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Article

Physical activity as a psychosocial intervention among Rohingya refugees in Bangladesh: a rapid ecological community assessment

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Abstract

Over 907,000 Rohingya refugees are currently living in mostly makeshift camps in Bangladesh with limited resources to address their psychosocial needs. Physical activity is a scalable, low-cost intervention effective for prevention and treatment of non-communicable diseases and mental health problems. Understanding community attitudes to physical activity and mental health is key to designing community endorsed and accessible interventions. We employed the 'community readiness model', a tool to assess community climate, needs and resources regarding physical activity as a community-driven psychosocial intervention. Fifteen Rohingya key informants were interviewed across multiple refugee camps in Cox's Bazaar district in January 2019. Community readiness scores were calculated. Thematic analysis explored community-identified priorities. Community members strongly endorsed physical activity as an effective biopsychosocial strategy for relieving tension (a local idiom of distress). Despite leadership endorsement, space and resources to support community initiatives are extremely limited. For women, restrictions of movement were identified as barriers to participation. Physical activity is a feasible and acceptable community-identified strategy to promote psychosocial wellbeing among Rohingya refugees. Resources for physical activity programmes are extremely limited despite the identified social, mental and physical health benefits.

Key implications for practice

- Physical activity was identified as a psychosocial strategy by Rohingya refugees living in Cox's Bazar, Bangladesh, which can help to relieve tension, which is a local idiom of distress.
- Resources (such as space and equipment) to support community-led physical activity initiatives are limited, despite support from community leadership.
- Access to physical activity is limited for women, due to security fears and cultural attitudes, as well as for people with disabilities and older people, due to overcrowding and lack of accessibility planning.

Keywords: ecological, mental health, physical activity, psychosocial, refugee, Rohingya

Introduction

Background

As a result of persecution in their home of Rakhine State in Myanmar, over 900,000 Rohingya refugees have fled to neighbouring Bangladesh (UNHCR, 2019) in what the United Nations High Commissioner for Human Rights has described as a '*textbook example of ethnic cleansing*' (United Nations Human Rights Office Of The High Commissioner, 2017). Overwhelmingly, the majority of Rohingya refugees in Bangladesh live without legal rights in squalid camp situations (Arie, 2019) and with very few livelihood or education prospects (Bhatia et al., 2018). Previous data from needs assessments have demonstrated high levels of mortality among young Rohingya men

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(consistent with war-related violent deaths), low levels of childhood vaccination, poor literacy and increasing poverty (Bhatia et al., 2018). Rohingya refugees contend with multiple and comorbid health problems that cannot be addressed within an emergency relief framework alone. Non-communicable diseases (NCDs), including mental health problems and diabetes, are a major and growing health burden among refugees in low-resource settings, yet communicable disease prevention and management are understandably prioritised. In situations of statelessness and protracted displacement, there is a need to develop community-driven interventions which can address multiple health and social problems, as those with an exclusive focus on either physical or mental problems will fail to address challenges in their ecological context (Wells, Steel, Vancamfort, Ward, & Rosenbaum, submitted).

Communities exposed to conflict and displacement face the dual challenges of exposure to human rights violations and ongoing living stressors, both of which combine to increase the risk of poor psychological outcomes (Riley, Varner, Ventevogel, Taimur Hasan, & Welton-Mitchell, 2017; Steel et al., 2009; Wells, Steel, Abo-Hilal, Hassan, & Lawsin, 2016). There is increasing interest in addressing the mental health impact of conflict and forced displacement among the Rohingya community (Tay et al., 2018). The unique cultural heritage of the Rohingya necessitates that care should be taken to understand the cultural idioms of distress that are of relevance to this community and to respect the cultural consultation processes in engaging Rohingya refugees (Silove, Ventevogel, & Rees, 2017). While interventions, including counselling, are offered through some charitable originations, these have limited reach and there is a clear need for scalable, evidence-based, psychosocial interventions which can reach larger numbers and are built on community resilience, as outlined in international best practice guidelines in humanitarian settings (IASC, 2007). Especially for vulnerable populations, including 32,983 single-female households and nearly 500,00 children (Arie, 2019; UNHCR, 2019) as well as people living with disabilities, cost-effective group interventions which can target both physical and mental health simultaneously are urgently required.

