Musculoskeletal Problems are Highly Prevalent among Rohingya Refugee in Bangladesh: A Cross-Sectional Study

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A B S T R A C T

Aim: Musculoskeletal problems are a concerning issue now a days and Rohingya refugees are one of the most vulnerable group. Our study aims to find out the prevalence of musculoskeletal problem among Rohingya Refugees in Bangladesh

Method and Materials: A cross-sectional survey was conducted and subjects were recruited by using simple random sampling method. A questionnaire containing demographic data, Nordic musculoskeletal questionnaire and SF-12 health survey was used to collect the data. Descriptive statistics were used to calculate the prevalence rate.

Findings: Among 120 participants 79.2% were male and 20.8 % were female. 69.3% participants having pain in different site of the body. Most of the participants having pain in the lower back (34.2%) followed by multiple joints (21.7%). The severity of the pain was mild pain 38.5%, moderate pain 35.2% and severe pain 2.4% respectively.

Conclusion: Musculoskeletal problems are highly prevalent among Rohingya refugee ppulation. It is, therefore, important to consider the basic health needs like medicine and rehabilitation services to the refugee population for living in protracted humanitarian environment.

Keywords: Cross Sectional Study, Health Status, Rohingya, Refugee, Musculoskeletal Problems.

Introduction

The number of refugees in the world is about 11.5 million and still increasing day by day[1]. Refugees are a global issue in today's world and Rohingya refugees in Bangladesh are one of the most vulnerable group among them. By the end of February 2018, about 700,000 Rohingya had crossed the border of Myanmar to seek shelter in Bangladesh during the violence occurring in Myanmar's Rakhine state. The Rohingya have been subjected to various forms of physical and sexual abuse during the Rakhine state's violence, which has left them with a variety of physical and mental problems[2]. It is difficult to clearly understand the health needs of the migrants as they have less contact with the healthcare community. Although government and non-government organizations are working to ensure their health care needs, it is far from adequate. Due to lack of health care system, lack of knowledge of personal hygiene, poor sanitation system and shelter, disease has been spreading easily in refugee camp. Near about 1.2 million refugee people need health assistance and World Health Organization (WHO) has graded this crisis as level 3 emergency[3].

The Rohingya refugees are homogenous population with complex health needs, they experienced trauma before and during their deleterious journey. The major health problems among the refugees includes communicable (Cholera, diarrhea, hepatitis, typhoid etc.) and non-communicable (arthritis, heart disease, respiratory disease,

musculoskeletal problem) diseases, malnutrition and mental illness[4]. Refugees are at high risk of physical and mental problems which contribute to poor health outcome. Musculoskeletal pain, most commonly in low back pain and neck pain due to past physical trauma are very common in refugee population and need medical attention[5]. The prevalence rate of musculoskeletal problem among previously tortured refugees have been reported up to 83.3%[5]. The prevalence rate of musculoskeletal problem among Afghan refugees have been reported very high[6]. The disability rate due to neuro-musculoskeletal problem among refugees varies from 3% to 10 %[7].

The prevalence of non-communicable disease among the refugee population has been increasing and providing appropriate medical care has become challenging[8]. The non-communicable diseases including arthritis and musculoskeletal pain may affect their health status and need medical attention[9]. Most of the Non-Governmental Organizations (NGOs) and social well fair organizations are working regarding communicable disease, but there is a less concentration to provide medical support regarding this issue. Musculoskeletal pain is one of the most concerning issue that needs to focus for providing medical care otherwise it would be burden for the host community to meet the health need of the refugee.

To the best of our knowledge this study maybe is the first study regarding this serious issue that provides information regarding musculoskeletal problem among Rohingya refugee in Bangladesh. It is important to know about the healthcare needs of the refugee population. Thus , this study aimed to find out the prevalence rate of musculoskeletal problem and quality of life among Rohingya refugees in Bangladesh.

