Knowledge and Awareness on Occurrence/Incidence of Different Diseases (Disease Burden) Among the Rohingya Refugee People: A Cross Sectional Study on FDMN Community in Rohingya Refugee Settlement, Cox's Bazar, Bangladesh.

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Abstract

Background: The Rohingya refugee crisis is a prominent humanitarian issue that has compelled many Rohingya individuals to vacate their residences in Myanmar and seek asylum in nearby nations, with a special emphasis on Bangladesh. Since the commencement of this crisis, the Rohingya refugees have been residing in densely populated and resource-limited settlements, encountering a multitude of health-related difficulties. The prevalence and control of infections inside refugee populations have emerged as a significant issue for humanitarian organizations and public health professionals.

Aim of the study: The aim of this study is to determine the knowledge and awareness on occurrence/incidence of different diseases (disease burden) among the Rohingya Refugee people in Rohingya Refugee settlement, Cox's Bazar, Bangladesh.

Methods: A descriptive and cross-sectional survey on Rohingya people (N = 510) living in refugee camps in Bangladesh. Data was collected via face-to-face interviews, after voluntary consent, using a pretested, language validated questionnaire on knowledge and awareness. The non-probability and purposive sampling methods have been used in this study.

Results & Discussion: A total of 510 refugee people were enrolled in this study where maximum participants' age group was 21-30 years (n=224, 43.9%). Male and female respondents' participation was nearly equal (male: n=264, 51.8%; female: n=246, 48.2%). About half of the respondents (n=277, 54.3%) were illiterate or did not have any institutional education. Satisfactory ideas on different communicable & non-communicable diseases found. Different respondents replied positively about knowledge on different health issues that are related to different diseases. Here 84% respondents knew

about water borne diseases, 81% respondents knew about transmission of water borne diseases and 78% respondents knew about signs-symptoms of water borne diseases. 68% respondents replied A, B complex, C, D, E and K are the examples of vitamins, 24% respondents mentioned about K, Fe, Zn and Cu where only 8% respondents told about Na, I, Ca and electrolyte. 72% respondents replied the correct option regarding water borne diseases like Cholera, Tyohoid, Diarrhea, Dysentary, Giardia as example; 69% respondents told the correct option regarding Mosquito Borne Diseases like Malaria, Dengue, Chikunguniya as example; 39% respondents mentioned the correct option regarding Sexually Transmitted Diseases like Gonorrhoea, Syphilis, HIV, Viral Hepatitis as example; 49% respondents replied the correct option regarding Respiratory Tract Infections like Pneumonia, Influenza, Covid-19, TB as example where 39% respondents gave examples of other communicable diseases which were correct. Again when the respondents were asked about examples of non-communicable diseases, 48% replied about Diabetes, Hypertension, MI, Dyslipidemia, Stroke, Osteoporosis.

Conclusion: The respondents also mentioned about common communicable & non-communicable diseases in their particular area or camp, diseases they were suffering from and also prevalence of different communicable and non communicable diseases was observed. Policymakers and healthcare providers can enhance health outcomes and facilitate disease prevention among displaced populations by comprehending the factors that impact disease awareness and behaviors. Nevertheless, it is imperative to acknowledge the limitations of the study and take them into account when interpreting the results.

Keywords: Occurrence, Burden, Communicable Diseases, Non Communicable Diseases, Socio-Demography.

1. Introduction:

The Rohingya refugee crisis is a prominent humanitarian issue that has compelled many Rohingya individuals to vacate their residences in Myanmar and seek asylum in nearby nations, with a special emphasis on Bangladesh (UNHCR, 2023). Since the commencement of this crisis, the Rohingya refugees have been residing in densely populated and resource-limited settlements, encountering a multitude of health-related difficulties. The prevalence and control of infections inside refugee populations have emerged as a significant issue for humanitarian organizations and public health professionals (Islam & Nuzhath, 2018). The objective of this book is to examine the level of knowledge and awareness of the prevalence of various diseases, known as disease burden, within the Rohingya refugee community dwelling in the refugee settlement located in Cox's Bazar, Bangladesh. It is imperative to assess the extent of information and awareness about diseases among the Rohingya refugee community to develop efficacious health interventions and enhance health outcomes. The present cross-sectional study offers significant insights into the existing level of health awareness and potential information gaps among this susceptible population. Refugee communities, such as the Rohingya, frequently have distinct health obstacles because of their forced displacement, restricted healthcare accessibility, and densely populated living environments. According to Islam and Nuzhath (2018), there is a high prevalence of communicable diseases, including diarrhea, respiratory infections, and vector-borne illnesses. Additionally, there is typically inadequate access to vital healthcare services. The danger of disease transmission in refugee settlements is heightened by factors such as high population density, insufficient sanitary facilities, and restricted availability of clean water (Akhter et al., 2020). The acquisition and understanding of health-related information and the cultivation of

consciousness regarding health matters are of paramount importance in the prevention and control of diseases. Research has indicated that in refugee populations, a deficiency in health awareness can impede the adoption of preventive measures and the prompt initiation of treatment-seeking behavior (Akhter et al., 2020). It is imperative to comprehend the lacunae in information and misconceptions about diseases among the Rohingya refugee population, as this understanding is crucial for the development of health education initiatives that are tailored to their unique need. Cox's Bazar, situated in the southeastern region of Bangladesh, accommodates a significant Rohingya refugee population, making it one of the most extensive settlements of its kind globally. Since August 2017, a substantial number of Rohingya individuals have sought asylum in this region, resulting in significant difficulties in delivering sufficient healthcare, housing, and sanitation amenities (IPA, 2018). The issues need the evaluation of the illness burden and health awareness levels within this group. Numerous scholarly investigations have been conducted to explore health-related concerns among Rohingya refugee settlements, with a particular emphasis on the prevalence of diseases, accessibility to healthcare, and the caliber of healthcare provisions. The research has underscored the necessity for enhanced healthcare infrastructure and health education initiatives (Islam & Nuzhath, 2018; Akhter et al., 2020). The acquisition and understanding of health-related information and the level of consciousness regarding health have a substantial impact on individuals' behavior concerning their health, encompassing activities taken to prevent health issues and the pursuit of healthcare services (Lim et al., 2019). The comprehension of the elements that influence knowledge and awareness is of utmost importance in refugee contexts, as it enables the development of focused treatments aimed at enhancing health outcomes (Weine, 2011). The main aims of this cross-sectional study were as follows: to evaluate the extent of knowledge and awareness regarding the prevalence of diseases within the Rohingya refugee community residing in Cox's Bazar, Bangladesh. The objective of this study was to examine the factors that are linked to the variances in health knowledge and awareness among individuals within the refugee community and to propose strategies for improving health education and awareness initiatives to reduce the prevalence of diseases among Rohingya refugees. The Rohingya refugee crisis has posed considerable obstacles, encompassing a substantial illness load and restricted availability of healthcare facilities. This cross-sectional study aimed at evaluating the level of knowledge and awareness of disease prevalence among the Rohingya refugee population in Cox's Bazar, Bangladesh. Gaining insight into the levels of health awareness and the factors that impact them is crucial to developing impactful health interventions and enhancing the overall health outcomes of this susceptible demographic. As the research advances, it was anticipated that the results would provide insight into the current health inequalities and offer guidance on approaches to alleviate the prevalence of diseases among Rohingya refugees. Consequently, this would contribute to the wider academic discussion on the health and overall welfare of refugees. The aim of this study is to assess the knowledge and awareness on occurrence/incidence of different diseases (disease burden) among the Rohingya Refugee people in Rohingya Refugee settlement, Cox's Bazar, Bangladesh.