One potential group intervention for improving both physical and mental health outcomes is participation in physical activity (PA) and sports. Evidence from predominantly high resource settings shows that PA reduces the odds of future depressive episodes regardless of age or geographical location (Schuch et al., 2018). Further, the protective role of PA against mental disorders has also been investigated among children who have experienced adverse childhood events with promising preliminary evidence justifying further research in this area (Hughes, Ford, Davies, Lucia, & Bellis, 2018). PA is also associated with improved mental and physical health (Rosenbaum, Tiedemann, Sherrington, Curtis, & Ward, 2014) and reduces symptoms of depression (Schuch et al., 2016), posttraumatic stress disorder (PTSD) (Rosenbaum, Vancampfort, Steel, Newby, Ward, & Stubbs, 2015), anxiety disorders (Stubbs et al., 2017) and psychotic illnesses (Firth, Cotter, Elliott, French, & Yung, 2015).

Given the potential utility of PA, including sports, as both a feasible and scalable psychosocial intervention within the Rohingya refugee camps (Wells et al., submitted), we aimed to obtain a snapshot of how Rohingya refugees living in camps relate to issues surrounding PA, sport and mental health. To do this we employed the '*Community Readiness Model*' (Edwards, Jumper-Thurman, Plested, Oetting, & Swanson, 2000) to conduct a rapid community readiness assessment, a method we have previously employed with Syrian refugee community members in Jordan (Wells et al., 2019). This approach focuses on working together with community key informants to develop an understanding of cultural and social attitudes, resources and community engagement towards a health issue and to work together with community members to promote interventions which build on local knowledge, strengths and resources. We adapted the semi-structured interview to explore local conceptions of mental health and cultural understandings of PA. We aimed to understand how resource availability, community perceptions, knowledge and leadership impact on access to PA and psychosocial interventions for Rohingya living in Bangladesh.

Method

All participants provided informed consent and ethical approval was obtained through the University of New South Wales Human Research Ethics Committee, approval number HC180867.

The community readiness model

The community readiness model (CRM) provides a rapid method for assessing a community's attitudes and capacity to address a social issue to promote change (Thurman, Vernon, & Plested, 2007). The CRM uses the local knowledge of key informants to identify barriers to implementation and consider local culture, available resources and social structures (Thurman et al., 2007). The CRM authors argue that communities or groups differ in their readiness to address an issue, move through stages of readiness as they conceive of, realise, maintain and enhance intervention programmes, and that interventions need to be appropriate to this readiness stage to be effective and sustainable (Edwards et al., 2000). Further, assessing community readiness may help practitioners and policy makers identify necessary resources and gaps to be addressed prior to implementation of an intervention (Thurman et al., 2007). A key strength of the CRM is that it promotes a dimensional understanding of how readiness may differ across a community. The CRM assesses nine community stages of change including problem recognition, information gathering for implementation and local staff and sustainability strategies (see Table 1).

Participants

Fifteen key informants were interviewed. Key informants are people holding key positions in the community who are knowledgeable about the issue under study (Thurman et al., 2007). A sample size of four to five

Table 1: The dimensions and stages of the community readiness model

CRM dimension	Dimension descriptors
Community efforts	What efforts and programmes are in place?
Knowledge of efforts	Do community members know about local efforts? Who can access them?
Leadership	Are leaders and influential community members supportive of efforts?
Community climate	What are the prevailing attitudes of the community towards physical activity?
Community understandings	What do community members know about the health benefits of physical activity?
Resources	To what extent are local resources—people, time, money, space, etc.—available to support efforts?

CRM stages	Stage description	CRM recommended intervention
1. No awareness	It is not recognised by the community as a problem.	Share information with individuals and groups.
2. Denial/resistance	Some are concerned, but it is not seen as a local issue.	Start conversations in the community. Engage with community organisations with wide reach.
3. Vague awareness	Most are concerned, but there is no immediate motivation to do anything about it.	Bring attention to what the community can do about the issue.
4. Preplanning	Efforts are not yet focused or detailed.	Raise awareness through concrete ideas.
5. Preparation	Planning in earnest. The community offers modest interest in efforts.	Gather information to help community members plan more specific strategies.
6. Initiation	Enough information has been gathered to initiate efforts. Activities are underway.	Provide community-specific information. Conduct training, identify gaps, evaluate efforts.
7. Stabilisation	Activities are supported by key stakeholders. Staff are trained and experienced.	Conduct trainings, present evaluation results, community meetings to maintain engagement.
8. Confirmation/ expansion	Efforts are established. Community members feel comfortable using services and are supportive.	Formalise structures, use evaluation data to modify efforts, initiate policy change through local officials.
9. High level of community ownership	Detailed and sophisticated knowledge exists. In-depth evaluation guides new directions.	Maintain momentum and continue growth, advanced training, diversify funding.

