 and 69 years (72.3%), male (56.3%), married (79.1%), and had a family size exceeding four members (56.9%). Nearly all participants had no formal schooling (89%), and more than half relied solely on aid for their livelihood (67.1%). A small proportion of the sample lived alone (9.5%). Furthermore, approximately half of the participants were suffering from non-communicable chronic conditions (50.1%), and four out of five participants reported feeling lonely (81.1%).

The average score of each of the items of WEMWBS is presented in Fig. 1. Overall, the mean mental well-being score was 45.4 among the participants, and those aged between 60–69 years, with formal schooling, had some additional income apart from aid, and no non-communicable chronic diseases, exhibited significantly higher mean well-being scores (Table 1).

Factors associated with mental well-being

Table 2 illustrates the socio-economic factors associated with the participants' mental well-being in both unadjusted and adjusted analysis. The adjusted analysis revealed that, the difference in the logs of mental wellbeing score was expected to be 1.661 and 3.198 units lower among those aged 70–79 years (β: − 1.661; 95% CI: − 2.750 to − 0.572; p = 0.003) and > = 80 years (β: − 3.198; 95% CI: − 5.114 to − 1.282; p = 0.001) respectively, compared to the individuals aged 60–69 years. Similarly, the difference in the logs of mental wellbeing score was expected to be 2.903 units lower among participants who were suffering from any non-communicable chronic conditions (β: − 2.903; 95% CI: − 3.833 to − 1.974; p < 0.001) when compared to their counterparts. Conversely, the difference in the logs of mental wellbeing score was expected to be 3.370 and 1.629 units higher among individuals having

Characteristics	Overall		Mental well-being score		
	n	%	Mean	SD	*P*-value
Overall	864	100	45.4	10.6	
Age (years)					
60–69	625	72.3	46.0	10.9	**0.013**
70–79	190	22.0	44.2	9.6	
≥ 80	49	5.7	42.3	10.3	
Sex					
Male	486	56.3	45.6	11.0	0.397
Female	378	43.8	45.0	10.1	
Marital status					
Married	683	79.1	45.6	10.7	0.214
Without partner[1]	181	20.9	44.5	10.2	
Formal schooling					
No	769	89.0	45.0	10.6	**0.001**
Yes	95	11.0	48.7	10.2	
Family size					
≤ 4	372	43.1	46.2	11.0	0.051
> 4	492	56.9	44.8	10.3	
Family monthly income					
Dependent solely on aid	580	67.1	44.8	10.7	**0.030**
Received supplementary income	284	32.9	46.5	10.4	
Living arrangements					
Living with family	782	90.5	45.3	10.3	0.418
Living alone	82	9.5	46.3	13.3	
Suffering from non-communicable chronic conditions					
No	431	49.9	46.9	10.4	< **0.001**
Yes	433	50.1	43.9	10.7	
Feeling of loneliness					
No	163	18.9	44.4	10.7	0.176
Yes	701	81.1	45.6	10.6	

Table 1. Overview of the participants' characteristics in total, along with the average score for mental well-being (N = 864). [1]Without partner included divorced, separated and never married. Significant values are in bold.