Method and Materials

A cross sectional study was conducted on August 2018 to September 2018 at Kutupalong refugee camp in Cox's bazar, Bangladesh. The study proposal was approved by the student project committee of Gono Bishwabidyalay, Dhaka, Bangladesh . This study was conducted in accordance to the guideline of Helsinki declaration 2013 and Bangladesh Medical Research Council guidelines 2013. A questionnaires were used were as [1] demographic data, [2] Nordic musculoskeletal questionnaire and [3] SF-12 health survey. The preliminary draft of the questionnaire were distributed to an expert panel for review and constructive changes. We tested the questionnaires with small representative sample and monitored the response time. It took not more than 15 minutes to complete the questionnaire. After completion of all procedure, we have started data collection from the study participants.

After performing the sample size estimation using the formula for estimating proportion: $n = Z\alpha^2 P (1 - P)/d2$; where $Z\alpha = 1.96$; $P = 92\%$ as the response rate of knocking the door survey which was 92%[10] and $d = 5\%$. Thus, the minimum sample required for this study was estimated to be 113. Anticipating 10% with incomplete forms, we have targeted the final minimal required sample size to be 124. A simple random sampling method was used to recruit the required sample. A computer-generated random number was utilized to select first camp number, then block number of the camp, and finally the sub-block of the refugee camp. The targeted sample was recruited from a sample frame of 935 populations from the selected sub-block. The targeted sample was identified on the basis of pre-fixed inclusion and exclusion criteria. The inclusion criteria were Rohingya refugees, both male and female and aged between 18-50 years.

We excluded the participants who were not willing to participate and who were mentally ill. All of the participants were provided with written consent form for their voluntary participation. As the Rohingya refugees were not familiar in Bangla and English language, we appointed a language interpreter who was familiar in the Rohingya language and described the questionnaire to them in their language. Voluntary participation was confirmed by taking thumb print from the participants and ascent was taken from the witness. The entire demographic characteristics such as age, gender, weight and height of each subject were noted.

Nordic musculoskeletal disorder questionnaire was used to identify the musculoskeletal problem. It was a general questionnaire containing nine symptom sites of the body including neck, shoulder, upper back, elbow, low back, wrist/hands, hips/thighs knees and ankles/feet. Respondents were asked if they have had any musculoskeletal trouble in the last 12 months which has prevented normal activity. The validity and reliability of Nordic musculoskeletal questionnaire have already been established[11].

The SF-12 Questionnaire was used to assess the quality of life of Rohingya refugees. The SF-12 questionnaire is a valid and reliable instrument to measure the quality of life of refugee population[12]. The SF-12 is a health-related quality-of-life questionnaire that consists of 12 questions that measure eight health domains to assess physical and mental health. Physical health-related domains include General Health, Physical Functioning, Role Physical, and Body Pain. Mental health-related scales include Vitality, Social Functioning, Role Emotional, and Mental Health.

The entire data was collected by the primary researcher. The normality of the collected data was measured by Kolmogorov-Smirnov test. As data followed normal distribution, the data expressed as mean± SD with 95% confidential interval. Descriptive statistics were expressed as percentage for prevalence of musculoskeletal pain and quality of life. The level of significance was set as 0.05. The statistical analysis was performed using the statistical software, IBM SPSS version 22.0 (IBM Corp., Armonk, NY, USA).

Findings

A number of 124 anticipated participants were recruited in this study. There was four incomplete forms, thus we excluded those forms and finally 120 questionnaires were analyzed for results. The result was expressed in the term of Mean ±SD. Age, height, weight and BMI of the participants were 28.22±7.96 years, 155.85±8.92 cm, 51.85±6.38 Kg, and 21.39±2.39 Kg/m^2 respectively. Among them 79.2% (N=95) were male and 20.8 % (N=25) were female. 69.3% (N=83) participants had pain in different site of the body. Lower back pain was more prevalent at 34.2% (N=41) followed by multiple joints and 21.7% (N=26) has pain in the neck. The rat of pain in ther parts of body such as elbow, wrist and hand, hips and thigh, knee, and ankle and foot joints that are shown on Fig: 1. The severity of the pain among the individuals were mild pain 38.5% (N=46), moderate pain 35.2% (N=42) and 2.4% (N=12) had severe pain. The mean SF score was 26.76±4.92. Figure: 2 shown the general health condition of the participants. Table 1 shows the general physical and mental health status of the participants.