Adapted from Plested et al. (2009).

key informants has been used in other CRM studies (Edwards et al., 2000). Due to the diverse nature of this community, which includes both those registered under UNHCR as part of the residual case load from the 1992 influx and those arriving following the August 2017 military operation in Rakhine State, we purposively sampled 15 key informants. Community stakeholders assisted in selecting key informants who were knowledgeable about Rohingya refugee community attitudes to PA, mental health and psychosocial health. Eligible participants were Rohingya community leaders, teachers, community health workers and members of the refugee community and were recruited by community leaders.

Measures

CRM semi-structured, open-ended interview questions were adapted to the local context. Examples included: '*How much of a concern is physical activity in the community? How much of a concern is physical activity to the leadership in your community? What is the community's attitude to physical activity? What type of information is available in the community regarding physical activity? How would community members access physical activity?*' Interviews began with both parties defining key terms including PA, exercise, sport and mental health to prevent misunderstanding. Key informants answered the questions in terms of their knowledge of attitudes and perceptions within the Rohingya refugee community in Bangladesh.

Procedures

Interviews were conducted in multiple refugee camps in Ukhia and Teknaf Upuzilas in Cox's Bazar, as well as Cox's Bazar town in January 2019. Author 2 worked in a humanitarian capacity within Bangladesh for three years and has extensive networks within the local community through which participants were recruited. Local stakeholders approached key informants through their professional networks. Purposive sampling ensured they represented a range of community views and demographics. Interviews of 45–60 minutes' duration were conducted in either Rohingya or English, depending on participant preference, with a translator of the same gender provided when required.

Data Analysis

Two parallel coding systems were applied to analyse the findings. The first involved the application of the community readiness coding system and the second involved thematic analysis using qualitative data analytic techniques.

Community readiness analysis

The CRM provides a nine-point anchored rating scale, a numbered series of statements for each dimension, to assist in determining readiness stage. The CRM manual can be obtained from www.nccr.colostate.edu/order/. Authors 1, 2 and 5 conducted and scored all interviews. Coders read the whole interview and determined the anchored statement which best described the community's readiness level, as described by the key informant. Coders then met to reach consensus for each interview. The community readiness scores were averaged across key informants to generate the community calculated score (Lawsin, Borrayo, Edwards, & Belloso, 2007; Plested, Jumper-Thurman, & Edwards, 2009). Average readiness scores were broken down by

Table 2: Demographic characteristics of participants

ID	Age	Gender	Years in Bangladesh	Camp
1	20	M	0.5	Shalbon
2	21	M	0.5	Camp 26
3	21	F	1	Shalbagan
4	21	F	1	Shalbagan
5	27	M	27	Kutapalong registered
6	31	M	26	Kutapalong registered
7	26	M	0.5	Shalbagan
8	30	M	1	Shalbon
9	20	F	1	Shalbagan
10	20	F	1	Shalbagan
11	40	M	25	Nayapara registered
12	50	M	1	Kutapalong extension
13	45	F	1.5	Kutapalong extension
14	45	F	1.5	Kutapalong extension
15	42	F	27	Nyapara registered

Table 3: Community readiness ratings

CRM dimension	Total	Male	Female	Newly arrived	Established
Community efforts	3.5	3.6	3.4	2.8	5.3
Knowledge of efforts	2.5	2.5	2.4	2.0	3.5
Leadership	2.7	3.0	2.2	2.1	4.0
Community climate	3.7	3.8	3.6	3.2	4.8
Community understandings	3.5	3.4	3.8	3.2	4.3
Resources	2.4	2.4	2.4	2.0	3.3

Numbers refer to stage of community readiness as described in Table 1. Scores represent average scores across participants in each group. Community readiness scores (height axis) on each dimension (depth axis) for each participant (width axis).

gender and length of time in Bangladesh (established >20 years and newly arrived since 2017, as readiness was likely to differ for these groups).