2. Methodology:

2.1. Study Design (Population & Area)

A descriptive type of cross-sectional survey on the Rohingya Refugee population in Cox's Bazar, Bangladesh was carried out for the purpose of this study.

2.2. Participants (Duration & Sample size)

The survey was administered on the Rohingya Refugee people of different ages (excluding children <18 years) and genders who were residing in refugee camps. Data collection was done from March, 2023 till August, 2023. The participants in the study who declined the opportunity to participate in the survey were disqualified. The poll received responses from a total of 510 different individual participants of different camps. The sample size was calculated by using this formula ($n = z^2pq/d^2$).

2.3. Setting

The research was conducted in the Rohingya Refugee camps located in the Cox's Bazar, Bangladesh.

2.4. Data Collection Tool: (Questionnaire)

In order to achieve the goals of the study, a standard questionnaire on knowledge and awareness on occurrence/incidence of different diseases (disease burden) among the Rohingya Refugee people first developed, then validated, then translated, and last personalized. The Socio-Demographic questions that were asked were tailored to the group of refugees. There were categorical responses to questions on knowledge and awareness around communicable and non-communicable diseases. For the purpose of linguistic validation, the questionnaire were translated into English and Rohingya using forwarding and backward translation respectively. The respondents were intended to depict the status of refugees in Bangladesh.

2.5. Variable:

The questionnaire was developed on Socio-Demography, Knowledge and Awareness based variables. The questions were designed on that particular variable/s with suitable options rationally.

2.6. Sampling Method

The non probability and purposive sampling method has been used in this study to classify the collected data.

2.7. Data Management Plan: (Statistical analysis)

All interview questions of the questionnaire were checked for completeness, accuracy, and consistency to exclude missing or inconsistent data. Data was checked, cleaned, and edited properly before analysis. The study was based on primary data with descriptive cross-sectional design filled directly with the help of respondents. The data analyzed by using Microsoft excel 2016. Descriptive statistics was used for interpretation of the findings. The analyzed data were presented as tables and graphs or charts.

2.8. Inclusion Criteria

People with given consent who willingly joined or participated in this study. Both male and female of different age groups were selected as participants.

2.9. Exclusion Criteria

People who felt unwilling to participate and were not able to provide information due to physical or mental illness or handicapped. Children <18 years were excluded.

3. Results:

3.1. Descriptive statistics of socio-demographic status:

A total of 510 refugee people were enrolled in this study where maximum participants' age group was 21-30 years (n=224, 43.9%). Male and female respondents' participation was nearly equal (male: n=264, 51.8%; female: n=246, 48.2%). About half of the respondents (n=277, 54.3%) were illiterate or did not have any institutional education. About the occupational status, majority of the respondents were housewife (n=200, 39.2%). Among all the respondents 290 (56.9%) mentioned about joint family they are living in. In this study majority (n=307, 60.2%) of the respondents were married. It was found that majority (n=279, 54.7%) of the respondents' monthly family income was 3.5K - 7K in BDT. Majority (n=331, 64.9%) of the respondents had 5 - 8 family members [Table 1].

3.2. Descriptions about knowledge on different health issues related to diseases:

According to Figure 1, we can see the percentage of different respondents replied positively about knowledge on different health issues that are related to different diseases. Here 69% respondents knew about water borne diseases, 67% respondents knew about transmission of water borne diseases and 67% respondents knew about signs-symptoms of water borne diseases. Again we can see that 66% respondents knew about mosquito borne diseases, 65% respondents knew about transmission of mosquito borne diseases and 63% respondents knew about signs-symptoms of mosquito borne diseases. Here 61% respondents knew about different communicable diseases and 60% respondents knew about different non-communicable diseases found. 53% and 51% respondents knew about TB and its transmission respectively. Again 48% and 45% respondents knew about HIV-AIDS and its transmission respectively. It was also seen that more than 65% respondents knew about different malnutrition based diseases, as for example different vitamin deficiency disorder, different mineral deficiency disorder, obesity and overweight. [Figure 1].

3.3. Descriptions about health behaviors on different health issues related to diseases:

From Figure 2, we can see the percentage of different respondents replied positively about different health behaviors that are related to different diseases. Here we can see that 56% respondents were used to wash hands before meal and after toilet properly with soap. 61% respondents used to treat or boil water to drink. 47% respondents used to cut nails regularly. 73% respondents used anti mosquito nets/coils/spray at home. 61% respondents used to clean bushes and water containing pots regularly to prevent mosquito breeding. 53% respondents used to consult doctors immediately after being sick. Only 11% respondents used to practice exercise, only 12% respondents used to take milk and dairy products regularly and only 26% respondents used to take protein rich foods regularly. Here 54% respondents used to take regular meal in time. 43% respondents used to take sufficient fruits and 72% respondents used to take vegetables daily. [Figure 2].

3.4. Descriptions about ideas on nutrients, their sources, malnutrition and associated diseases:

In Figure 3, we can see 68% respondents replied A, B complex, C, D, E and K are the examples of vitamins, 24% respondents mentioned about K, Fe, Zn and Cu where only 8% respondents told about Na, I, Ca and electrolyte. [Figure 3]. In Figure 4, we can see 27% respondents replied A, B complex, C, D, E and K are the examples of minerals, 8% respondents mentioned about Ascorbic acid, Beta-carotene and Reboflavin where 65% respondents told about Fe, I, Cu, Ca and Zn as the examples of minerals.

