Family Planning Knowledge, Attitudes and Practices Among Rohingya Women Living in Refugee Camps in Bangladesh: A Cross-Sectional Study

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Abstract

Background: Considering more than 720,000 Rohingya into Bangladesh, unplanned pregnancy, and serious complications of pregnancy among refugees, this study aims to explore the knowledge, attitude, and practice (KAP) of family planning (FP) and associated factors among the Rohingya women living in the refugee camps in Cox's Bazar, Bangladesh.

Methods: Four hundred Rohingya women were investigated, and data were collected using a structured questionnaire, which included socio-demographic characteristics, awareness of contraceptive methods, knowledge, attitudes and practices on FP. Linear regression analysis was performed to identify the predictors of outcome variables.

Results: Of the Rohingya refugee women, 60% were unaware that there is no physical harm in adopting a permanent method of birth control. Half of them lack proper knowledge of whether a girl was eligible for marriage before the age of 18. More than two-thirds think family planning methods should not be used without the husband's permission. Besides, 40% were ashamed and afraid to discuss family planning matters with their husbands, considering it as a sin. Of them, 58% had the opinion that a couple should continue bearing children until a son is born. Linear regression analyses demonstrated that Racidong in Myanmar as the region of residence, being professional, number of children, physician/nurse being the source of FP knowledge, having FP interventions in the camp, participating in a FP program, visiting a health facility, and talking with a health care provider on FP were significantly associated with Rohingya women's better KAP of FP.

Conclusions: The study showed that Rohingya refugee women are a marginalized population in family planning and the comprehensive FP-KAP capability was low. Contraceptives among the Rohingyas are unpopular, mainly due to a lack of education and family planning awareness. In addition, family planning initiatives among Rohingya refugees were limited by some traditional cultural and religious beliefs. Therefore, strengthening FP interventions and increasing the accessibility to essential health services and education are indispensable in order to improve maternal health among refugees.

Background

Over the last few decades, the number of forcefully displaced people identified as refugees has grown exponentially around the world. The most recent addition is Myanmar's Rohingya diaspora, who have left their homes together since 25 August 2017 [1]. The influx of more than 720,000 Rohingya into Bangladesh has produced the fastest-growing refugee crisis in the world since August 2017 and onwards [2–4]. Bangladesh's total number of unregistered refugees was about 220,000 before the recent influx [5]. Currently, more than one million displaced Rohingya now live in designated Rohingya camps [1, 2, 4, 6–9]. Among the refugees, women and children make up the majority [3, 4, 10–12].

Rohingya, while living in Myanmar, were deprived of nationality and fundamental rights of education and health care. The Government of Bangladesh and development partners such as the United Nations High Commissioner for Refugees (UNHCR), United Nations Children's Fund (UNICEF), United Nation Population Fund (UNFPA), World Health Organization (WHO), as well as other national and international development organizations, are working together to provide humanitarian relief to the Rohingya people [2]. The organizations have been involved mostly in providing life-saving aid to the refugees at the camps in Cox's Bazar. Family planning service has not drawn significant attention yet, although unplanned pregnancies under the current conditions would be hazardous [9]. Pregnant women living in the camps and suffering from malnutrition are likely to give birth to underweight babies, which makes matters even worse. Besides, a number of women have died from complications linked to teenage pregnancy in previous years and inadequate spacing between two births [9]. In addition, 179 mothers die from preventable causes related to pregnancy and childbirth for every 100,000 live births in the camps [13]—nearly two-and-a-half times the global maternal mortality goal of under 70 per 100,000 live births [14].

The absence or shortage of family planning programs would lead to a population boom that is likely to deteriorate the socio-economic state of the Rohingyas. According to UNICEF, more than 60 babies are born every day in 34 refugee camps in Teknaf and Ukhia Upazilas [15]. Save the Children estimates that 76,000 babies are born in the Rohingya camps in Bangladesh over the past three years [16]. Consequently, refugee people live in overcrowded camps, and diseases are taking a toll on their health. Bangladesh is worried about the massive increase in population as Rohingya men and women do not have much idea about birth control [17].

Now, one of the challenges for aid agencies is to stop the population from growing further, but family planning is a sensitive subject for the persecuted Rohingya community. In addition, child marriage is prevalent in society, leading to inadequate maternity and child health [2, 9].

