WWJMRD 2022; 8(12): 4-11
www.wwjmrd.com
International Journal
Peer Reviewed Journal
Refereed Journal
Indexed Journal
Impact Factor SJIF 2017: 5.182 2018: 5.51, (ISI) 2020-2021: 1.361
E-ISSN: 2454-6615

Aisha Syed Wali
Sheikh Saeed Memorial Campus, Indus Hospital and Health Network, Korangi Crossing, Karachi, Pakistan.

Anum Rahim
Indus Hospital Research Center,Indus Hospital and Health Network, Korangi Crossing, Karachi, Pakistan.

Rabia Bibi
Sheikh Saeed Memorial Campus, Indus Hospital and Health Network, Korangi Crossing, Karachi, Pakistan.

Correspondence:
Aisha Syed Wali
Sheikh Saeed Memorial Campus, Indus Hospital and Health Network, Korangi Crossing, Karachi, Pakistan.

Implications of Myths and Misconceptions on Health Seeking Behaviors Regarding COVID-19 Among Women at Tertiary Care Hospital- A Cross Sectional Survey

Aisha Syed Wali, Anum Rahim, Rabia Bibi

Abstract
The world is facing a major health catastrophe due to the COVID-19 disease. Despite knowing the detrimental impact of this disease health-seeking behavior in Pakistan is affected by the spread of misconceptions and myths about COVID-19. The aim of our study was to identify these myths and health seeking behaviors in various women from diverse backgrounds, who were either seeking or providing healthcare services at a tertiary care hospital in the largest city of Pakistan. The study was conducted at Sheikh Saeed Memorial Campus of The Indus Hospital and Health Network, Karachi. Patients, attendants and hospital staff were interviewed. A total of 356 female participants responded to the survey. The mean age of participants was 30.33 (± 10.36) years. Categories of myths that significantly affected health seeking behavior included myths related to COVID-19 prevention, COVID-19 virus transmission and years of education. Myths and misconceptions about COVID-19 infection were prevalent in our women as in some other parts of the world, with a mixed pattern of health seeking behaviors.

Keywords: Myths, health seeking behavior, COVID-19, women, Pakistan.

1. Introduction

For almost a year and a half, the world is facing a major health catastrophe as a result of the novel coronavirus (COVID-19) disease [1]. As we go through the third wave of this pandemic, the world is faced with an economic standstill and people from across the world are suffering from deteriorating health conditions. This pandemic has led to an immense increase in mortality and morbidity [1]. As of 2nd November, 2022, there are 627,573,579confirmed cases of COVID-19, including 6,570,363 deaths across the globe [2]. The first case of COVID-19 in Pakistan was reported on February 26, 2020 in the Karachi, Sindh. As of today, Pakistan's COVID-19 count has risen to 1,574,167confirmed cases and 30,627deaths [3]. Despite this dreadful situation, it has been a challenge to motivate the public to comply with standard operating procedures (SOPs) for the prevention of COVID-19 infection [4]. False beliefs and myths is a global phenomenon and is an important contributing factor for noncompliance of SOPs [4].

A myth is defined as a widely held false belief or idea that has prevailed since the beginning of civilization. Culture has the potential to add to the spread or acceptance of a myth. The very nature of a myth is that it gets publicized widely in a very short time. People tend to follow a myth without questioning its authenticity or evidence in favor of or against it [5]. Political leaders and religious preachers also have a fair share in propagation of myths. Myths related to various infections have been prevalent from time to time. To elucidate existing myths by providing realistic evidence-based approaches is an ongoing battle for the medical community [1]. Myths can also play a fundamental and crucial role in the development of media narratives [6]. The role of these myths is evident in how they shape people's beliefs and their health seeking behaviors. The health-seeking behavior in general, and specifically in the context of developing countries like Pakistan, is strongly influenced

by sociocultural and religious beliefs [5]. The various preventive measures that came into practice with the emergence of COVID-19 infection now seem ridiculous as more knowledge is available regarding the virus and its transmission. Some of the misconceived practices that were prevalent amongst the Pakistani population included, using detergents when washing fruits, vegetables and grocery packets, keeping mobiles and other gadgets in plastic bags, using antiseptic or bleach spray on the entire body and leaving shoes outside the house [7]. One of the most painful practices, still used in some COVD-19 facilities, is not allowing any form of contact between an infected person and their family members. In the case of death of an infected person, they are buried at an unknown location without letting the family perform any burial rituals. According some media reports, there are certain areas in Pakistan where even family members and neighbors refrain from offering any help to an infected person, out of fear of the disease. People tend to hide their symptoms as they fear being stigmatized, taken away by officials to COVID-19 centers, or their family being imprisoned in their homes [8].