Thematic analysis

For cross-validation and to provide additional context for the findings, thematic analysis (Braun & Clarke, 2006) with key techniques from grounded theory (Corbin & Strauss, 2008), was undertaken by authors 1 (an Australian psychologist), 2 (an Australian humanitarian specialist) and 5 (an Australian exercise physiologist). Interviews were transcribed verbatim and analysed in *QSR NVivo* (version 11). Following open coding and cross-coding, sensitising questions (Charmaz, 2014) and constant comparison (Corbin & Strauss, 2008) were used to test emerging hypotheses. Themes emerging from the interviews which pertained to the CRM dimensions were extracted and organised under the headings. With these themes in mind, the interviews were then recoded to test for exceptions and inconsistencies and the themes were modified accordingly.

Results

All fifteen key informants (eight male) were Rohingya refugees living in Bangladesh. Eleven respondents had arrived in the months following August 2017, while four had been living as stateless refugees for more than 25 years. See Table 2 for details of respondents.

Community readiness

Overall community readiness ratings ranged between 2 (denial /resistance) and 5 (preparation). Table 3 shows community rated readiness for each dimension. This is further broken down into ratings by males and females and also ratings by newly arrived refugees and established refugees who have lived in the camps for more than 25 years. The readiness stages for newly arrived refugees ranged between 2 (denial/ resistance) and 3 (vague awareness), indicating that implementation of community efforts, leadership engagement, community attitudes and resources were all at a very basic level. In contrast, readiness stages for established refugees ranged between 3 (vague awareness) and 5 (preparation). These participants described a range of established community activities, such as football, which were predominantly available to young men. In addition, they described how leadership was engaged with these community-wide activities and that they had a high level of acceptance and understanding from the community. However, they unanimously described a lack of resources to support these community-run initiatives. Participants also described a lack of access to PA opportunities for women. However, this was described by males and females alike, accounting for the lack of discrepancy between genders in reported community readiness scores. Figure 1 shows the readiness rating for each participant on each dimension.

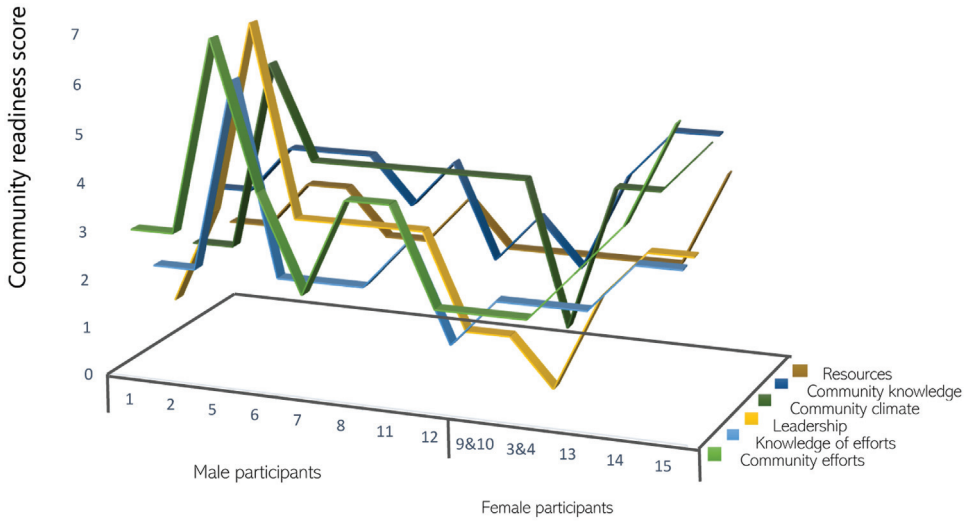

Figure 1: Community readiness ratings for each participant

Community efforts

Fourteen out of fifteen participants could not identify externally run, ongoing, PA initiatives. However, many described community-led activities, such as football tournaments, which often involve the whole community and are organised through community-led structures.

Participants reported engaging in a variety of traditional sports like '*kolom*' (a type of volleyball), as well as football and cricket.

'We are doing a lot. We have many players in the camp, we have a team. We did this in 2009. We used these teams to support others in doing community work in the camp.' **Male team captain, Kutapalong (KTP), established**

People collectively make use of available resources to organise PA. These have involved networks of committees and have formed the basis for organising activities such as sporting tournaments.

'We do a little bit, when we get rations . . . we sell them, and after getting some money we buy some equipment and use that.' **Male team leader, Nayapara (NYP), new arrival**

'We have 5 committee members . . . . We set that up by ourselves. It's the field management committee.' **Male team captain, KTP, established**

The same structures have been referenced to support community activism and action. These have been used to help fellow Rohingya meet their basic needs, especially those who had arrived in the recent influx.