Exploring the population's health needs and current health status is a timely and diligent requirement to help the Bangladesh government work in partnership with national and international organizations to provide key services in a more coordinated and effective manner. In an attempt to provide evidence and fill the knowledge gap, ICDDR, funded by UNFPA, performed a brief needs assessment of maternal and child health with special emphasis on women's pregnancy, lactation, and family planning status and current health status of children under five [1]. However, the status of family planning (FP) among Rohingya women has not been assessed yet, which can provide important evidence to improve maternal health. Therefore, this research was aimed to study the FP-KAP and influencing factors among the Rohingya women living in Cox's Bazar refugee camps, Bangladesh.

Methods

Study design and setting

This study uses a quantitative research approach designed with a camp-based cross-sectional survey. It was conducted at Rohingya refugee Camp-4 (located at Lombashiya, Modhurchora in Kutupalong Mega area) in Cox's Bazar, a district under the Chittagong division, geographically the largest of the eight administrative divisions of Bangladesh. We selected this camp as the study area as it is one of the largest camps.

Participants

Rohingya refugee married women of reproductive age (above 18 to 49 years) who were living with their husbands at the camps in the study area and had delivered at least one child at least one year before the survey were incorporated as the participants. The sample size was determined using the single population proportion formula considering the following assumption: $p = 50\%$ (it was hypothesized that the percentage frequency of outcome in the population was 50% for the estimated proportion of Rohingya women having better FP-KAP), significance level 5% ($\alpha = 0.05$), $Z_{\frac{\alpha}{2}} = 1.96$, margin of error 5% ($d = 0.05$). The required sample size was 384. Finally, a total of 400 refugee women were investigated and analyzed in our study.

Measurements

KAP questions were designed by a five-point Likert's scale (for the knowledge section: definitely true, probably true, not sure, probably false, and definitely false; for the attitude section: strongly agree, agree, neutral, disagree, and strongly disagree; for the practice section: always, often, sometimes, rare, and never). For the FP knowledge section, the score of each positive statement ranged from 1 to 5 for 'definitely false', 'probably false', 'do not know', 'probably true' and 'definitely true'. For the FP attitude section, the score of each positive statement ranged from 1 to 5 for 'strongly disagree', 'disagree', 'neutral', 'agree' and 'strongly agree'. For FP practice section, the score of each positive statement ranged from 1 to 5 for 'never', 'rarely', 'sometimes', 'often' and 'always'. The score was reversed for negative statements. The total score of FP knowledge, attitude and practice was the sum of score for questions for each section respectively.

Reliability and validity of the instrument

The content validity of the questionnaire was reviewed by three experts who had worked in the same field in order to establish the relevance of the questionnaire items to the study aims. Each expert reviewed the questionnaire separately and some changes were made in the questionnaire based on their recommendations. The internal consistency was also measured to check the reliability. Cronbach's Alpha (α) values of the scale of FP knowledge, attitude, and practice suggested very good internal consistency reliability for the scales of this study. The alpha (α) value is good among knowledge-related 10 items ($\alpha = .84$) and attitude-related 10 items ($\alpha = .89$) and strong among practice-related 10 items ($\alpha = .95$).

Data collection

The data collection started from 14th October and completed on 26th December 2019. Data were collected using a pretested, structured, and facilitator-administered questionnaire. The questions used in the questionnaire were prepared based on a review of the related literature. The survey was guided and conducted by ten female facilitators who have worked in the Rohingya camp for a long time and are quite familiar with the study setting. Ten Rohingya women from the survey area accompanied them to assist during data collection in the camp so that the study participants would feel comfortable talking with unknown people. Engaging the community members in conducting research is also suggested by Ahmed et al. [18]. All of these recruited Rohingya women had experience in working with their community. The facilitators were quite familiar with the Rakhine/Arakanese language, which helped them explain the questions to the interviewee.

Statistical analysis

Descriptive statistics were used to see the overall percentage distribution of the study for respondents' FP-related KAP items. The variables with $p < .05$ in bivariate analyses (independent-samples t-test and Pearson correlations) were included in the linear regression models. Multicollinearity was also checked. The ANOVA values for overall FP knowledge ($F = 64.84$, $p < .001$), attitude ($F = 59.56$, $p < .001$), and practice ($F = 170.36$, $p < .001$) report that the regression model was a good predictor of the main outcome variables. All these analyses were performed with 95% confidence interval using SPSS 24.0. Variables with $P < 0.05$ were considered as statistically significant.