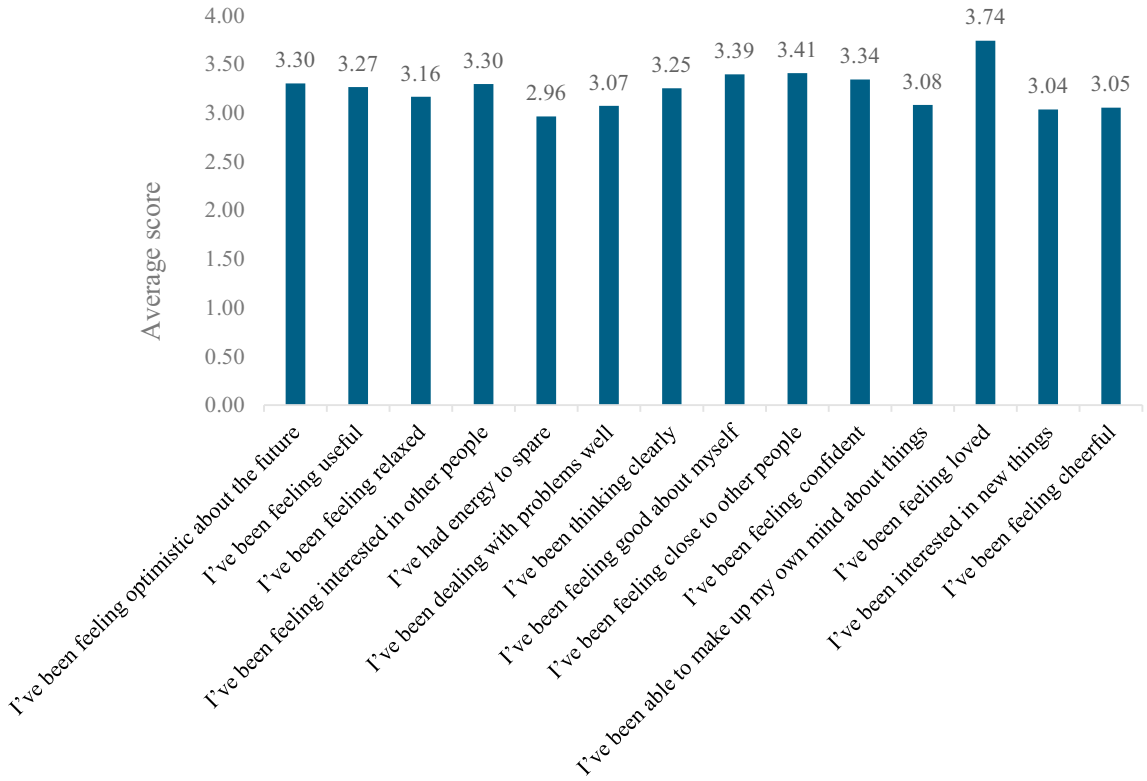

Figure 1. Average score of each item of mental well-being scale.

formal schooling (β: 3.370, 95% CI: 1.855 to 4.886, $p < 0.001$), and who had a supplementary income beyond aid (β: 1.629; 95% CI: 0.642 to 2.615; $p = 0.001$) respectively, compared to their reference group.

Discussion

This study aimed to investigate the mental well-being of Rohingya older adults residing in the refugee camp in Cox's Bazar, Bangladesh. The findings revealed that poor mental well-being was more prevalent among the oldest age group, and those with chronic health conditions. Conversely, individuals with formal education and supplementary income beyond aid demonstrated significantly higher mental well-being scores.

The current study found that the older Rohingya refugees had poorer mental well-being than their younger counterparts. Our findings are consistent with previous studies conducted among older refugee populations[35] and the general older population[28]. Several factors contribute to the mental well-being challenges faced by older refugees, including distress, dependency on family members, loss of home and limited social networks[36]. Another key factor is the increased stress of displacement, stemming from their stronger attachment to their homeland[37]. Further, a qualitative study has provided insight that older refugee adults often experience feelings of displacement and the sense that they are 'aging in the wrong place'[38]. Additionally, research suggests that older adults face difficulties adapting to cultural and linguistic differences in the host country due to their lower behavioral flexibility and resistance to accepting new values and customs, which may ultimately lead to lower levels of mental well-being[35,39,40].

Our study suggested that older adults with formal education had higher levels of mental well-being than those without formal education, a finding supported by previous research[41–44]. Evidence indicates that higher education among older adults has been linked to a more positive mental outlook[45], a better overall attitude towards life[46], greater access to social and material resources, and better preparation to cope with adverse life experiences[47] and feelings of hopelessness[48]. Research has also suggested that hopelessness often results from repeated exposure to adverse events and losses[48–50], a common experience among refugee populations enduring systematic persecution over an extended period[51]. Consequently, Rohingya older adults with lower levels of education and limited access to education in the camp may face unique challenges in coping with their stateless status and the associated hopelessness.