Despite creating awareness and providing adequate information about the virus' of mode transmission and the infection control measures amongst the general public [9], many myths and misconceptions about the emergence, spread, prevention and cure of COVID-19 infection prevail [10]. The many conspiracy theories about the emergence of COVID-19 infection and the rapid development of various types of vaccinations, has further confused the public and worsened the situation [11, 12].

Similar to other parts of the world, we noticed that health-seeking behaviors in Pakistan were affected by misconceptions and myths about COVID-19 infection. The aim of our study was to identify myths and changes in health seeking behaviors regarding COVID-19 infection amongst women from various socio-economic backgrounds, who were either seeking or providing healthcare services at a tertiary care hospital in Karachi, the largest city of Pakistan.

2. Materials and Methods

The study was conducted at Sheikh Saeed Memorial campus (SSMC) of The Indus Hospital and Health Network. SSMC provides OB/GYN services to women who belong to a lower socio-economic community.

2.1 Pre-testing of the Questionnaire

Pre-testing of the questionnaire was conducted at Indus Hospital after taking ethical approval from the Institutional review board. Fifteen participants volunteered to participate (mean age=32.22±3.2 years) in the preliminary study. Data from these participants was omitted from the main study analysis. One of the main objectives of this pre-test study was to evaluate the feasibility concerns for the main study's data collection and also to assess the comprehensibility of the questionnaire. The greatest amount of time required for all participants to complete the surveys was utilized as a measure of comprehensibility.

The pre-testing procedure involved providing participants with an explanation of the nature and purpose of the pre-test study before taking their verbal consent. The questionnaire was self-administered in the presence of the principal investigator or co-investigators. While completing the questionnaire, participants were asked for clarification where necessary. Additionally, after completing the questionnaire, participants were requested to comment whether they understood each phrase, word, response, or question. All participants stated that the questionnaire was easy to understand for them.

On average, participants took 15±4 minutes to complete the questionnaire, this was under the predicted time of 20±5 minutes. Overall, no changes were suggested by the participants on the total number of question items or the nature of the questionnaire after the pre-testing.

2.2 Translation of the Instrument

After assessing the content validity of the instrument, the questionnaire was translated into Urdu, a local language spoken in Karachi, Pakistan. A qualified translator, with knowledge about medical terms was used for the forward translation, striving for word-for-word translation. The Urdu version was reviewed by the expert and suggested certain changes. After adopting those changes, the Urdu questionnaire was back-translated to English. The translators were blinded to the specific purpose of the back translation, which was to compare the back-translated English questionnaire with the originally developed English questionnaire. Two versions of the English questionnaire were compared by two co-investigators, and any discrepancy arose discussed and resolved through discussion.

2.3 Content validation of the instrument

Content validity of the questionnaire was done after the pre-testing. Content experts were selected on the basis of subject expertise and researches in the field of reproductive health. Experts were given two weeks to respond to our request to review the questionnaire. For this purpose, an email was sent to them that included the background and purpose of the research, the English version of the questionnaire, and the evaluation criteria form. Two experts were selected, including obstetricians and epidemiologists, and they were asked to assess the relevance of each question in the instrument. This means that they had to assess whether each item in the questionnaire referred to an appropriate aspect of the constructs of myths being assessed. In addition, experts had to determine whether all of the items were relevant to the target audience and the questionnaire's intended purpose. To determine the importance of each question, they have to rate it on a 4-point scale. 4 means highly relevant, and 1 means not relevant. Experts were also asked to provide recommendations for each question which they would have score 1 or 2. All questions were rated either 3 or 4, and no changes were recommended in the instrument by any of the experts.

2.4 Data Collection

After receiving approval from the Ethical Review Board [IRD_IRB_2020_07_019], the data collection commenced from 6th October and lasted till 27th November 2020. A total of 356 participants were enrolled in the study. Face to face interviews were held with hospital staff from multiple departments including the medical, paramedical, housekeeping and administration department. Patients and their attendants were also interviews under full compliance of all SOPs. All responses were entered using a survey designed on REDCap data collection system. All patients

below the age of 18-years, who did not give consent or who were in the emergency room or labor ward were excluded from the study.