[Figure 4]. In Figure 5, we can see 60% respondents replied about different Fruits and Vegetables, 15% respondents told about Ghee, Butter and Oils, 11% respondents mentioned about Fast foods and Street foods where 14% respondents told about Chicken, Beaf and Mutton are the rich sources of different vitamins and minerals. [Figure 5]. In Figure 6, we can see 66% respondents replied about Blindness, Scurvy, Goiter, Rickets, Osteoporosis, Anemia etc., 15% respondents told about Malaria, Dengue, Covid-19, 12% respondents mentioned about Diarrhea, Cholera, Typhoid where only 7% respondents told about MI, Diabetes, Obesity, Stroke are the problems occur without different vitamins and minerals in our body. [Figure 6]. In Figure 7, we can see 14% respondents replied about Obesity, Hypertension, Heart problem, 51% respondents told about Weakness, Kwashiorkor, Marasmus, PEM, 18% respondents mentioned about Diabetes, Dyslipidemia, Stroke where 17% respondents told about Anemia, Blindness, Rickets, Goiter are the problems occur without carbohydrates, proteins and fats in our body. [Figure 7]. In Table 2, we can see 228 respondents replied positive about any vitamin deficiency disorder, where 19 respondents told about Vitamin A deficiency, 16 respondents mentioned about Vitamin B deficiency, 7 respondents told about Vitamin C deficiency, 30 respondents told about Vitamin D deficiency, 115 respondents told about Vitamin E deficiency and 41 respondents told about Vitamin K deficiency respectively. Again we can see 230 respondents replied positive about any mineral deficiency disorder, where 23 respondents told about Ca deficiency, 16 respondents mentioned about I deficiency, 32 respondents told about Fe deficiency, 17 respondents told about Zn deficiency and 49 respondents told about electrolyte deficiency respectively [Table 2].

3.5. Descriptions about ideas on different communicable & non-communicable diseases:

According to Table 3, 72% respondents replied the correct option regarding water borne diseases like Cholera, Tyohoid, Diarrhea, Dysentary, Giardia as example; 69% respondents told the correct option regarding Mosquito Borne Diseases like Malaria, Dengue, Chikunguniya as example; 39% respondents mentioned the correct option regarding Sexually Transmitted Diseases like Gonorrhoea, Syphilis, HIV, Viral Hepatitis as example; 49% respondents replied the correct option regarding Respiratory Tract Infections like Pneumonia, Influenza, Covid-19, TB as example where 39% respondents gave examples of other communicable diseases which were correct. Again when the respondents were asked about examples of non-communicable diseases, 48% replied about Diabetes, Hypertension, MI, Dyslipidemia, Stroke, Osteoporosis. [Table 3].

3.6. Common communicable & non-communicable diseases, they were suffering from and revalence:

According to Table 4, 22% respondents replied about skin diseases, 20% respondents told about viral cold and fever, 15% respondents mentioned about aching pox as common communicable diseases in the respondents' area where other different percentage of respondents mentioned about different communicable diseases in their area. Again 11% respondents mentioned about Diabetes and Lung Disease, individually 8% respondents mentioned about Daibetes Mellitus, Hypertension, Dislipidemia and Daibetes, Cencar, Anemia where other different percentage of respondents mentioned about different non communicable diseases in their area. [Table 4]. According to Table 5, different percentage of respondents mentioned about different non-communicable diseases where DM, CHD, Cataract, stroke, anemia, back pain, arthritis, IBS, and mental problem are remarkable. Again different percentage
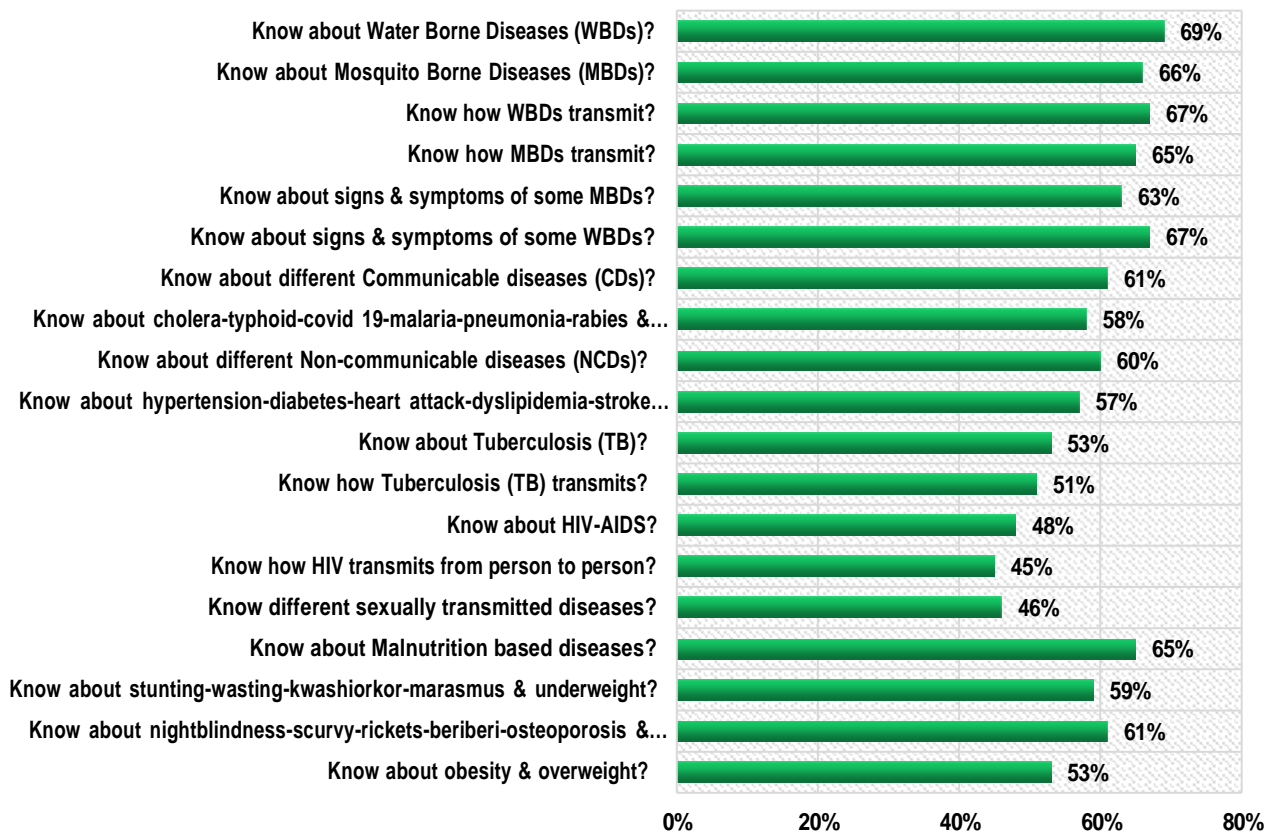
of respondents mentioned about different communicable diseases where skin infection, diarrhea diseases, viral cold with fever, covid-19 and helmithiasis are remarkable [Table 5]. According to Table 6, we can see different prevalence values of both communicable and non-communicable diseases. In case of non-communicable diseases Arthritis, COPD, Anemia, Back Pain, Mental Disorder and Iron deficiency are remarkable and comparably high in prevalence where other different non-communicable diseases are there. Again in case of communicable diseases skin infection, Viral Cold and Fever, Helminthiasis, Dengue, UTI and RTI are remarkable and comparably high in prevalence where other different communicable diseases are there. [Table 6].