The current study found that relying on financial aid alone negatively influenced the mental well-being of study participants. Notably, these individuals may have had income and assets and led dignified lives prior to displacement. Therefore, losing everything and depending solely on aid in the host country can lower self-esteem[52], affecting mental well-being[53]. Evidence indicates that mental health links restricted economic opportunities to poor mental health in the refugee population[35]. Refugees who rely solely on aid often struggle to meet basic needs, causing anxiety about affording food and medicine[54]. In general, older adults face limited economic opportunities, especially in refugee settings with high employment needs but limited job options, leading to increased mental distress[55]. Although the connection between economic opportunities for older refugees and mental well-being remains understudied, prior research among older Korean immigrants showed a positive link between

Characteristics	Unadjusted			Adjusted		
	Coefficient	95% CI	*P*	Coefficient	95% CI	*P*
Age (year)						
60–69	*Ref*			*Ref*		
70–79	− 1.805	− 2.889, − 0.721	**0.001**	− 1.661	− 2.750, − 0.572	**0.003**
> = 80	− 3.719	− 7.437, − 0.014	**0.000**	− 3.198	− 5.114, − 1.282	**0.001**
Sex						
Male	*Ref*			*Ref*		
Female	− 0.617	− 1.522, 0.288	0.181	− 0.071	− 1.099, 0.958	0.893
Marital status						
Married	*Ref*			*Ref*		
Without partner[1]	− 1.105	− 2.201, − 0.009	0.048	− 0.379	− 1.584, 0.825	0.537
Formal schooling						
No formal schooling	*Ref*			*Ref*		
Having formal schooling	3.681	2.201, 5.162	**< 0.001**	3.370	1.855, 4.886	**< 0.001**
Family size						
≤ 4	*Ref*			*Ref*		
> 4	− 1.426	− 2.335, − 0.517	**0.002**	− 1.322	− 0.061, − 2.260	− 0.384
Living arrangement						
Living with family	*Ref*			*Ref*		
Living alone	0.999	− 0.547, 2.545	0.205	0.837	− 0.771, 2.446	0.307
Family monthly income						
Living on aid only	*Ref*			*Ref*		
Have additional income	1.669	0.707, 2.631	**0.001**	1.629	0.642, 2.615	**0.001**
Suffering from non communicable chronic conditions						
No	*Ref*			*Ref*		
Yes	− 2.953	− 3.852, − 2.055	**< 0.001**	− 2.903	− 3.833, − 1.974	**< 0.001**
Feeling of loneliness						
No	*Ref*			*Ref*		
Yes	1.250	0.112, 2.388	**0.031**	0.729	− 0.460, 1.919	0.230

Table 2. Socio-economic factors associated with mental well-being among the participants (N = 864). [1]Without partner included divorced, separated and never married. Significant values are in bold.

employment and subjective well-being[56]. Thus, in addition to government support or aid, providing part-time or full-time work may increase economic growth and enhance mental well-being outcomes for Rohingya older adults. Despite this, government and international assistance often prioritize youth and adults for capacity and skill development, leaving older adults without income-generating opportunities[57]. Thoughtful policymaking and measures can address both the economic inclusion of older refugees and enhance their mental well-being.

Furthermore, our study reported a significant association between non-communicable chronic conditions and the mental well-being of Rohingya older adults living in the camp of Cox's Bazar. Mental well-being is closely linked to physical health, with mental health issues commonly considered comorbidities connected to various chronic diseases[58]. Prior studies have shown that the presence of medical conditions strongly predicts depression among refugees, and older adults tend to suffer from a higher prevalence of various medical conditions making them more vulnerable to poor mental well-being[17,59]. Non-communicable diseases present particular challenges in refugee settings due to limited access to healthcare facilities, diagnostics, and treatment options, high costs, and the need for continuous care and medication[60]. Furthermore, older refugees face mobility constraints and limited decision-making power within their households, making it challenging to access available health services[37]. Additionally, the reluctance of older adults to seek medical care, often due to language barriers and discomfort with modern medicine, compounds their chronic conditions and mental health issues[61]. Stronger religiosity among Rohingya older adults can also contribute to their hesitation to seek care, especially when provided by a medical professional of the opposite sex[62].