Results

Socio-demographic characteristics of Rohingya women

Table 1 shows that of the respondents, 210 (52.4%) were from Buthidong sub-district and their mean age was 25.53 (± 6.34) years. More than half (51.8%) of them had no formal education and more than three-quarters (78%) were housewives. The mean amount of land the respondents owned in Myanmar was 5.27 (± 6.22) acres. The average number of children of the study participants was almost 4 (3.98 ± 2.60). As to media use, 233 (58.2%) listened to the radio and 103 (25.8%) used the internet. According to the findings, about one-third of refugee women reported that their

husbands solely took decisions about their FP use, while more than two-thirds (68%) of respondents reported that they decided as to FP and other reproductive health in consultation with their husbands. Of them, 181 (45.3%) reported that NGO workers and health workers were the primary sources of FP information, while 154 (38.5%) said that physicians and nurses were their key informants about FP issues.

Table 1
Socio-demographic and other characteristics of Rohingya women

Variable	Number	Percentage (%)
Region of residence in Myanmar		
Mongdu	121	30.3
Racidong	69	17.3
Buthidong & Others	210	52.4
Age (Mean $\pm$ SD)	25.53 years	$\pm$ 6.34
Educational status		
No education	207	51.8
Primary incomplete	107	26.8
Primary and above	86	21.6
Occupational status		
Housewife	312	78.0
Professional	88	22.0
Amount of land owned in Myanmar (Mean $\pm$ SD)	5.27	$\pm$ 6.22
Number of children (Mean $\pm$ SD)	3.98	$\pm$ 2.60
Listening radio		
Yes	233	58.2
No	167	41.8
Internet use		
Yes	103	25.8
No	297	74.2
Prime source of FP knowledge (n = 335)		
Doctor/nurse	154	38.5
NGO/health worker	181	45.3
The persons take FP decision		
Wife and husband	272	68.0
Husband	128	32.0

Rohingya women's awareness and use of contraceptives

Table 2 presents if the respondents had ever heard about contraceptive methods and if were currently using any of those. Of the Rohingya refugee women, 195 (48.7) heard about condoms, however, only 8 (2%) of their husbands used it during the study period. Besides, 336 (84%) are aware of the OCP and 115 (28.8%) were using it. In addition, only 42 (10.5%) heard about IUD, 9 (2.3%) are aware of Norplant as the contraceptive, but no one had used either of the two methods. Furthermore, 356 (89%) knew about the injection Depot-Provera and 162 (40.5%) had used it during the survey.

Table 2
Rohingya women's awareness of contraceptive methods and use of those

Contraceptive method	Heard about a method		Use of contraception	
	Yes [n (%)]	No [n (%)]	Yes [n (%)]	No [n (%)]
Condom	195 (48.7)	205 (51.3)	8 (2.0)	392 (98.0)
Oral Contraceptive Pill (OCP)	336 (84.0)	64 (16.0)	115 (28.8)	285 (71.2)
Intrauterine Device (IUD)	42 (10.5)	358 (89.5)	0 (0.0)	400 (100)
Norplant	9 (2.3)	391 (97.7)	0 (0.0)	400 (100)
Injection Depot-Provera	356 (89.0)	44 (11.0)	162 (40.5)	238 (59.5)
Female sterilization	14 (3.5)	386 (96.5)	13 (3.3)	387 (96.7)

The Reasons for not adopting FP by Rohingya women

Figure 1 displays the distribution of the causes for not adopting contraceptive measures by the respondents (N = 102) who were given the option for selecting multiple answers. Of them, 53 (51.96%) acknowledged that they were not using the family planning method due to their husbands' disapproval; 47 (46.08%) were not using it as they wanted to get pregnant; adopting FP method was considered as a cause for sin by 45 (44.12%); 29 (28.43%) thought that irregular sexual intercourse will not make them pregnant; 23 (22.55%) did not know how to use a contraceptive; 22 (22.57%) were worried about probable side effects; 17 (16.67%) did not want to use any; 11 (10.78%) believed that more children might bring financial solvency in the family; and according to 7 (6.86%), contraceptive usage might reduce the pleasure of sexual intercourse.

Rohingya women's access to FP programs and services

Figure 2 illustrates the respondents' access to health services and participation in different FP-related events. Of the Rohingya refugee women, 62.8% reported their participation at a meeting or event on FP organized by GoB/INGOs/NGOs and almost three-quarters (74.5%) received the FP-related interventions of government and NGOs in the camp. Furthermore, about 80% of the study participants visited a clinic or health center and 68.3% talked with the health worker as to FP issues.