'We cook, help widows, supported people who were crossing the border in the crisis...Giving blankets. . . . we also do blood donations from amongst our team if anyone needs.' **Male team captain, KTP, established**

Community structures around sporting teams almost exclusively involved younger men. However, one married woman described organising walking groups for women between 4 am and 7 am. That is, organised at a block level, older women would organise for groups of women to go walking together in the street in the early morning, while the men in the camp tend to be asleep. We note that this was the only participant who described organised physical activities for women.

'Around this block one group . . . Everyone together one group in the street. Unmarried female outside, they can go outside in the morning because there are no men in the street. The street is free.' **Older female community leader, NYP, established**

Despite limited opportunity and resources, sport participation was seen (amongst males) as a potential catalyst for upwards mobility, community pride, a way to build social cohesion.

'It is our plan to create good players, to support him . . . to create mentality well, we control the youth not to do any bad works, to busy them in the sports and to help them understand to do their fitness good.' **Male team captain, KTP, established**

In terms of initiatives run by NGOs, five people reported there were no activities, four reported other kinds of programmes (such as instructions to wash hands) which did not include information about PA, one person reported intermittent activities for children in school and two people reported NGO programmes that provide only information about the health benefits of PA.

'No organisations, no one helped us.' **Two young females, Shalbagan, new arrival**

Knowledge of community efforts

Given that there were so few identified NGO-organised PA activities, there was also very limited awareness of these activities.

Leadership

For those whose families had come in the 1990s, leadership structures were well established. This included around

football teams and elected officials within each camp block. One participant said that leaders were not interested in PA as they were too busy with other priorities, while another said that the leadership is not aware of PA as an issue. However, four participants stated that leaders are interested in PA, but lack resources to support efforts.

'[elected officials] they think that physical activity is most important . . . They often go with them to watch the match, but unfortunately they are not capable to provide the equipment.' **Young father, Shalbon, new arrival**

For more recently arrived families, leaders had not yet been elected or informants were not aware of any structures.

Community climate

Participants unanimously reported that PA is positively viewed by the community, stating that people think it is important, it lifts tension and it is a source of community psychosocial support. They described how community football matches draw large crowds and help build ties within and between communities.

'There are blocks, sometimes they make competition from one to another and sometimes . . . camp to camp . . . married to unmarried . . . many people [go to watch] . . . because mostly the community people have no park where people can go and enjoy, so when there is something like this, there is a big gathering for entertainment. When there is a goal, people scream a lot.' **Young male community leader, KTP, established**

However, expectations that people will have access to PA seemed to be limited to young, able-bodied men. Participants stated that older people are not interested or expected to engage in PA, people with disabilities did not generally have access to any PA and there was controversy about women's involvement.

'[attitudes to physical activity] It's positive for the man, for the boys. Still people are not positive for the girls. Our people are mostly not literate, so they think that girls should stay inside the home, especially 14-16 when they are grown up, they don't let them come out.' **Young male community leader, NYP, established**

This particularly impacted on young unmarried women, due to reports that young women are often attacked or harassed by groups of young men when travelling to use the toilet facilities. In addition, participants reported community beliefs that young women are at risk of being attacked by *Jinn*, spirit beings who may do them harm. These *Jinn* (or *Jadu*) were understood to cause both physical and mental sickness. As a result, once girls reach puberty, until they are married, many are prevented from leaving their homes except when absolutely necessary. All the young women we spoke to described increasing tension due to being confined in small huts or tents, often in sweltering heat, with no opportunity to participate in PA.

'People want to forget what happened in Myanmar, but how can they forget? They have no opportunity to work or do anything, we have no other choice but to sit and think of our past experiences. The opportunity to work, the opportunity to run on the road, to do exercise, to go to the gym, all these would have a big impact on our mental health.' **Two young females, Shalbagan, new arrivals**

There were also different opinions among women regarding being involved in PA, with some women preferring to have social time without a focus on PA. Some said any activity would be welcome as long as it gets people together, while others reported that PA had been part of their lifestyle in Myanmar which they wanted to continue.

'There are no facilities to do physical exercise in the camps, this is the reason why I have put on weight, all we do is stay inside, this not only causes us tension . . . Community people think I am bad when I go outside, but I want to go out anyway . . . I want to relieve my tension, so I go outside and move my body . . . In Myanmar I used gym equipment . . . my favourite exercise was running.' **Two young females, Shalbagan, new arrivals**

Understandings of physical activity and health

Fourteen out of fifteen participants described a strong understanding in the community that PA is beneficial for both physical and mental health. Seven out of fifteen participants directly stated that it relieves tension, a local idiom of distress.