2.5 Reliability of study questionnaire

Reliability of all instruments used in the study was calculated using Cronbach alpha. The cronbach alpha value of the instrument used to assess Myths related to prevention of COVID-19 infection, Myths related to COVID 19 Virus transmission, Myths specific to reproductive health, Myths related to COVID-19 Infection, Miscellaneous myths and health seeking behavior is 0.77, 0.85, 0.82, 0.73, 0.76 and 0.81 respectively.

2.6 Statistical analysis

The data was analyzed on SPSS version 26.0 and all myths were categorized in five categories. To assess the impact of these myth categories on health seeking behavior, linear regression was used. Health seeking behavior was assessed using a Likert scale and a total health seeking behavior score was calculated by summing-up scores of individual items for each respondent. A higher score represented positive health seeking behaviors.

Firstly, a univariate analysis was done using the ordinary least square method. Variables significant in the univariate analysis (years of education, myths related to prevention of COVID-19 infection, virus transmission, infection mode and miscellaneous myths) were used in the multi variable analysis for making a final model. Assumptions of linear regression were assessed, including normality of residuals and homoscedasticity; both assumptions were correct. Multicollinearity was assessed using VIF and 1/VIF, no multicollinearity was found among any of the independent variables.

3. Results & Discussion

A total of 356 women from various backgrounds responded to the survey. The mean age of participants was 30.33 (± 10.36) years. Table 1 describes their sociodemographic characteristics including their years of education, marital status and pregnancy status. When questioned regarding their willingness to get the COVID-19 PCR test, only 66.86% of participants said they would be willing to get tested when offered. Out of those who agreed to get tested, more than half (53.88%) believed it had health related benefits, while 29.74% agreed to get tested only because it was a pre-requisite for hospital admission. Of the respondents who did not want to be tested for COVID-19, 10.08% had fear of isolation and fear of interventions each [Table 1].

Table 1: Sociodemographic Characteristics of Participants.

Table 1	
Characteristics	**n (%)**
Marital Status Single Married Divorced/Separated/Widowed	 96 (27.12%) 246 (69.49%) 12 (3.38%)
Years of education*	10.76 (9.30)
Currently Pregnant Yes No	 134 (37.75%) 221 (62.25%)
Reason of visiting hospital Patient Attendant Health care worker	 200 (56.66%) 55 (15.58%) 98 (27.76%)
Type of health worker Doctor Nurse/Paramedic staff Cleaning staff Administration Other	 38 (37.62%) 52 (51.49%) 3 (2.97%) 5 (4.95%) 3 (2.97%)
Willing to get tested Yes No	 236 (66.86%) 117 (33.14%)
If yes, why? Its free Has health benefits Pre-requisite for hospital For admission/Job Other	 16 (6.90%) 125 (53.88%) 69 (29.74%) 17 (7.33%) 5 (2.16%)
If no, why? Fear of isolation Stigma Fear of interventions Fear of ventilator Other	 12 (10.08%) 10 (8.40%) 12 (10.08%) 10 (8.40%) 75 (63.03%)

Myths regarding ways to protect and cure one's self, during the rise of COVID-19, are illustrated in Table 2. The most widely held myth to prevent COVID-19 infection was use of garlic, turmeric, lemon, Sana Makki (Senna) leaves and other traditional flu remedies. Only 23.60% of respondents did not believe in the preventative or curative powers of these remedies for COVID-19. However, the least prevailing myth, which only 43.47% of respondents

answered correctly was regarding the addition of pepper to a meal as a way to prevent or cure COVID-19, this myth had no effect on health seeking behavior.

Table 2: Myths related to COVID-19 infection.