Table 1 - Socio-Demographic information of the respondents.		
Traits	**N= 510**	
	n	**n%**
Age		
< 20 Year	160	31.4
21-30 Years	224	43.9
31-40 Years	72	14.1
41-50 Years	34	6.7
51- 60 Years	20	3.9
Gender		
Male	264	51.8
Female	246	48.2
Educational status		
Illiterate	277	54.3
Primary Level	205	40.2
Middle Level	24	4.7
Graduate	4	0.8
Occupational status		
Housewife	200	39.2
Daily Worker	145	28.4
Unemployed	37	7.3
Shopkeeper	31	6.1
Student	82	16.1
Temporary Job	15	2.9
Type of family		
Nuclear	220	43.1
Joint	290	56.9
Marital status		
Married	307	60.2
Single	203	39.8
Monthly family income		
Less than 3500 BDT	157	30.8

3500 to 7000 BDT	279	54.7
More than 7000 BDT	74	14.5
Number of family members		
1 to 4 persons	136	26.7
5 to 8 persons	331	64.9
More than 8 persons	43	8.4

FIGURE 1: PERCENTAGE OF POSITIVE RESPONSES ABOUT KNOWLEDGE ON DIFFERENT DISEASES.

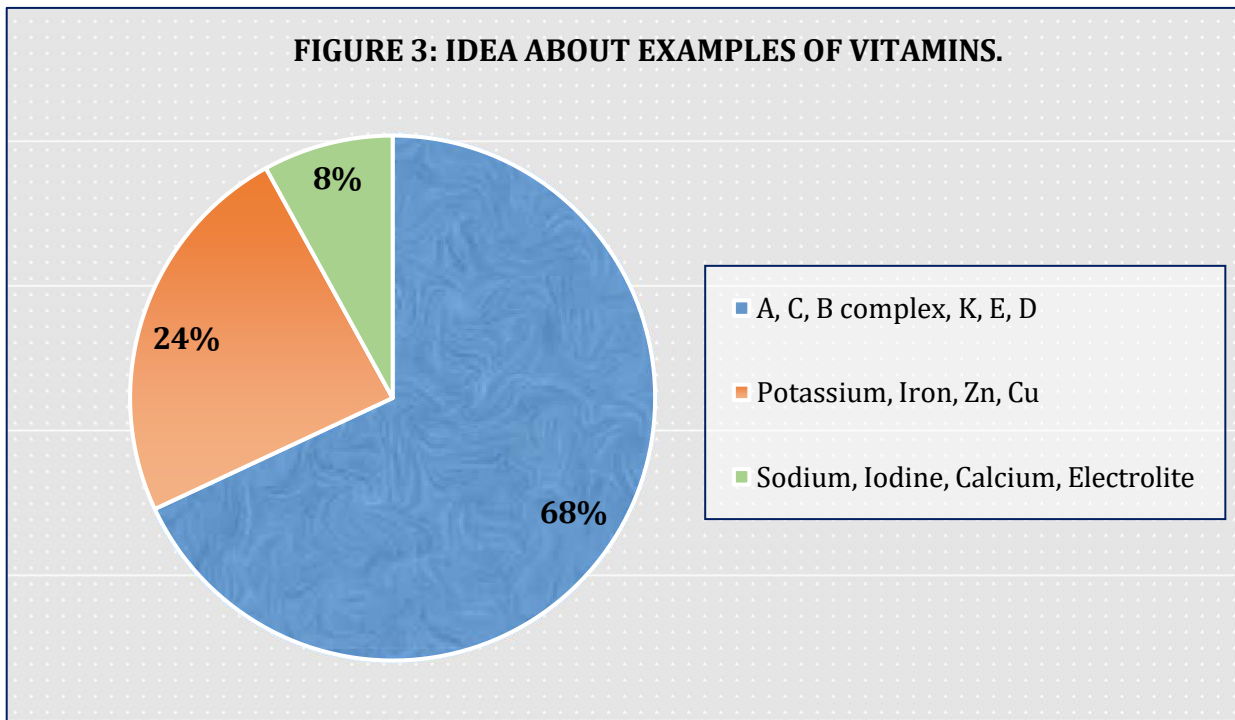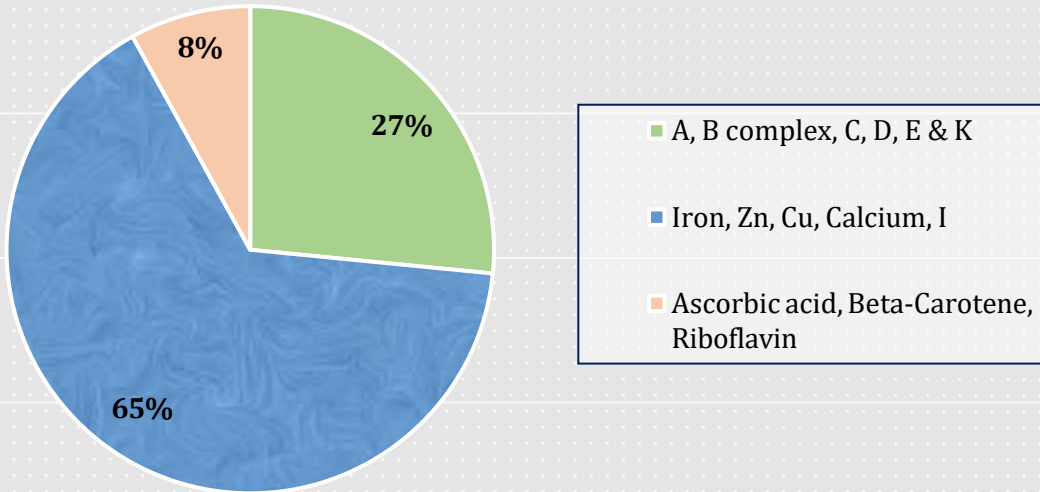| Question	Percentage
Know about Water Borne Diseases (WBDs)?	69%
Know about Mosquito Borne Diseases (MBDs)?	66%
Know how WBDs transmit?	67%
Know how MBDs transmit?	65%
Know about signs & symptoms of some MBDs?	63%
Know about signs & symptoms of some WBDs?	67%
Know about different Communicable diseases (CDs)?	61%
Know about cholera-typhoid-covid 19-malaria-pneumonia-rabies &…	58%
Know about different Non-communicable diseases (NCDs)?	60%
Know about hypertension-diabetes-heart attack-dyslipidemia-stroke…	57%
Know about Tuberculosis (TB)?	53%
Know how Tuberculosis (TB) transmits?	51%
Know about HIV-AIDS?	48%
Know how HIV transmits from person to person?	45%
Know different sexually transmitted diseases?	46%
Know about Malnutrition based diseases?	65%
Know about stunting-wasting-kwashiorkor-marasmus & underweight?	59%
Know about nightblindness-scurvy-rickets-beriberi-osteoporosis &…	61%
Know about obesity & overweight?	53%