Rohingya women's FP knowledge

Percentage distributions with a mean score of Rohingya women's FP knowledge-related items are reported in Table 3. Of them, 180 (45%) had accurate knowledge about the appropriate age of marriage for a girl. Of the respondents, only 162 (40.5%) answered correctly about whether taking a permanent contraceptive has any physical harm. Pertaining to the item 'using a contraceptive to have a negative effect on the husband-wife sexual relationship', 45.5% of the respondents had appropriate information. Moreover, 63% of Rohingya women responded correctly regarding the consequences of unintended or unplanned pregnancy. Relating to the item, 'a woman might have a risk if there is space less than 2 years between two births', 66.5% of respondents gave an affirmative reply.

Table 3
Descriptive analysis of FP knowledge-related items of Rohingya women

Item	False N (%)	Don't know N (%)	True N (%)	Mean $\pm$ SD
A girl can be married before 18 years old	212 (53.0)	8 (2.0)	180 (45.0)	3.16 $\pm$ 1.57
A couple can limit their family through adopting FP	10 (2.5)	16 (4.0)	374 (93.5)	4.67 $\pm$ 0.71
If any couple does not adopt any FP method they have a risk for unintended pregnancy	18 (4.5)	67 (16.8)	315 (78.8)	4.16 $\pm$ 0.90
Taking oral pill makes period regular	10 (2.5)	76 (19.0)	314 (78.5)	4.38 $\pm$ 0.71
There is no physical harm for those who take permanent contraceptive	175 (43.8)	63 (15.8)	162 (40.5)	2.91 $\pm$ 1.39
Taking contraceptive have a negative effect on husband-wife sexual relationship	182 (45.5)	70 (17.5)	148 (37.0)	3.17 $\pm$ 1.44
Unintended or unplanned pregnancy might lead to unsafe abortion	19 (4.8)	129 (32.3)	252 (63.0)	3.75 $\pm$ 0.82
A woman might have a risk if there is space less than 2 years between two births'	22 (5.5)	112 (28.0)	266 (66.5)	3.80 $\pm$ 0.83
A wife is responsible for giving birth to a female child	277 (69.3)	37 (9.3)	86 (21.5)	3.91 $\pm$ 1.42
Use of condom might protect from STDs like AIDS	6 (1.5)	104 (26.0)	290 (72.5)	4.24 $\pm$ 0.91

Rohingya women's FP attitude

Table 4 reveals that only 159 (39.8%) of Rohingya refugee women agreed that having two children is enough for a couple. Besides, 120 (30%) thought that using FP might be a cause for sin, and slightly less than one-quarter (23.3%) believed that discussing FP with her husband might be a cause for sin. In addition, 272 (68%) had an opinion that one should not adopt FP if her husband objects. Of the respondents, 57% opined for bearing children until a male child is born and 40% of them would express happiness if a son is born. Regarding the item 'having more sons will ensure the security of the parents in elderly age', 50% of the Rohingya women were in agreement.

Table 4
Descriptive analysis of FP attitude-related items of Rohingya women

Item	Agree N (%)	Neutral N (%)	Disagree N (%)	Mean $\pm$ SD
Having two children is enough for a couple	159 (39.8)	108 (27.0)	133 (33.3)	2.98 $\pm$ 1.22
Using FP might be cause for sin	120 (30.0)	40 (10.0)	240 (60.0)	3.51 $\pm$ 1.56
A couple should discuss and plan the timing of taking baby	302 (75.5)	36 (9.0)	62 (15.5)	4.01 $\pm$ 1.21
Discussion FP with husband might be cause for sin	93 (23.3)	23 (5.8)	284 (71.0)	3.82 $\pm$ 1.46
One should not adopt FP if her husband has an objection to it	272 (68.0)	35 (8.8)	93 (23.3)	2.24 $\pm$ 1.30
It may take the child until a male child born	228 (57.0)	21 (5.3)	151 (37.8)	3.37 $\pm$ 1.53
I might get more food cards if I have more children	29 (7.3)	103 (25.8)	268 (67.0)	4.07 $\pm$ 1.06
I am happy if the newborn is a son	153 (38.3)	12 (3.0)	235 (58.8)	2.77 $\pm$ 1.67
Having more sons will ensure the security of the parents in the elderly age	196 (49.0)	12 (3.0)	192 (48.0)	3.02 $\pm$ 1.52
Having more daughters might be a burden	52 (13.0)	32 (8.0)	316 (79.0)	4.12 $\pm$ 1.20

Rohingya women's FP practice

Table 5 shows that 43% of the respondents reported that they always felt ashamed to discuss FP and 45% were usually afraid of FP discussion with their husbands. In addition, about one-quarter always felt shy while discussing FP with relatives and neighbors. About three-quarters of Rohingya refugee women regularly used contraceptives during the study period. Furthermore, 60% of the respondents collect new contraceptive materials regularly after running out of them and 62% continued FP use despite its side effects.