Myths related to prevention and treatment of COVID-19 infection [Mean Score (SD) 2.51 (±2.15)]				
	Prevent	**Treat**	**No/No effect**	**Do not Know**
Eating garlic, turmeric, and/or lemon, Sana makki leaves (and other foods commonly used as home remedies for flu and the common cold) can help prevent/treat Covid-19 infection.	203 (57.02%)	34 (9.55%)	84 (23.60%) *	35 (9.83%)
Regularly rinsing your nose with saltwater or saline can help prevent/treat COVID-19 infection.	176 (49.58%)	74 (20.85%)	84 (23.66%) *	21 (5.92%)
Drinking warm water and getting enough sunlight are effective in preventing/treating COVID-19.	129 (36.34%)	83 (23.38%)	113 (31.83%) *	30 (8.45%)
Taking a hot bath can prevent/treat COVID-19 disease.	126 (35.69%)	69 (19.55%)	120 (33.99%) *	38 (10.76%)
Spraying alcohol or chlorine all over your body can kill the COVID-19 virus.	106 (29.94%)	72 (20.34%)	121 (34.18%) *	55 (15.54%)
Only N95 mask (and not other regular cloth and surgical mask) has effect on prevention and treatment of COVID-19 virus.	164 (46.33%)	64 (18.08%)	87 (24.58%) *	39 (11.02%)
Use of ultra-violet (UV) lamps on hands and other areas of your skin can prevent/treat COVID-19 virus.	36 (10.17%) *	55 (15.54%) *	133 (37.57%)	130 (36.72%)
Adding pepper to your soup or other meals prevent or cure COVID-19.	65 (18.47%)	56 (15.91%)	153 (43.47%) *	78 (22.16%)
Myths related to COVID 19 Virus transmission [Mean Score (SD) 5.31 (±2.08)]				
	Yes		**No**	**Do not know**
The new coronavirus can be transmitted through mosquito bite.	34 (9.60%)		276 (77.97%) *	44 (12.43%)
Pets at home can spread the COVID-19 virus.	66 (18.59%)		187 (52.68%) *	102 (28.73%)
Non-vegetarian food (meat/eggs/fish/chicken) consumption can lead to infection.	68 (19.21%)		194 (54.80%) *	92 (25.99%)
Donating blood can result in acquiring COVID-19 infection.	93 (26.50%)		169 (48.15%) *	89 (25.36%)
You would be at risk if someone infected in housing complex/neighborhood.	167 (47.58%)		114 (32.48%) *	70 (19.94%)
Handling of Newspapers, milk packets, and vegetables can transmit the infection.	128 (36.47%)		161 (45.87%) *	62 (17.66%)
All health care workers (HCWs) are a potential source of COVID-19 infection.	182 (51.85%)		105 (29.91%) *	64 (18.23%)
Someone without symptoms cannot spread the infection.	112 (32.00%)		181 (51.71%) *	57 (16.29%)
All those who been quarantined because of travel history had developed the COVID-19 infection.	62 (17.61%)		223 (63.35%) *	67 (19.03%)
Someone who has recovered from COVID-19 infection can still spread the infection.	63 (17.95%)		221 (62.96%) *	67 (19.09%)
Myths specific to reproductive health [Mean Score (SD) 2.54 (±1.60)]				
	Yes		**No**	**Do not know**
COVID-19 infection can be transmitted from the mother to the baby during pregnancy or childbirth.	82 (23.10%)		198 (55.77%)	75 (21.13%)

Pregnant women with COVID-19 infection need to give birth by cesarean section only.	41 (11.55%)	194 (54.65%)	120 (33.80%)
If pregnancy occurs, there is a high risk of miscarriage, abortion, or congenital malformations due to COVID-19.	45 (12.89%)	171 (49.00%)	133 (38.11%)
COVID-19 infection can be transmitted through breast milk to the newborn.	46 (12.96%)	191 (53.80%)	118 (33.24%)
Unprotected sexual intercourse can lead to transmission of COVID-19 infection.	87 (24.51%)	151 (42.54%)	117 (32.96%)
Miscellaneous Myths related to COVID-19 Infection [Mean Score (SD) 3.21 (±1.14)]			
	Yes	**No**	**Do not know**
COVID-19 affects only older people.	18 (5.07%)	311 (87.61%)	26 (7.32%)
Small children are not affected by COVID-19.	11 (3.10%)	275 (77.46%)	69 (19.44%)
People who get the coronavirus/COVID-19 will die.	20 (5.67%)	243 (68.84%)	90 (25.50%)
The Pakistani Immune system is better than the West, and thus, they will survive COVID-19 infection better.	124 (34.93%)	147 (41.41%)	84 (23.66%)
Anti-bacterial drugs are effective for therapy of COVID-19.	77 (22.19%)	168 (48.41%)	102 (29.39%)
Hand sanitizers are better than soap and water.	162 (45.63%)	149 (41.97%)	44 (12.39%)
Thermal scanners can detect COVID-19.	29 (8.22%)	219 (62.04%)	105 (29.75%)
If the public water supply is contaminated with COVID-19, the entire community will be infected.	109 (31.05%)	137 (39.03%)	105 (29.91%)
No vaccine can be developed against COVID-19 infection.	68 (19.26%)	190 (53.82%)	95 (26.91%)
Shoes spread the virus.	76 (21.53%)	190 (53.82%)	87 (24.65%)
Wear mask during exercise.	116 (32.68%)	172 (48.45%)	67 (18.87%)
Usage of 5G mobile networks spread COVID-19.	126 (35.90%)	131 (37.32%)	94 (26.78%)
Being able to hold your breath for 10 seconds or more without coughing or feeling discomfort mean you are free from COVID-19.	62 (17.61%)	191 (54.26%)	99 (28.13%)