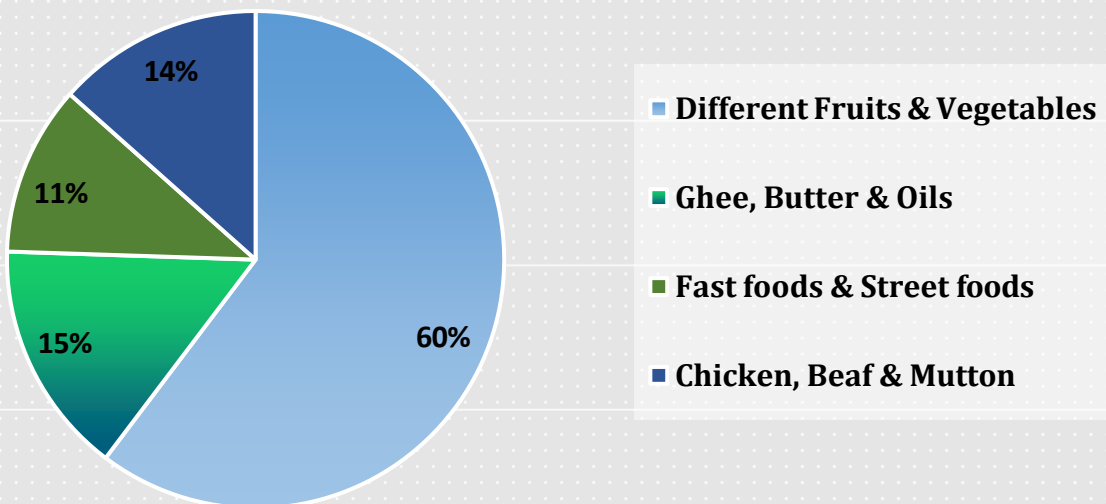**FIGURE 2: PERCENTAGE OF POSITIVE RESPONSES ABOUT DIFFERENT HEALTH BEHAVIORS RELATED TO DIFFERENT DISEASES.**

- Clean bushes and water pots to prevent mosquito breeding? — 61%
- Wash raw foods properly before cook and consume? — 58%
- Take vegetables regularly? — 72%
- Consult doctor immediately after being sick? — 53%
- Practice exercise regularly? — 11%
- Take milk and dairy products regularly? — 12%
- Take protein rich foods regularly? — 26%
- Take regular meal in time daily? — 54%
- Take sufficient water daily? — 65%
- Take sufficient fruits regularly? — 43%
- Wash Hands before meal & after toilet with soap? — 56%
- Use boiled/treated water to drink? — 61%
- Cut Nails regularly? — 47%
- Use Anti-Mosquito nets/coils/spray at home? — 73%
- Wearing mask during outside visit? — 21%
- Follow cough and sneeze precautions in public place? — 32%
- Purify impure water for household use? — 35%

FIGURE 3: IDEA ABOUT EXAMPLES OF VITAMINS.

- A, C, B complex, K, E, D — 68%
- Potassium, Iron, Zn, Cu — 24%
- Sodium, Iodine, Calcium, Electrolite — 8%

FIGURE 4: IDEA ABOUT EXAMPLES OF MINERALS.

- A, B complex, C, D, E & K
- Iron, Zn, Cu, Calcium, I
- Ascorbic acid, Beta-Carotene, Riboflavin

FIGURE 5: IDEA ABOUT RICH SOURCES OF VITAMINS & MINERALS.

- **Different Fruits & Vegetables**
- **Ghee, Butter & Oils**
- **Fast foods & Street foods**
- **Chicken, Beaf & Mutton**

FIGURE 6: IDEA ABOUT PROBLEMS OCCUR WITHOUT VITAMINS & MINERALS IN OUR BODY.

- Blindness, Scurvy, Goiter, Rickets, Osteoporosis, Anemia etc.
- Malaria, Dengue, Covid-19
- Diarrhea, Cholera, Typhoid
- MI, Diabetes, Obesity, Stroke
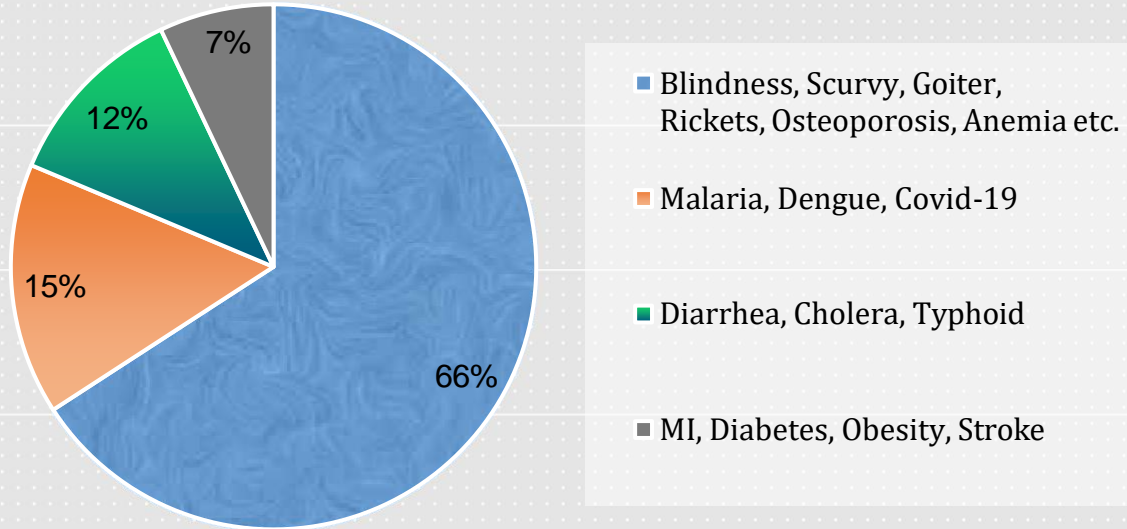
FIGURE 7: IDEA ABOUT PROBLEMS OCCUR WITHOUT CARBOHYDRATE, PROTEIN AND FAT IN OUR BODY.