Implications for policy and practice

Exploring the mental well-being of older adults in Rohingya refugee camp is a crucial first step in ensuring the successful implementation of a wide range of mental health promotion programs. Currently, many organizations, led by UNHCR and the International Organization for Migration, provide mental health and psychosocial support in the Rohingya camp[63] through three approaches: community-based psychosocial support, scalable psychological interventions, and mental health services in primary healthcare facilities[64]. Despite this, the high prevalence of mental health issues experienced by refugees living in the Rohingya camp suggests the need for more targeted psychological interventions and mental health services. Furthermore, existing services cover all age

groups, highlighting the need for a broader range of activities tailored to the mental well-being of older adults. Only a few organizations, such as Young Power in Social Action (YPSA) focus on meeting the specific needs of older adults in Rohingya camp. They offer limited services, including recreational activities, medical aid, counseling, age-friendly spaces, income-generating activities, and home-based care services . Organizations should prioritize addressing the mental health needs of older adults and collaborate effectively to design, offer, and implement services that target their mental well-being. Activities such as social engagement, income-generating initiatives, social support systems, counseling services, and recreational activities should be considered to ensure the mental well-being of this group[2]. Donors and implementing bodies must pay attention to these vital issues, as programs targeting older adults remain scarce in Rohingya camp. It is also important to increase opportunities for education for all camp dwellers including informal arrangements for the older population. Moreover, we highlight the need for screening of mental health conditions among people with chronic conditions and appropriate intervention should be in place to address both chronic condition and mental health unmet needs of the older adults who need greater level of support than other age groups.

Strengths and limitations of the study

The present study has its strengths and limitations. This research exclusively focuses on Rohingya older adults residing in the world's largest refugee camp in Bangladesh. The findings will contribute to the current body of knowledge regarding the mental well-being of refugees, displaced, migrant, and stateless communities. However, the study has several limitations. Firstly, it is cross-sectional in nature, providing a snapshot of the situation without establishing causality. Additionally, a limited number of sub-camps were selected due to restrictions on data collection. The generalizability of the study could be affected by the purposive selection of the five sub-camps for the study. A limited number of variables included in this study and potential challenges in the measurement of mental well-being due to stigma were additional limitations. Finally, the current study assessed the socioeconomic determinants of mental well-being only, thus excluding other predictors.

Conclusions

The study's findings highlight the multifaceted nature of mental well-being and underscore the importance of socio-economic factors such as age, family size, education, and income in shaping the mental well-being of older Rohingya adults in this context. The study underscores the need to draw the attention of policymakers and public health practitioners to the unmet needs of vulnerable Rohingya older adults and to address these needs by designing and implementing interventions that promote their mental well-being through the modification of factors affecting mental health. Further qualitative studies are required to identify underlying factors guiding holistic approaches to address older adults' needs.

Data availability

The datasets generated and/or analyzed during the current study are not publicly available due to the organizational policy of the institution undertaking the research but are available from the corresponding author on reasonable request.

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Author contributions

SKM, AMA and UNY conceived and designed the study. SKM carried out the data analysis and interpretation of the result. AA, NA, SB, SZE, MSIM, AZ, PKM, AAMR, SDS and SKM contributed to writing the first draft of the manuscript. SKM, UNY, SG, RAM, AMA, MNH and SR commented extensively on the draft of the manuscript to finalize it. All authors read and approved the final version of the manuscript.

Competing interests

The authors declare no competing interests.

Additional information

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