*Correct answers

Table 2 also shows the prevalence of myths pertaining to COVID-19 transmissions. Given that initially there was no clarity about the spread of the virus, majority of participants (77.97%) correctly believed that mosquito bites were not the source of COVID-19 transmission, while 12.43% participants did not have any knowledge about it. Almost half of the participants (51.85%) thought that all health care workers were a potential source of infection and 47.58% believed they would be at risk getting infected if someone in their neighborhood or housing complex was infected with COVID-19.

Knowledge related to reproductive health and COVID 19 are illustrated in table 2 show more than half of the participants (55.77%) did not believe that COVID-19 could be transmitted from mother to baby during pregnancy or the birth process. Interestingly, 54.65% of women thought that suspected or confirmed COVID-19 infected mother should not give birth via cesarean delivery. When asked about transmission of COVID-19 infection to baby via breast milk, 53.80% of women did not believe it to be true. [Table 2]

Some miscellaneous misconceptions regarding COVID-19 infection reflects that a majority of participants (77.46%) believed that children could not be infected with the COVID-19 virus. The most accepted myth in this theme (34.93%) was that the Pakistani population has a stronger immune system than those in the West, which increased their chances of surviving the COVID-19 infection. About 45.63% women believed that sanitizers were more effective than soap and water. More than half of the participants (54.26%) did not believe that holding one's breath for more than 10 seconds was a viable method of testing for COVID-19 infection.

Health seeking behavior was assessed using six questions, where participant responses were recorded using a 5-point Likert scale [Table 3]. Almost 37.75% of participants relied on home remedies and 20.28% feared catching COVID-19 infection in a hospital setting. However, around 22% of participants said they would readily opt for surgery during the COVID-19 pandemic, compared to 9.32% who said they would never opt for surgery during the COVID-19 pandemic.

Table 3: Health Seeking Behavior.

Health seeking behavior (5-point scale)					
	Never	**Rarely**	**Someti**	**Freque**	**Always**

			mes	ntly	
If you or your family member feels sick, would you like to take them to hospital.	34 (9.58%)	24 (6.76%)	159 (44.79 %)	85 (23.94 %)	53 (14.93 %)
Do you prefer self-treatment with home remedies due to lockdown?	36 (10.14 %)	31 (8.73%)	130 (36.62 %)	134 (37.75 %)	134 (37.75 %)
Did you get affected by transport/distance to hospital issues during COVID.	41 (11.52 %)	48 (13.48 %)	97 (27.25 %)	105 (29.49 %)	65 (18.26 %)
Do you fear acquire COVID 19 infection if you go to hospital to seek health care?	62 (17.46 %)	42 (11.83 %)	94 (26.48 %)	85 (23.94 %)	72 (20.28 %)
If a surgery is planned for you or your family member, would you be comfortable to go ahead during COVID-19 pandemic.	33 (9.32%)	36 (10.17 %)	86 (24.29 %)	121 (34.18 %)	78 (22.03 %)
If you feel anxious or restless during this time and you are advised to seek mental health consultation. Would you like to reach out to them?	51 (14.45 %)	39 (11.05 %)	95 (26.91 %)	100 (28.33 %)	68 (19.26 %)

As seen in Table 2, the overall mean score of correct answers for myths related to the prevention of COVID-19 infection was 2.51 (±2.15), while the overall mean score for myths related to its transmission is 5.31 (±2.08). The mean score for myths related to reproductive health was 2.54(±1.60). In summary [Table 4], categories of myths that significantly affected health-seeking behavior included myths related to the prevention of COVID-19 infection, myths related to COVID-19 virus transmission and education level of respondents. With every single unit increase in knowledge regarding myths related to prevention of COVID-19 infection, health seeking behavior would be increased by 0.34 (95% CI: 0.15-0.54) units after adjusting with other independent variables. Moreover, with every single unit increase in knowledge related to COVID-19 virus transmission, the health
seek behavior score would be increased by 0.29 (95% CI: 0.-0.15) units after adjusting with other independent variables. With every single year increased in education, health-seeking behavior would be enhanced by 0.09 units (95% CI: 0.04-0.14).