Discussion

The result of this study showed the prevalence rate of musculoskeletal problem and quality of life among Rohingya refugee in Bangladesh. About 69.3% participants had pain in the different site of the body,

Table 1) Quality of life of the participants (n= 120)

Items			Percentage(frequency)
1	General health status	Excellent	22.5 (27)
		Very good	15 (18)
		Good	38.2 (46)
		Fair	24.2 (29)
Activities that limit health			
2	Moderate activities such as moving a table, pushing a vacuum cleaner, bowling, or playing golf.	Yes, limit a Lot	18.3 (22)
		Yes, Limit a Little	48.3 (58)
		No, Not limit at all	33.3 (40)
3	Climbing several flights of stairs	Yes, limit a Lot	15.8 (19)
		Yes, Limit a Little	52.5 (63)
		No, Not limit at all	31.7 (38)
Problems with work or other regular daily activities as a result of physical health			
4	Accomplished less than you would like.	Yes	35 (42)
		No	65 (78)
5	Were limited in the kind of work or other activities	Yes	35 (42)
		No	65 (78)
Daily activities as a result of any emotional problems (such as feeling depressed or anxious)			
6	Accomplished less than you would like.	Yes	27.5 (33)
		No	72.5 (87)
7	Did work or activities less carefully than usual.	Yes	27.5 (33)
		No	72.5 (87)
8	Pain intensity in normal work	Not at all	32.5 (39)
		A little bit	13.3 (16)
		Moderately	47.5 (57)
		Extremely	6.7 (8)
9	Have you felt calm & peaceful?	All of the time	34.2 (41)
		Most of the time	16.7 (20)
		A good bit of the time	28.3 (34)
		Some of the time	15 (18)
		A little of the time	5.8 (7)
		None of the time	0 (0)

Table 1) Quality of life of the participants (n= 120)

| Items			Percentage(frequency)
10	**Did you have a lot of energy?**	All of the time	32.5 (39)
		Most of the time	16.7 (20)
		A good bit of the time	26.7 (32)
		Some of the time	17.5 (21)
		A little of the time	6.7 (8)
11	**Have you felt down-hearted and blue?**	All of the time	30.08 (37)
		Most of the time	5 (6)
		A good bit of the time	18.3 (22)
		Some of the time	38.3 (46)
		A little of the time	6.7 (8)
		None of the time	0.8 (1)
12	**Physical health or emotional problems interfered with social activities**	All of the time	19.2 (23)
		Most of the time	13.3 (16)
		Some of the time	20.8 (25)
		A little of the time	45.8 (55)
		None of the time	0.8 (1)
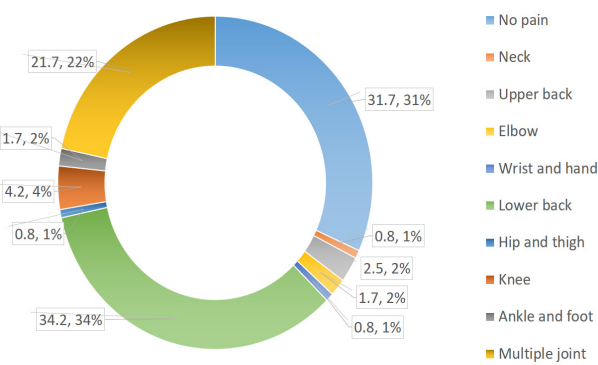
Figure 1) Pain present in the area of the body