Table 5
Descriptive analysis of FP practice-related items of Rohingya women

Item	Never/rarely N (%)	Sometimes N (%)	Often/always N (%)	Mean $\pm$ SD
I feel ashamed to discuss FP with husband	227 (56.8)	49 (12.3)	124 (31.0)	3.45 $\pm$ 1.70
I am afraid of discussion FP with husbands	222 (55.5)	62 (15.5)	116 (29.0)	3.51 $\pm$ 1.70
I discuss regarding FP with relatives and neighbors	111 (27.8)	201 (50.3)	88 (22.0)	2.83 $\pm$ 1.15
I feel ashamed to discuss FP with relatives and neighbors	249 (62.3)	50 (12.5)	101 (25.3)	3.68 $\pm$ 1.64
I use FP method	105 (26.3)	25 (6.3)	270 (67.5)	3.50 $\pm$ 1.58
I collect FP materials after finishing it	161 (40.3)	68 (17.0)	171 (42.8)	3.03 $\pm$ 1.54
I am satisfied using FP	111 (27.8)	43 (10.8)	246 (61.5)	3.44 $\pm$ 1.59
I adopt with FP side effects	147 (36.8)	127 (31.8)	126 (31.5)	2.86 $\pm$ 1.39
I discuss the FP-related issues with my husband	111 (27.8)	68 (17.0)	221 (55.3)	3.32 $\pm$ 1.54
I inform the health worker if I feel any complexities related to FP	113 (28.3)	43 (10.8)	244 (61.0)	3.42 $\pm$ 1.59

Linear regression analysis reporting factors associated with FP-related KAP

Table 6 demonstrates that Racidong in Myanmar as the region of residence ($\beta = .09$, $t = 2.84$, $p = .005$), being professional ($\beta = .10$, $t = 2.73$, $p = .007$), number of children ($\beta = -.28$, $t = -7.28$, $p < .001$), physician/nurse being the source of FP knowledge ($\beta = .21$, $t = 6.45$, $p < .001$), having GoB/INGOs/NGOs' FP interventions at the camp ($\beta = .15$, $t = 3.62$, $p < .001$), visiting a clinic/health facility ($\beta = .22$, $t = 4.96$, $p < .001$), and talking

with any health care provider ($\beta = .24$, $t = 5.54$, $p < .001$) were significantly associated with Rohingya women's high level of knowledge on FP and accounted for 66% of the variation in this regard.

Table 6
Linear regression analysis of factors associated with FP knowledge, attitude and practice of Rohingya women

Variable	Knowledge on FP			Attitude towards FP			Practice of FP		
	β	t	p	β	t	p	β	t	p
Region of residence in Myanmar [□]	.09	2.84	.005	.00	0.12	.902	.07	2.57	.010
Educational status [□]	.02	0.67	.507	.02	0.37	.713	-.08	-2.71	.007
Occupational status [§]	.10	2.73	.007	-.02	-0.38	.703	.07	2.27	.024
Age [‡]	.03	0.84	.399	-.06	-1.33	.183	.02	0.58	.565
Amount of land owned in Myanmar [‡]	.04	1.33	.185	.11	3.02	.003	.03	1.23	.220
Number of children [‡]	-.28	-7.28	<.001	-.17	-3.83	<.001	-.15	-4.54	<.001
The persons take FP decision [¶]	.06	1.83	.068	.06	1.49	.138	.04	1.44	.150
Prime source of FP knowledge [§]	.21	6.45	<.001	.18	4.88	<.001	.13	4.66	<.001
Ever had FP interventions in the camp [†]	.15	3.62	<.001	.25	5.45	<.001	.10	2.81	.005
Ever participated in FP program [†]	.05	1.39	.164	.12	2.82	.005	.07	2.33	.020
Ever visited clinic/health facility [†]	.22	4.96	<.001	.19	3.78	<.001	.46	12.31	<.001
Ever talked with health care provider about FP/RH [†]	.24	5.54	<.001	.16	3.19	.002	.24	6.32	<.001
	R ² =.66	F=64.84	<.001	R ² =.56	F=59.56	<.001	R ² =.74	F=170.36	<.001
[□] 1 = Mongdu/Racidong, 2 = Buthidong; [□] 1 = No education, 2 = Have education; [§] 1 = Housewife, 2 = Professional; [‡] Continuous variable, [¶] 1 = Husband & wife, 2 = Husband, [§] 1 = Others, 2 = Physician/nurse, [†] 1 = No, 1 = Yes									