Table 4: Relationship of different categories of myths with health seeking behavior.

Variable	Unadjusted B (95% CI)	p-value	Adjusted B (95% CI)	p-value
Myths related to prevention of COVID-19 infection	0.39 (0.19-0.59)	0.001	0.34 (0.15-0.54)	0.001
Miscellaneous Myths	0.31 (0.08-0.53)	0.006		
Myths specific to reproductive health	0.32 (0.05-0.59)	0.019		
Myths related to COVID 19 Virus transmission	-0.18 (-0.39-0.023)	0.082	0.29 (0.08-0.51)	0.007
Myths related to COVID-19 Infection	0.24 (-0.14-0.62)	0.22		
Years of Education	0.15 (0.06-0.19)	0.001	0.09 (0.04-0.14)	0.001
Marital Status				
Single	-	0.15		
Married	-0.24 (-1.22-0.74)			
Divorced/Widowed/Separated	-2.46 (-4.95- 0.021)			

We initiated the data collecting as the first wave of COVID-19 came to a decline in Pakistan and currently we are experiencing the third wave of COVID-19. During this time, we have observed variable behaviors in the masses in Pakistan during this period. Due to economic reasons coupled with enormous concerns and pressure from the medical community and international institutions, Pakistan adopted the policy of partial lockdown during first wave [13]. There was an effective awareness campaign to motivate adherence of SOPs through National Command Operation Centre [14] using mass dissemination on social media, advertisements, cliparts, banners and circulation of memos to educational institutions, offices and mosques [14] Generally, better compliance was observed in upper and middle-class people who had greater access to education and resources. Compliance with SOPs was a challenge for many religious groups and those belonging to lower socio-economic classes. Some of the reasons for non-compliance in these groups included lack of resources, multiple people sharing one room without provision of proper ventilation or water supply. Based on our observations, we think that myths and misconceptions also played a role in noncompliance to these SOPs. It was reported that the lack of literacy and widly held myths and misconception in Pakistan has resulted in the poor implementation of social distancing and hygiene practices [15]. Yohannes et al found that in Ethiopia different misconceptions prevailed about COVID-19 infection, including the misconception that younger people were at lower risk of getting the infection. This false sense of security and poor adaptations of standard precautions resulted in quick spread of virus [16].
We found that 34.93% of women believed that the immune system of the Pakistani population was stronger than that of the Western population. They believed that COVID-19 was a disease that effected only the wealthy and that the poorer population were immune to it. This is similar to what Shcmidt T et al. reports in his paper, where specific groups i.e. 'black' South Africans perceive themselves to be immune to catching the virus unlike white wealthy South Africans and people of Asian descent. They also thought that younger people were less vulnerable to catch the infection [10]. On the contrary, Pakistani women believed

that this disease would not affect only older people (87.61%). Moreover, they believed that children could also be affected (77.46%), although at the time of data collection not many children were affected by the virus and were thought to be protected.

In the surveyed population, majority of women believed in preventive and healing powers of eating garlic, turmeric, lemon, Sana Makki (Senna) leaves and rinsing nose with saltwater. These practices maybe the reason they had a false sense of security from the virus and led them to focus less on the adherence of SOPs. Only 23.6 % of women thought that these ingredients had no effect. Similar myths were reported in Ethiopia; effectiveness of selected foods in 49.0% and perceived protectiveness of hot weather in 26.0%, perceived religiosity in 54.7%, in addition to false assurances in 36.9% who believed that there were no locally reported cases of COVID-19[16].

On the other hand, we found variable knowledge regarding COVID-19 virus transmission. Half or lesser women thought that they could get infection from someone infected in the house or neighborhood (47.6%) or from healthcare workers (51.9%). These observations highlight their misconceptions about transmission, hence decreased focus on SOPs. Regarding transmission through mosquitoes, pets, non-vegetarian food and newspaper etc., the women seemed to be more aware. Evalin K et al also reports high level of awareness about COVID-19 among people in Kenya, that lead to better compliance to SOPs to reduce infection [17].