- Obesity, Hypertension, Heart problem
- Weakness, Kwashiorkor, Marasmus, PEM
- Diabetes, Dyslipidemia, Stroke
- Anemia, Blindness, Rickets, Goiter
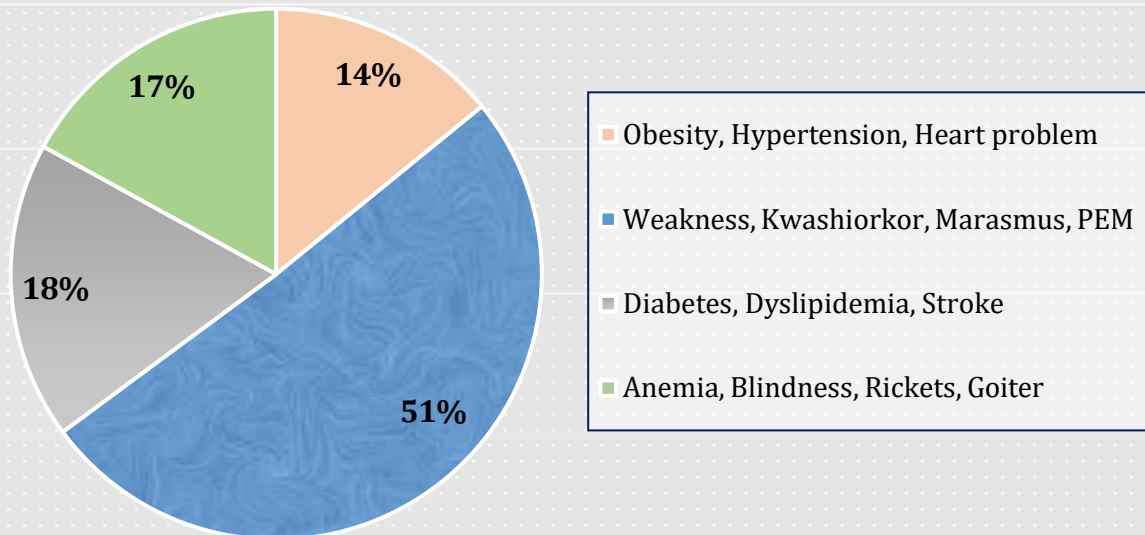
Table 2 - Awareness on suffering from any Vitamin & Mineral deficiency disorder.					
Any Vitamin deficiency disorder?	N= 510		Any Mineral deficiency disorder?	N= 510	
Options	n	n%	Options	n	n%

Yes	228	45%	Yes	230	45%
No	156	30%	No	122	24%
Not sure	126	25%	Not sure	158	31%
If yes, please mention.	**n**	**n%**	**If yes, please mention.**	**n**	**n%**
Vitamin A deficiency	19	8%	Calcium deficiency	53	23
Vitamin B deficiency	16	7%	Iodin deficiency	37	16
Vitamin C deficiency	7	3%	Iron deficiency	74	32
Vitamin D deficiency	30	13%	Zink deficiency	17	8%
Vitamin E deficiency	115	51%	Electrolyte Imbalance	49	21%
Vitamin K deficiency	41	18%			

Table 3 - Idea on examples of Communicable and Non Communicable Diseases.		
Examples of Communicable Diseases	**N= 510 (In each variable)**	
Water Borne Diseases	**n**	**n%**
Stroke, MI, Diabetes, Arthritis, Autism	59	12%
Cholera, Tyohoid, Diarrhea, Dysentary, Giardia	367	72%
Thalasemia, Anemia, Haemophilia, Cancer, Gout	46	9%
Don't know	38	7%
Mosquito Borne Diseases	**n**	**n%**
Typhoid, TB, Jaundice, Covid-19	90	18%
Malaria, Dengue, Chikunguniya	352	69%
Cholera, Diarrhea, Giardia	45	9%
Dont Know	23	4%
Sexually Transmitted Diseases	**n**	**n%**
Thalasemia, Anemia, Haemophilia, Cancer	99	19%
DM, MI, Dyslipidemia, Stroke	89	18%
Gonorrhoea, Syphilis, HIV, Viral Hepatitis	198	39%
Don't know	124	24%
Respiratory Tract Infections	**n**	**n%**
Cholera, Tyohoid, Diarrhea, Dysentary, Giardia	109	22%
Gonorrhoea, Syphilis, HIV, Viral Hepatitis	52	10%
Pneumonia, Influenza, Covid-19, TB	251	49%
Don't Know	98	19%
Others	**n**	**n%**
Cancer, Ulcer, Arthritis, Anemia	163	32%
Scabies, Skin infection, Rabies, Pox, Measles	199	39%
Gout, Body pain, Osteoporosis, Scurvy	148	29%

Examples of Non-Communicable Diseases		N= 510
Diseases	n	n%
Malaria, Dengue, Rabies, Pox, Measles	64	12%
Diabetes, Hypertension, MI, Dyslipidemia, Stroke, Osteoporosis	243	48%
Cholera, Tyohoid, Diarrhea, Dysentary, Giardia	72	14%
Don't Know	131	26%

Table 4 - Common Communicable & Non Communicable Diseases in their area.