Besides, the amount of land owned in Myanmar ($\beta = .11$, $t = 3.02$, $p = .003$), number of children ($\beta = -.17$, $t = -3.83$, $p < .001$), physician/nurse being the source of FP knowledge ($\beta = .18$, $t = 4.88$, $p < .001$), having GoB/INGOs/NGOs' FP interventions at the camp ($\beta = .25$, $t = 5.45$, $p < .001$), participation in a FP awareness program ($\beta = .12$, $t = 2.82$, $p = .005$), visiting a clinic/health facility ($\beta = .19$, $t = 3.78$, $p < .001$), and talking with a health care provider ($\beta = .16$, $t = 3.19$, $p = .002$) contributed significantly to the regression model ($F = 59.56$, $df = 4/387$, $p < .001$) and appeared as predictors of Rohingya women's positive attitude towards FP and accounted for 56% of the variation.

Furthermore, Racidong in Myanmar as the region of living ($\beta = .07$, $t = 2.57$, $p = .010$), being professional ($\beta = .07$, $t = 2.27$, $p = .024$), number of children ($\beta = -.15$, $t = -4.54$, $p < .001$), a physician/nurse being the source of FP knowledge ($\beta = .13$, $t = 4.66$, $p < .001$), having GoB/INGOs/NGOs' FP interventions at the camp ($\beta = .10$, $t = 2.81$, $p = .005$), participation in a FP awareness program ($\beta = .07$, $t = 2.33$, $p = .020$), visiting a clinic/health facility ($\beta = .46$, $t = 12.31$, $p < .001$), and talking with any health care provider ($\beta = .24$, $t = 6.32$, $p < .001$) were the most important factors influencing a regular healthy practice of FP and accounted for 74% variations.

Discussion

This study assessed the overall status of the knowledge, attitude, and practice regarding family planning among the Rohingya refugee women. We found that four-fifths of the Rohingya refugee women have accurate knowledge of the benefit of using contraceptives and potential risks of unplanned and unintended pregnancy. Most of the Rohingya women, while in Myanmar, had very little knowledge of family planning. Various NGOs informed them about family planning after coming to Bangladesh, which promoted Rohingya women got to know about it.

This study found a positive correlation ($r = .62$, $p < .001$) between the age of Rohingya women and the number of children. This implies that the Rohingya women will be likely to have more children as they have a minimum fertile period of 15 years. About 50% of women aged beyond 30 had six or more children. Despite having 5-6 children, the Rohingya women desire even more children. In addition, most of those who want to have more children want a son.

We also explored whether the respondents had ever heard about contraceptive methods and whether they were currently using any, which showed that 90% of the women did not know some contraceptive methods such as IUD and Norplant, although they knew about contraceptive injections, oral pills, and condom, which were the common methods provided now. But the local media reports that the Rohingya refugee women were initially given oral pills but they would take them home and throw them away. Later, they were brought under the three-month injection method, and most of them have adopted it. Although contraceptive methods have been introduced among the Rohingyas who have taken shelter in Bangladesh since the 1990s, this activity has increased in recent times after the massive influx of Rohingyas. Indeed, NGOs do not disseminate the information of different modern birth control methods among the Rohingya women as they are reluctant to use them [1, 19, 20].

According to the study results, one-third of the respondents said that their husbands make the decisions about their wives' health. Two-thirds replied that both husband and wife make decisions together. The majority of males have no interest in using condoms as they cannot provide complete sexual gratification. However, 3% of men adopted condoms because their wives had a side effect participation in a FP awareness program or severe complications after using a female-usable contraceptive method. The condom is also used by those who are a bit educated and have worked with NGOs.

Our findings also showed that there was a dearth of in-depth knowledge of family planning among the Rohingya women living in the refugee camp of Cox's Bazar even though they have some rudimentary ideas about small family norms and using contraceptives. There are a deep-rooted skepticism and some misunderstandings among the Rohingya regarding contraceptive methods. The literature reveals that contraception methods were accessible in Myanmar but most of the Rohingya were reluctant to use contraception due to fears of permanent sterility and other morbidities [2, 4]. Even for women, who have reported being willing to pursue family planning approaches, discontinuation may be motivated by the general climate of uncertainty and fear, particularly about health-related side effects [2]. Indeed, among the Rohingya women, religious conservatism and shyness are very common. Some women are ashamed to find about the details of family planning or contraceptive methods and some are not interested in knowing the details because of religious reasons [19]. Away from the light of education, this group is steeped in religious orthodoxy. To them, children are a gift from God; therefore, it is a great sin to prevent them from coming into the world [19].