A similar trend was seen among our women regarding reproductive health, where almost half of them rightly thought that cesarean section was not required for delivery. Most of them believed that infection did not spread from mother to baby during pregnancy, delivery and breastfeeding. On the contrary, Hernain et al showed that the awareness of pregnant women about pandemic was far from reality and appears to be related with an indirect effect on the apprehension and psychological pressure of pregnant women in Colombia [18]. In literature there are conflicting results about vertical transmission of infection during pregnancy and transmission through breast milk. There is no evidence of cultures of COVID-19 virus in breastmilk [19]. Association of COVID-19 infection with miscarriage and congenital anomalies have been made but yet no direct evidence has been established [20, 21].

In our community, we observed reluctance for the COVID-19 test and a perception of stigma for those who turn out to be COVID-19 positive. Some of our registered women who were scheduled for cesarean delivery, turned down the request for COVID-19 PCR test and cancelled registration. In this survey, 66.86% of women would have opted to get tested if offered, including 29.74% due to it being a pre-requisite for hospital admission and 53.88% for health benefits. Schmidt T et al also reported confusion about the COVID-19 virus testing in South Africa because of perplexing information on internet [10]. In Kenya, female relief aid workers refused COVID-19 tests as they assumed to be already infected and people were not accepting the vaccinations because of fear of acquiring the infection through it [17].

Within weeks of the emergence of this pandemic in China, there have been circulation of misinformation, misleading rumors and conspiracy theories about the origin [22]. In our study, 36% women thought that 5G mobile networks spread the disease. In another survey, Wasim et al reported that 34.8% people linked COVID-19 with 5G [23]. Anwar et al reported that 72.59% Bangladeshi women thought COVID 19 to be common flu, while 25.32% of the women considered it a curse from the God [24].

In developing countries and regions like Pakistan, people tend to do self-treatment, seek un-prescribed medicines from pharmacies, visit traditional healers or unregistered clinics. Tran BX et al mentions similar barriers in access and utilization of health care services in resource-scarce settings where people do not access hospitals and official health stations as places of first contact for health issues, for example, people in Pakistani regions (39.1%) and Indonesia regions (42.9%) preferred going first to pharmacy to treat illness [25]. This trend was reflected in our women where majority of them would prefer self-treatment for symptoms of COVID-19. Although most of them believed that they would be at risk of acquiring COVID-19 infection at health facility, they would still go ahead for planned procedures and would consider to visit health facility when sick. Overall myths and misconceptions did not affect the health seeking behavior in the studied population [Table 3]. In another city of Pakistan, Arshad et al observed that people preferred private health providers over the government facilities for COVID-19 infection [26]. This might be due to the misinformation, panic, and uncertainties spread by the social media about government setups. Overall, there was an increased trend of self-medication and a decreased number of people visiting the hospital for their ailments during the pandemic [26]. Saah et al observed that in Ghana dissemination of knowledge on COVID–19 pandemic and relevant SOPs has presented a positive cue to action and helped improved health knowledge, lifestyle, and care seeking behavior to some extent although existing health system constraints and low economic status reduced healthcare utilization [27].

4. Conclusions

Myths and misconceptions about COVID-19 infection were prevalent in our women as in some other parts of the world, with a mixed pattern of health seeking behaviors. Overall myths and misconceptions regarding prevention and virus transmission, and their education had an impact on the health seeking behavior in the studied population.

References

1. Sahoo S, Padhy SK, Ipsita J, Mehra A, Grover S. Demystifying the myths about COVID-19 infection and its societal importance. J Asian journal of psychiatry. 2020.
2. (WHO) WHO. WHO Coronavirus (COVID-19) Dashboard 2021 https://covid19.who.int/?adgroupsurvey={adgroupsurvey}&gclid=EAIaIQobChMIg-fHt_H98AIV0QIGAB1HHw65EAAYASABEgLFxvD_BwE.
3. Center NCaO. COVID 19 STATS 2021 [Available from: https://ncoc.gov.pk/.
4. Humayun A, Shahabuddin S, Afzal S, Malik AA, Atique S, Iqbal UJCM. Healthcare strategies and initiatives about COVID19 in Pakistan: Telemedicine a way to look forward. J Computer Methods Programs in Biomedicine Update
5. 2021; 1:100008.