Which communicable diseases are common in your area?	N= 510		Which non-communicable diseases are common in your area?	N= 510	
Diseases	n	n%	Diseases	n	n%
Dengue, malaria, diarrhoea, allergy	33	6%	Any Injury by accident	33	7%
Diarrhea	8	2%	Hypertension, Stroke	31	6%
Malaria	5	1%	Asthma, Anemia, DM	29	6%
Scabies	13	3%	Back Pain, CHD, Breathing Problem	34	7%
Diarrhea, Malaria, TB, AIDS	21	4%	Bronchitis, Cancer, Anemia	30	6%
Skin disease	112	22%	COPD, DM, CHD	27	5%
viral disease	15	3%	Daibetes Mellitus, Hypertension, Dislipidemia	43	8%
Dysentary	11	2%	Daibetes, Cencar, Anemia	43	8%
Food Poisoning	8	2%	Diabetes, Lung Disease	58	11%
TB	11	2%	Hypercholesterolemia, Hypertension	31	6%
Dengue	4	1%	Arthritis, Injury, Body Pain	28	6%
Diarrhea, malaria, TB	18	3%	Mental Disorder, Neuropathy, Arthritis	34	7%
Aching pox	77	15%	Not sure	89	17%
Typhoid	3	1%			
Viral Cold and Fever	103	20%			
Diarrhea, TB, AIDS	12	2%			
Not sure	56	11%			

Table 5 - Communicable & Non-Communicable Diseases suffering from. (Diagnosed by last three months)			
Non-Communicable Diseases	**N= 510**	**Communicable disease**	**N= 510**

suffering from			suffering from		
Diseases	n	n%	Diseases	n	n%
Diabetes Mellitus	28	6%	Skin Infection	112	22%
Stroke	21	4%	Any Diarrheal disease	101	20%
CHD	37	7%	Helminthiasis	27	5%
Anemia	28	5%	Dengue	13	3%
Dyslipidemia	18	4%	Hepatitis B	9	2%
Nephropathy	9	2%	Malaria	11	2%
Neuropathy	13	3%	Pneumonia	31	6%
Retinopathy	15	3%	Covid-19	26	5%
Cataract	27	5%	TB	18	4%
Non-Viral Hepatitis	12	2%	Typhoid	10	2%
Mental Disorder	26	5%	Viral Cold and Fever	48	9%
IBS	27	5%	Not sure	104	20%
Arthritis	23	5%			
Back Pain	25	5%			
Gastric Ulcer	18	4%			
Thyroid problem	12	2%			
Rheumatic Fever	19	4%			
COPD	16	3%			
Calcium deficiency	11	2%			
Bronchitis	2	0.50%			
Osteoporosis	21	4%			
Any Injury by accident	28	5%			
Not sure	74	15%			

Table 6: Prevalence of Communicable & Non-Communicable Diseases			
Non-Communicable Diseases	Prevalence	Communicable Diseases	Prevalence
MI	2.3	Covid-19	0.04
Stroke	1.1	Dengue	13
CHD	1.1	Diarrhea	4
Diabetes Mellitus	3	Dysentary	1
Iron deficiency	12	Food Poisoning	0.04
Dyslipidemia	0.45	Helminthiasis	11
Hypercholesterolemia	2	Cholera	0

Neuropathy	0.1	Hepatitis B	1
Retinopathy	0.1	Malaria	0
Cataract	1	Pneumonia	2
Non-Viral Hepatitis	3.5	Skin Infection	19
Mental Disorder	11	TB	0.05
Arthritis	13	Typhoid	0.05
Osteoporosis	4	Viral Cold and Fever	12
Rheumatic Fever	1	Hepatitis C	2
Back Pain	17	Pox	0
Gastric Ulcer	7	Mums	0.07
Stomatitis	1	Measles	0.08
Asthma	6	Oral Infection	2
Calcium deficiency	2	Conjunctivitis	3
Bronchitis	3	Rabies	0.05
Angina Pactoris	2	Titanus	0
Any Injury by accident	4	Scabies	15
Anemia	8	UTI	08
COPD	11	RTI	07

4. Discussions:

The research included a total of 510 participants who were Rohingya refugees, with the largest proportion (43.9%) belonging to the age range of 21-30 years. The gender distribution exhibited a near parity, with males comprising 51.8% and females comprising 48.2% of the sample. Approximately 54.3% of the participants reported a lack of formal education, whereas a notable proportion of the respondents (39.2%) self-identified as those engaged in domestic duties. It is worth mentioning that a significant proportion of the participants, specifically 56.9%, were in households characterized by joint family structures. Additionally, a substantial majority, precisely 60.2%, were in a marital relationship. A significant proportion (54.7%) of respondents indicated a monthly family income ranging from 3.5K to 7K in BDT, while a majority (64.9%) reported having 5 to 8 family members. The demographic findings presented here serve as a fundamental basis for comprehending the contextual factors that influence the evaluation of illness knowledge and awareness among the Rohingya refugee population. The demographic composition characterized by a youthful population and gender diversity implies the necessity for implementing comprehensive healthcare interventions that are specifically designed to address their distinct requirements.

The manuscript elucidates the participants' understanding of diverse health concerns pertaining to diseases. A notable majority of participants exhibited a recognition of aquatic illnesses and their modes of transmission, suggesting a somewhat elevated degree of understanding in this domain. The study findings indicated a comparable level of awareness on mosquito-borne diseases and understanding their transmission. It is worth noting that a significant proportion of the respondents shown awareness regarding communicable diseases, whilst a somewhat lower percentage exhibited knowledge pertaining to non-communicable diseases. Furthermore, a significant percentage of participants demonstrated familiarity with tuberculosis and HIV-AIDS as well as their respective methods of transmission. More than half of the participants demonstrated knowledge on various diseases and deficits associated with