that might be a concerning issue for the health care providers. Musculoskeletal disorder is an emerging problem among refugee population and a challenge for the host country and international community to meet their health needs. According to World Health Organization, treatment of non-communicable diseases for refugees is costly for donor agency, due to the limited resources available for refugee health care[13]. A study has reported that 45.6% of Rohingya population having multiple problems and 16.8% participants had specific problem like musculoskeletal pain[4]. Another study reported that 43.4 % of Syrian refugees reported one or more household members had been previously diagnosed with different non-communicable disease conditions[14] and 45.7 % of Syrian refugee reported minimum one member has been suffering with a chronic health condition[8] an epidemiological shift away from communicable diseases that have historically characterized refugee populations has occurred. The high prevalence of non-communicable diseases (NCDs). In this present study low back pain

was more prevalent, the causative reason might be the physical inactivity, trauma and sexual harassment during the crisis. Previous study reported that pain in the back was associated with sexual torture and beating in the lower extremity was associated for pain in the leg and feet. [15]
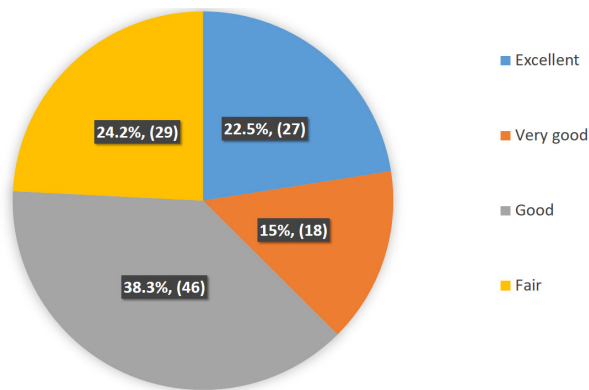

Figure 2) General health status of participants

The result of this present study is fully in line with the findings of the previous studies reported in the literature. Musculoskeletal problem is one of the most common objections among traumatized refugees. Studies have reported that 59% of Bhutanese refugees complained musculoskeletal pain who had been tortured previously[16]. About 70% of Iraqi refugee complained low back pain in the U.S. due to various form of torture, detention or difficult travel condition while migration[17].

The general health condition of Rohingya refugees is not good and the result of our study reported that 24.2% of refugee's general health condition is fair. A survey on health status and chronic conditions of refugee population living in the Netherlands reported that 39% of migrant populations health status is not well and 30% suffered from more than one chronic disease[1]. The general health status of refugees is related to many factors that have been reported in the previous literature. The majority of studies reported a positive

association between number of traumatic events experienced and the level of post-migration stress[18-20]. Musculoskeletal problems are interfering refugee's physical and mental health status and the number is raising day by day. The donor agencies and health organizations should be focus on these prospects to fulfill their health needs.

Biases in the cross-sectional study is very susceptible. The various types of bias of this study were eliminated by using following measures: Ascertainment bias was eliminated by using pre fixed inclusion and exclusion criteria, selection bias by simple random sampling method and non-response bias by knocking the door survey method were removed respectively. In this current study we have some limitations as well. The study sample was small and conducted in a single sub-block of the refugee camp that might not represent and fully reflect the whole Rohingya population. Future study can be done with a large sample size with different refugee camp to find best results. This study would be helpful for the healthcare providers on implementing better healthcare support to the vulnerable refugee population.

Conclusion

The prevalence rate of musculoskeletal problems among Rohingya refugees in Bangladesh has been established. It is, therefore, important to consider the basic health needs like medicine and rehabilitation services to the refugee population for living in protracted humanitarian environment.

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Author's contributions: SA, AA and RA

conceived and designed the study, conducted research, provided research materials, AA and AAS collected and organized data. SA and AAS wrote initial draft of article. All the authors approved the final draft of article.

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Ethical Permission: Ethical approval was obtained from the student project committee of Gono Bishwabidyalay, Saver Dhaka, Bangladesh Informed. Consent obtained from the participants

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