'When I play football, after doing that I become "tensionless" . . . I become free.' **Young male teacher, Shabon, new arrival**

'As I have no job to do, I am useless, that's why I feel more tension. Whenever I go to the playground to play with my colleagues, then I become fresh. That's why the physical activity is the most important for the community.' **Young father, Shabon, new arrival**

'Everyone knows that if they do exercise, it can relieve tension.' **Two young unmarried females, Shalbagan, new arrivals**

Some of the identified benefits were *getting strong*, feeling better, having better health, treating diabetes, feeling *'fresh'* or *'mindfresh'*, *'getting happy'*, reducing pain, being *entertained* and bringing people together.

'If they do physical exercise they feel good for health.' **Married mother, Shalbagan, new arrival**

'If someone is mentally dejected and if we give them gymnasium activities . . . they try to forget what happened to them, this is also helpful for mental health.' **Young male community leader, NYP, established**

In contrast, participants linked lack of PA with negative health consequences, including gaining weight, becoming weak and '*bad thinking*', '*bad memories'* of Myanmar and increases in disputes within the home. Participants described how the loss of access to recreational space and occupational activity has led to a more sedentary lifestyle.

'In Burma . . . in the yard, I could go out. . . . Because of my lack of physical movement, I am fat now, I have put on

weight.' **Two young unmarried females, Shabagan, new arrivals**

'Those young ladies they stay the whole day and night at home, if they cannot play, they cannot work outside, they cannot move, they have to sit and stay at home all day and night, then bad thinking can come to them.' **Older male community leader, NYP, established**

'If women and men stay all day at home, there will be quarrelling, they will have conversations and words may be bad, which will affect their mental health.' **Male team captain, KTP, established**

Eleven out of fifteen participants described community understandings of the benefits of PA as common sense, saying they worked it out from their own experience, from watching sports and through informal community networks. However, there were requests for more information and resources to promote PA in the community. Regardless of level of reported education, participants endorsed PA as a beneficial psychosocial strategy. Only two participants described information programmes about PA from NGOs.

'When I feel weakness, I think if I do physical exercise I feel good, but nobody teach me.' **Two young females, Shalbagan, new arrivals**

Resources

While community attitudes towards PA were generally positive, resources were described as the greatest barrier to engaging in PA. Ten participants stated that lack of space was the main barrier. For women, this increased existing cultural barriers due to needing private, female-only spaces. Another barrier was lack of equipment, cited by three younger men involved in organising football. Both men and women requested access to a gym. Two participants described a lack of access to basic rights as a major barrier to participation, including restrictions on movement preventing them from engaging in football matches with local host community teams. We did not speak with NGOs as the focus of this study was to understand the perspectives of community members. Participants did state that some NGOs have been involved in facilitating one-off sporting events (e.g. Technical Assistance Incorporated to celebrate World Refugee Day), although these appear to be delivered on an ad-hoc basis. Despite this lack of material resources, there were a great deal of social resources in terms of community activism and engagement (as discussed above).

'The issue of space. There are so many people in the camp and the capacity of the space is small . . . No space for people to sit, to relax, to talk and discuss amongst themselves. So, they stay in the home and become bored. So when they stay in the home, many bad thought come to their mind, they sit and think without anything else to do.' **Male team leader, NYP, new arrival**

'Yeah, we have team, but we can't play. Lack of equipment, lack of playground. Lack of opportunity.' **Young male, NYP, new arrival**

Discussion

Key informants endorsed PA as a culturally appropriate way to reduce distress associated with living in displacement. The importance of PA was articulated through community-led initiatives, the organic establishment of teams and administrative structures and through reported personal preference and actions. This finding was consistent, regardless of education, gender or length of time spent living in displacement. Despite strong community interest in and support for PA as a positive psychosocial strategy, limited internal and external resources are currently available to support participation. Results clearly highlight a disconnect between the community-identified interest in PA and the provision of suitable opportunities from government and non-government agencies. Importantly, opportunities to participate in PA is impacted by gender, age and ability. In particular, young women described extremely limited freedom of movement. Another key finding was the identified negative mental health effects of prolonged sedentary behaviour. This is consistent with quantitative data from high income settings showing a clear relationship between increased sedentary time, depression, anxiety and wellbeing (Hallgren et al., 2019; Vancampfort, Stubbs, Mugisha, Firth, Schuch, & Koyanagi, 2018).