Half of the respondents lack proper knowledge of whether a girl is eligible for marriage before the age of 18. Among the Rohingyas, girls are likely to get married at an early age. A previous study [2] noted a clear preference for girls but not boys on child marriages. There are some reasons behind the girls' early marriage in the Rohingya society. Firstly, this tendency is more prevalent in families where there are more daughters because they feel that more than one daughter still living with parents is a burden, and they want all their daughters to get married while they are still alive. Secondly, members of the community also say different types of harsh words and pass nasty comments if more than one young girl live with them, so, the parents want to marry their daughters off as early as possible. Thirdly, this is related to their faith. Girls are deemed suitable for marriage until they hit puberty. Parents believe that keeping young girls unmarried at home for too long a time is a sin. Fourthly, the Rohingya people are not financially solvent and that is why they want to send their daughters to the in-laws' house so that they do not have to bear the cost of their living with them for a long time. A qualitative study by Ainul et al. [2] identified some important shifts in the trends and behaviors of marriage after displacement. Unlike in Myanmar, the camps have no age limit on the wedding. So, Rohingya girls and boys tie the knot as early as the age of 14/15 years.

Rohingya women have also shown more interest in having more children. Lagging in their education, they still see childbirth as an achievement [21]. In our study, for example, only 40% opined that two children are enough for a couple. Half of the respondents think having more children will give them more protection and support in their old age. They think that the child is a God-gifted blessing; they will receive more rewards if there are more children. Getting food cards is also a factor here since it is available for every child [22]. By showing that card, parents get various benefits, including food, medicine, and clothes. They know that they will get more food cards or help if they have more children [23]. Many of the children's food items they get with food cards are sold outside the camp for cash. We too found this out at the Teknaf bus station: the food items provided by the UN were being sold openly among the host community. Some NGOs also encourage the Rohingya mothers to have more children by allocating them a small amount of money and giving food cards. As a result, Rohingya families do not use contraceptives although they are urged by the government to adopt FP. Another reason for Rohingya people to have more children may be explained by their thinking of Myanmar government's oppression to eradicate them ethnically. Having more children can also be an attempt to sustain their existence as a nation. Our assumption is also supported by media reports [23].

Our study findings also show that more than two-thirds of the Rohingya women think that family planning methods should not be used without the husband's permission. In Rohingya society, patriarchy prevails and women mostly do obey their husbands. They regard it as a sin to do anything against the wishes of their husband. Many husbands are reluctant to allow contraceptive use to their wives [24]. In addition, according to our findings, 58% of respondents said that they should continue childbearing the birth of a son. Besides, 40% of the respondents said that having borne a son is a matter of pride, while one-fifth considered daughters as a burden. Parents too have a similar feeling as marrying a daughter costs a lot, and daughters cannot take their parent's responsibility in the future. On the contrary, they have high expectations for a male child and think that the boy will earn money and bear parents' responsibilities later.

Our data also shows that more than 40% are ashamed of and afraid of discussing FP with their husbands, considering it as a sin. In Rohingya society, topics such as FP or birth control are perceived as a high-level taboo. Rohingya women are usually very conservative due to the prevailing

religious and social values. Socially, there is no positive viewpoint regarding FP or birth control, and religiously it is considered a sin. Those who have not yet adopted FP and are not interested in adopting it in the future are the extreme opponents. The women forming what is called the hard-core resister group by Rogers [25] are more religious and their husbands are older religious leaders. They need to be brought under FP through a strategic communication program. Otherwise, this radical opposition group has a higher likelihood of making a significant contribution to population growth in the refugee camps.

The knowledge and behavior of the women from Rachidong area are better than those of the Rohingya women from Maungdaw and Buthidong area as the communication system in Rachidong is much improved and Rachidong people have more opportunities of commuting to the city to study and interact with the people there.

According to the results, Rohingya women involved in various professions have a better KAP of FP. They normally work with various NGOs as the animator/teacher for providing education and psychosocial support, community mobilization for nutritional activities, cleaners, or as day laborers. NGOs offer different types of training and awareness sessions for them, so their attitude and behavior are positive. They are also interested in knowing about new things and they have a better chance to interact with the Bangladeshi staff more closely.