malnutrition. The results of this study indicate that the Rohingya refugee population have a satisfactory degree of knowledge pertaining to different diseases and the methods through which they are transmitted. Awareness could serve as a foundation for programs focused on promoting health and education. The book offers valuable insights into the health practices of Rohingya refugees in relation to illness prevention. Remarkably, a significant percentage of participants indicated consistent adherence to hand washing with soap prior to meals and following toilet use, so exemplifying a commendable commitment to cleanliness. Furthermore, it was found that majority of the participants acknowledged the practice of treating or boiling water prior to ingestion, while a portion reported engaging in frequent nail clipping. Nevertheless, several aspects raised apprehension. In the study, it was found that most respondents indicated the utilization of mosquito nets, coils, or spray within their households. However, a little lower percentage of respondents acknowledged the practice of clearing shrubs and water containers as a preventive measure against mosquito breeding. Moreover, a mere 11% of individuals engaged in consistent physical exercise, while a relatively small proportion, specifically 12%, incorporated milk and dairy products into their usual dietary intake. Similarly, only 26% of participants ingested protein-rich foods daily. The findings emphasize the need to advocate for healthy lifestyles and nutritional practices within the Rohingya refugee population. The article offers valuable insights on the participants' understanding of nutrients, their origins, the occurrence of malnutrition, and the diseases that are linked to it. The participants demonstrated knowledge of several vitamins and minerals, as the majority accurately recognized vitamins A, B complex, C, D, E, and K as exemplars. Nevertheless, there were noticeable deficiencies in understanding, namely in relation to minerals. In relation to the origins of nutrients, it was found that majority of the respondents acknowledged fruits and vegetables as a significant source of vitamins and minerals. Conversely, a mere 8% of participants identified ghee, butter, and oils, while 11% highlighted fast foods and street foods. The acquisition of such knowledge has the potential to yield benefits in terms of promoting balanced meals and addressing issues of malnutrition among the Rohingya population. The respondents demonstrated an understanding of the correlation between vitamin and mineral deficiencies and several disorders, including blindness, scurvy, goiter, rickets, osteoporosis, and anemia, with a majority making these associations. Nevertheless, certain individuals brought up disorders that are not directly associated, indicating the need for further enhancement in comprehending the ramifications of nutrient insufficiencies. The manuscript incorporates an analysis of the viewpoints expressed by the participants about both communicable and non-communicable diseases. Regarding communicable diseases, a significant majority of individuals demonstrated accurate recognition of waterborne infections, including cholera, typhoid, diarrhea, dysentery, and giardia. Likewise, a significant proportion of individuals exhibited awareness on diseases transmitted by mosquitoes, such as malaria, dengue, and chikungunya. Nevertheless, when questioned about sexually transmitted illnesses, a mere portion of respondents accurately recognized gonorrhea, syphilis, HIV, and viral hepatitis. Furthermore, a significant proportion of respondents demonstrated appropriate knowledge in identifying respiratory tract infections such as pneumonia, influenza, COVID-19, and tuberculosis. Conversely, the remaining participants cited various other diseases as examples. In relation to non-communicable diseases, it was shown that about half of the respondents accurately recognized diabetes, hypertension, myocardial infarction (MI), dyslipidemia, stroke, and osteoporosis as illustrative instances. The findings underscore the significance of implementing health education programs that are specifically tailored to enhance individuals' understanding of both communicable and non-communicable diseases. The manuscript provides an overview of the prevalent diseases documented

among the Rohingya refugee population. The most reported communicable diseases were skin infections (22%), viral cold and fever (20%), and chickenpox (15%). The most prevalent non-communicable diseases were diabetes (11%) and lung disorders (11%). Tables 5 and 6 provided a more comprehensive breakdown of the occurrence rates of diseases, underscoring the imperative for healthcare initiatives that effectively target both communicable and non-communicable ailments within the Rohingya refugee population. To provide a contextual framework for these findings, it is crucial to draw parallels with the current body of literature pertaining to the health of refugees and their understanding of diseases. The demographic composition of the Rohingya population exhibits a significant proportion of young individuals, which is consistent with scholarly research that underscores the prevalence of youth within other refugee communities. Nevertheless, it is important to highlight the significant disparity in gender distribution (Abul Kalam Azad et al., 2022), as previous research has identified variations in healthcare access and knowledge among genders within refugee populations (UN WOMEN, 2018). The findings of the paper suggest that the Rohingya refugees possess a rather high level of knowledge concerning waterborne and mosquito-borne diseases. This observation is consistent with research indicating that refugees frequently acquire specialized information regarding diseases that are widespread in their respective countries of origin (Long, 2011; Khine Zaw, 2022). The observed prevalence of frequent handwashing among Rohingya refugees is a favorable result, aligning with endeavors to encourage hygienic behaviors among displaced communities (Faruque et al., 2022). Nonetheless, the insufficient participation in habitual physical activity and the restricted intake of milk and protein-rich meals indicate obstacles in the promotion of holistic health and nutrition (Banerjee, 2019). The participants' capacity to recognize vitamins and minerals is like the results observed in refugee populations from different geographical areas (Getachew et al., 2018). Enhancing the efficacy of nutritional therapies could be achieved by addressing deficiencies in knowledge pertaining to nutrient sources and their correlation with various diseases. The Rohingya refugees' capacity to identify prevalent communicable and non-communicable illnesses aligns with the significance of health education initiatives that are customized to meet the needs of groups (Parmar et al., 2021; Tan et al., 2021). The manuscript elucidates the understanding and consciousness of diseases within the Rohingya refugee population. Although the public exhibits a respectable level of awareness regarding numerous health issues, there exist significant deficiencies in health practices and information pertaining to nutrients, their sources, and certain disease categories. The results emphasize the significance of customized health education and intervention initiatives aimed at addressing the distinct health requirements of Rohingya refugees. It is crucial to consider their distinctive demographic attributes and cultural background when designing such programs. Moreover, this study makes a significant contribution to the existing body of literature on the health of refugees, offering useful insights into the various health-related difficulties experienced by this particularly vulnerable demographic.

5. Conclusion:

The study's findings offer significant insights into the knowledge and awareness on both communicable and non-communicable diseases among the Rohingya refugee community. This study helps in finding knowledge on and different health behaviors related to different diseases. In this study respondents replied about ideas on nutrients, their sources, malnutrition and associated diseases. Satisfactory ideas on different communicable & non-communicable diseases found. The respondents also mentioned about common communicable & non-communicable diseases in their particular area or camp, diseases they

were suffering from and also prevalence of different communicable and non communicable diseases was observed. Policymakers and healthcare providers can enhance health outcomes and facilitate disease prevention among displaced populations by comprehending the factors that impact disease awareness and behaviors. Nevertheless, it is imperative to acknowledge the limitations of the study and take them into account when interpreting the results. Additional research is required in various refugee settings to corroborate and build upon the existing discoveries, thereby augmenting the efficacy of healthcare interventions for marginalized populations on a global scale.

6. Limitations of the study:

Notwithstanding its valuable contributions, it is imperative to acknowledge the limitations inherent in the manuscript that necessitate careful consideration. The utilization of a cross-sectional design poses a constraint on the ability to establish a causal relationship between socio-demographic factors and disease outcomes. Longitudinal studies have the potential to offer a more comprehensive comprehension of the dynamic nature of disease prevalence and health behaviors among refugee populations over an extended period. Furthermore, the study's utilization of self-reported data may introduce response biases, potentially compromising the accuracy and reliability of the obtained results. The inclusion of clinical assessments or objective measures to validate self-reported information would contribute to the overall strength and reliability of the study. Moreover, it is important to note that the research was carried out within a particular refugee camp setting in Bangladesh. Therefore, caution should be exercised when attempting to apply the findings to other refugee populations or different settings. The socio-demographic characteristics and disease patterns are subject to variation across diverse refugee camps and regions.

7. Declarations:

7.1. Ethical approval

The ethical approval had been issued and the recommendations had been followed accordingly.

7.2. Conflict of Interest:

There is no conflict of interest among the authors.

7.3. Funding:

No funding

8. References:

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