Those arriving from 2017 onwards reported low levels of community readiness, despite having positive attitudes towards PA. This is not surprising given that most of these informants had arrived within the last two years and were focused on satisfying their basic needs (Wake, Barbelet, & Skinner, 2019). At these earlier levels of readiness, the CRM recommends generating community conversations to develop ideas for situationally appropriate interventions, rather than providing concrete ideas and interventions (see Table 1). Participants described engagement from elected community leaders, but a lack of resources to build on grassroots activities. Prior to implementation, resourcing community leaders to design PA interventions may generate plans which are culturally appropriate and therefore accessible to women and other marginalised groups.

Within the established communities, there are existing systematic community structures for PA (mostly competitive sport) which are sustained through limited community resources and volunteers. Results from these communities indicate a need to engage with these existing community structures to help resource, develop and refine these community-led strategies, with a focus on broadening access to certain groups. The discrepancy in readiness between the newly arrived and established communities is an opportunity to leverage these existing community resources. Of note is the fact that the established community has not reached later stages of implementing community-wide, accessible PA programmes, despite almost three decades in displacement and considerable grassroots community activism. This may reflect a lack of awareness among international organisations of local community activities which can be built upon.

The findings of the CRM assessment are consistent with an ecological approach to health promotion in displacement

settings and call attention to the need for approaches which can build on both social and individual adaptive resources (Silove, 2013; Wells et al., 2018). As Silove argues, key to promotion of individual psychosocial recovery is programmes which provide opportunities for social bonds and networks to support resilience (Silove, 2013). Collective sports programmes were described as a grassroots activity which brings communities together and helps to relieve '*tension*'. However, it is also necessary to attend to those who may be excluded from these forums due to a range of identity markers, including gender, age and ability.

The findings regarding young women highlight the need for a culturally informed approach which can provide access to PA in a way which is sensitive to community concerns and spiritual beliefs. Female key informants requested access to female-only spaces where they could engage in PA and other social gatherings, consistent with other research with adolescent girls in Cox's Bazaar (Plan International & Monash GPS, 2018). The early morning women's walking group provides a model of a programme which offers protection to younger women through collective action with older women and through endorsement by female community leaders. This approach is consistent with community-driven work in other stateless communities which recommend integration of psychosocial services with traditional healing systems (Al-Krenawi & Graham, 2009). We note that restrictions of women's movement may function to protect women from sexual assault and harassment in the crowded camp setting (Plan International & Monash GPS, 2018). However, international research suggests that, while violence outside the home is an ongoing risk in this and other camp settings, women are more likely to experience violence inside the home (Stark & Ager, 2011). Research in another post conflict setting has shown how such incidents of violence can lead to cycles of violence within a family (Rees, Thorpe, Tol, Fonseca, & Silove, 2015). Informant assertions that sedentary behaviour may lead to increased family conflict highlight a potential role for PA in reducing family violence which warrants further exploration.

A key word search of the grey literature was conducted to identify nongovernment organisation assessments among Rohingya refugees in Cox's Bazaar to determine whether PA was mentioned in these reports. One report mentioned a lack of space for children to play (Wake et al., 2019), one assessment focusing on adolescent girls reported that PA helped them build resilience, but many young girls were prevented from going outside to play because of cultural considerations and security concerns (Plan International & Monash GPS, 2018). However, in general there was extremely limited information about PA and sports in this literature.

Limitations

Due to the rapid nature of this assessment, it was not possible to systematically assess readiness within each of the large number of diverse camps in Cox's Bazar. Rather, this study provides a snapshot which can be used to develop working relationships with community members towards specific, local interventions. The significance of the study would have been enhanced by purposive sampling of people with disabilities, gender diversity or diverse sexualities.

Conclusion

Despite the small sample size of this rapid ecological assessment, results indicate that PA may be a feasible and acceptable community-identified strategy to promote psychosocial wellbeing among Rohingya refugees living in Bangladesh. Despite the identified social, mental and physical health benefits, resources for PA programmes within Bangladeshi refugee camps are extremely limited. Based on the results of this study, commensurate resources targeting PA should be allocated to mental health and psychosocial support initiatives.

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Conflicts of interest

There are no conflicts of interest.

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