Women with fewer children were found to have better FP-KAP in our study. This cohort is more conscious and progressive than others as they engage and remain focused actively in various awareness sessions. Consequently, they become the primary and early receptive of FP services. Family members, in particular husbands and mothers-in-law, play a key role in making decisions about a married girl's childbearing and contraceptive options in the Rohingya society [2]. Nevertheless, the Rohingya women who can make their own decisions about their health have better FP-KAP. Generally, these women are aware and self-reliant. They also have a better attitude and perspective since their husbands and families allow their views to be expressed independently.

We observed that the Rohingya women who learned from doctors and nurses had better FP-KAP. In this case, all these women's interest plays a big role in listening carefully to the information provided by health care providers and applying it in real life. Health care providers have been able to talk to them, change their attitudes and make them more positive. According to the Department of Family Planning, in addition to raising awareness and birth control attitude among Rohingya men and women in the camps, doctors and nurses also provide various suggestions and medicines on pregnancy, maternity, child health, and general health services which appear to be more significant than that of NGO health workers. The benefits of these activities are being reaped. Many Rohingya couples now do not want to have 10-12 children; instead, they want to limit the number of children to 4-5 (DBC News, 2019). Most of these programs and services have created a positive outlook on FP that makes women and girls now more conscious than before [19].

Rohingya women who have visited a clinic and talked to a doctor have good FP-KAP. Doctors and nurses play a supporting role in making them understand FP. Nevertheless, in most cases, Rohingya women do not want to go to the clinic, or even if they do, they are not interested in hearing about FP. Those who are somewhat educated and aware visit the clinic to know about FP. Through visiting a clinic, they can observe the poster and other communication materials and be informed about different aspects of FP and maternal health issues.

There are some limitations. Firstly, the data from the participants may have been affected by social desirability, which could affect the validity of the outcome. Secondly, this analysis could not provide a more precise understanding and a more in-depth insight into the matter as no method of gathering qualitative data was used. Thirdly, the difficulties were even more marked because of the distances among different blocks where simultaneous data collection was going on. The data was collected from one camp due to a lack of adequate funds.

Conclusions

The study shows that the comprehensive FP-KAP capability of Rohingya refugee women is low. Contraceptives among the Rohingyas are unpopular, mainly due to a lack of education and family planning awareness. In addition, family planning initiatives among Rohingya refugees were limited by some traditional cultural and religious beliefs. Participation in a FP program, visiting a health facility, and talking with the health care provider were reported as the most significant predictors for a better FP-KAP. Therefore, designing appropriate campaigns and developing effective communication materials is important to improve this vulnerable community's maternal health status. Accordingly, politicians, program managers, and implementers should educate and equip Rohingya women on essential FP, reproductive and sexual health, and maternal health-related topics through a sustainable and continuous training program to increase their knowledge. Moreover, the program should also involve religious leaders in planning and implementation and provide them with appropriate training so that they too can play a supportive role as opinion leaders.

Abbreviations

ANOVA
Analysis of variance
FP

Family planning
GoB
Government of Bangladesh
ICDDR
International Centre for Diarrhoeal Disease Research, Bangladesh
INGOs
International non-governmental organizations
IUD
Intrauterine Device
KAP
Knowledge, attitude and practice
NGOs
Non-governmental organizations
OCP
Oral Contraceptive Pill
SD
Standard deviation
SPSS
Statistical Package for Social Sciences
UNICEF
United Nations Children's Fund
UNHCR
United Nations High Commissioner for Refugees
UNFPA
United Nation Population Fund
WHO
World Health Organization.

Declarations

Ethics approval and consent to participate

The study was reviewed and approved by the Research and Publication Office of the University of Chittagong. The study was conducted in accordance with the Declaration of Helsinki, and ethical approval for the study was provided by Ethical Review Board of the University of Chittagong (No. CU SOC-21-0003). **Informed consent was obtained from all participants.**

Consent for publication

Not applicable.

Availability of data and materials

All of the primary data has been included in the results. Additional materials with details may be obtained from the corresponding author.

Competing interests

The authors declare that they have no competing interests.

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Author contributions

AKA, MZ, TN, and JX were involved in the study design and conceptualization; AKA and TN supervised the data collection; MZ, MCD, and JX performed the data extraction and analyzing; AKA and MZ drafted the manuscript; MCD, TN, JX, and FC reviewed and edited the manuscript; AKA was involved in project administration; FC supervised the study. All authors have read critically and approved the final manuscript.

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Figures

Figure 1

Reasons for not using contraceptive by Rohingya women (n = 102)

Figure 2

Rohingya women's access to FP and RH services