6. Qureshi N, Shaikh BT. Myths, Fallacies and Misconceptions: Applying Social Marketing for Promoting Appropriate Health Seeking Behavior in Pakistan. Anthropol Med. 2006;13(2):131-9.
7. Sola Morales S. Myth and the construction of meaning in mediated culture. J KOME: An International Journal of Pure Communication Inquiry
8. 2013;1(2):33-43.
9. (WHO) WHO. Coronavirus disease (COVID-19) 2021 https://www.who.int/news-room/q-a-detail/coronavirus-disease-covid-19.
10. Prevention CoDCa. Reducing Stigma 2021 https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/reducing-stigma.html.
11. (CDC) CoDCaP. COVID Data Tracker 2021 https://www.cdc.gov/coronavirus/2019-ncov/index.html.
12. Schmidt T, Cloete A, Davids A, Makola L, Zondi N, Jantjies M. Myths, misconceptions, othering and stigmatizing responses to Covid-19 in South Africa: A rapid qualitative assessment. PLoS One. 2020;15(12):e0244420.
13. Douglas KMJGP, Relations I. COVID-19 conspiracy theories. 2021;24(2):270-5.
14. (CIDRAP) CfIDRaP. Scientists: 'Exactly zero' evidence COVID-19 came from a lab
15. 2021 [Available from: https://www.cidrap.umn.edu/news-perspective/2020/05/scientists-exactly-zero-evidence-covid-19-came-lab.
16. Times TE. Pakistan imposes partial coronavirus lockdowns 2021 https://economictimes.indiatimes.com/news/international/world-news/pakistan-imposes-partial-coronavirus-lockdowns/articleshow/81745843.cms?from=mdr.
17. (NCOC) NCaOC. Virus Prevention 2021 https://covid.gov.pk/prevention.
18. Noreen N, Dil S, Niazi S, Naveed I, Khan N, Khan F, et al. COVID 19 pandemic & Pakistan; limitations and gaps. J Global Biosecurity 2020;1(4).
19. Kebede Y, Birhanu Z, Fufa D, Yitayih Y, Abafita J, Belay A, et al. Myths, beliefs, and perceptions about COVID-19 in Ethiopia: A need to address information gaps and enable combating efforts. J PloS one. 2020;15(11):e0243024.
20. Karijo E, Wamugi S, Lemanyishoe S, Njuki J, Boit F, Kibui V, et al. Knowledge, attitudes, practices, and the effects of COVID-19 on health seeking behaviors among young people in Kenya. 2020.
21. López-Morales H, Del Valle MV, Canet-Juric L, Andrés ML, Galli JI, Poó F, et al. Mental health of pregnant women during the COVID-19 pandemic: a longitudinal study. J Psychiatry research. 2021; 295:113567.
22. Vale AJM, Fernandes ACL, Guzen FP, Pinheiro FI, de Azevedo EP, Cobucci RN. Susceptibility to COVID-19 in Pregnancy, Labor, and Postpartum Period: Immune System, Vertical Transmission, and Breastfeeding. Front Glob Womens Health. 2021; 2:602572.
23. Wong TC, Lee ZY, Sia TLL, Chang AKW, Chua HH. Miscarriage Risk in COVID-19 Infection. SN Compr Clin Med. 2020;2(9):1449-52.
24. Khan MSI, Nabeka H, Akbar SMF, Al Mahtab M, Shimokawa T, Islam F, et al. Risk of congenital birth defects during COVID-19 pandemic: Draw attention to the physicians and policymakers. J Glob Health. 2020;10(2):020378.
25. Kar SK, Arafat SY, Kabir R, Sharma P, Saxena SK. Coping with mental health challenges during COVID-19. Coronavirus disease 2019 (COVID-19): Springer; 2020. p. 199-213.
26. Ahmed W, Vidal-Alaball J, Downing J, Lopez Segui F. COVID-19 and the 5G Conspiracy Theory: Social Network Analysis of Twitter Data. J Med Internet Res. 2020;22(5):e19458.
27. Anwar M, Green J, Norris P. Health-seeking behaviour in Pakistan: a narrative review of the existing literature. Public Health. 2012;126(6):507-17.
28. Tran BX, Vu GT, Le HT, Pham HQ, Phan HT, Latkin CA, et al. Understanding health seeking behaviors to inform COVID-19 surveillance and detection in resource-scarce settings. J Glob Health. 2020;10(2):0203106.
29. Arshad AR, Bashir I, Tariq A, Ijaz F, Aftab RK, Farooq OJDR. A Population Based Study on the Healthcare Seeking Behaviour During the COVID-19 Outbreak. 2020;3:e14.
30. Saah FI, Amu H, Seidu AA, Bain LE. Health knowledge and care seeking behaviour in resource-limited settings amidst the COVID-19 pandemic: A qualitative study in Ghana. PLoS One. 2021;16(5):e0250940.