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Knowledge, Attitude, and Practices of General Population of Pakistan towards COVID-19 and their Psychological Distress

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Abstract

The present study aimed to investigate the knowledge, attitude, and practices of general population of Pakistan during COVID-19 pandemic, and their psychological distress. It was a cross sectional study. Data were collected via demographic datasheet, Knowledge, Attitude and Practices (KAP), a 16-item questionnaire, and Kessler Psychological Distress Scale (K-10). The sample comprised of 791 participants, including both genders and all age groups. Data were collected countrywide, through Google survey form during the months of April and May. Statistical analyses revealed that large percentage of respondents (82.93% and 71.30%) were confident about winning and controlling over COVID-19 situation. As the pandemic related preventive practices concern, a large majority showed compliance with precautionary strategies via wearing mask (84.57%) and restraining themselves from visiting crowded places (92.54 %). Analyses of *t*-test showed that female participants and people living in a nuclear family system reported more distress as compared to male participants and people living in a joint family system. Gender, age, and family system showed statistically significant relationships with psychological distress. It was concluded that until such time that any remedy to COVID-19 appears throughout the world, there is a need to focus on prevention and control methods. The people need to adopt strategic design of health promotion regarding COVID-19 for a successful health program. It was a preliminary study; more empirical studies are needed to explore and assess the nature and determinants of psychological issues of people during COVID-19 pandemic and psychotherapeutic interventions should be tailored accordingly.

Keywords: COVID-19, Knowledge Attitudes and Practices, Pakistan, Psychological Distress

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Introduction

Coronavirus (abbreviated "COVID-19") is an evolving respiratory disease that is caused by a unique virus called coronavirus. The clinical symptoms of this extremely contagious virus are fever, dry cough, fatigue, myalgia, and dyspnea with the chances of causing severe breathing complications. It has impacted all the governments, nationalities, and public health systems. World Health Organization (WHO) has declared a public health emergency in all the countries and issued a list of preventive measures to limit the further spread of virus (Chen et al., 2020).

The first outbreak of COVID-19 was observed in Wuhan city, China in December

2019, where hundreds of cases were reported and rapidly spread in other cities which eventually spread across the globe causing 218 countries to be affected. Later, WHO declared emergency when 71,429 cases were reported worldwide, and still number of people affected by this virus is increasing dramatically. Currently, the novel coronavirus has moved out from China (82,930), and cases have been reported in all over the world including Japan (3,271), Thailand (2,067), Singapore (1,189), Australia (5,635), Germany (91,714), United States (2,73,808), Malaysia (3,483), France (67,757), United Arab Emirates (1,505), Canada (12,938), Italy (1,24,632), Russia (4,731), Philippines (3,094), United Kingdom (41,907), Finland (1,882), Nepal (09), Spain (1,24,736), Sweden (6,443), India (3,374) and in Pakistan (2,880) (WHO, 2020a). This virus is so contagious that it is getting increased on hourly basis.

Lives of individuals, families, friends, employees, and others are at risk due to the infectious nature of COVID-19 and its effects. Around the globe, awareness campaigns are being run at governmental levels for the awareness/knowledge of people and it helps those, who are adopting corrective and protective attitudes/behaviors towards this virus and practices to stop its further spread. Therefore, applying preventive measures to control COVID-19 infection is the most critical intervention (Yao et al., 2020). So, the entire world is static and isolated, staying at homes forcefully due to lockdown that is causing immense insecurity, helplessness, anxiety, fear, and worries irrespective of creed, cast, nationality, sex, and age. This epidemic all around the globe has caused psychological and mental health issues, such as panic disorder, anxiety attacks, phobias, psychological distress, fear of unknown, unpredictability and depression (Yao et al., 2020).

Due to the rapid outbreak of this deadly virus, an immense fear of death, extreme worry, and health related concern can be seen in individuals especially, in the segments of population like old citizens, people with chronic diseases, children, and care providers. This gives rise to the feelings of loneliness, depression, and panic that lead to many individuals to use more alcohol and drugs, rise in domestic violence and in self-harm behaviors (WHO, 2020b).

Like previous pandemics, outbreak of this virus has given significant rise to mental health concerns as people are simultaneously suffering from both fear of death and forcefully staying in quarantine. At the moment, unemployment, decline in trading and business, and great disruptions can be seen in education systems that are affecting mental health of general population severely and causing anxiety (Cao et al., 2020).

A number of studies can be found, targeting the psychological sufferings of general population, knowledge and attitude of people regarding COVID-19, and psychological sufferings of particular age group due to this virus (Joob & Wiwanitkit, 2020; Kang et al., 2020; Tan et al., 2020; Wang et al., 2020) and lack of in-depth analysis to identify risk or protective factors for mental health (Zhang et al., 2020). Chinese population has reported the low psychological well-being with higher rates of anxiety and depression along with excessively hazardous alcohol consumption during this pandemic (Ahmed et al., 2020). The level of anxiety got higher if COVID-19 contracted person was in family, friends, relatives or known person and women were more anxious as compared to men (Moghanibashi-Mansourieh, 2020). The psychological problems caused by this pandemic is not limited to general population only as during this tough time, behavioral symptoms of ADHD in children also got worst as reported by their parents (Zhang et al., 2020). A recent longitudinal study carried

out by Wang et al. (2020) has reported moderate-to-severe stress, anxiety and depression among Chinese general population during the initial outbreak evaluation, and there were no significant longitudinal changes found in stress, anxiety and depression levels of people after four weeks. The study also reported high level of confidence in doctors, perceived survival likelihood and low risk of contracting COVID-19, satisfaction with health information, and personal precautionary measures as significant protective factors to combat the spread of disease. They strongly recommended the government of China to focus on effective methods of disseminating fair COVID-19 knowledge, teaching correct measures to control the spread of disease, and providing sufficient financial support and necessary services and commodities.

Above mentioned literature highlights the significance of knowledge, attitudes, and practices (KAP) in stress and well-being of general population during COVID-19 pandemic. Given that psychological sufferings of general population during the outbreak of this deadly virus is very rapid around the globe. Pakistan is amongst the countries that have been badly hit by COVID-19 outbreak. The present study aimed to assess knowledge, attitude and practices of general population of Pakistan and the relationships of KAP and demographic variables with the distress level of people of Pakistan. In this respect, to our knowledge, this is the first study in Pakistan, which aimed to find out the knowledge, attitudes, and practices of the Pakistani people about COVID-19 and to assess the role of demographic variables and KAP in the psychological distress in this current pandemic situation.

Hypotheses of the Study

H_1: There are significant gender differences on the scores of knowledge of COVID-19 and psychological distress

H_2: People living in joint and nuclear family system significantly differed in terms of knowledge of COVID-19 and psychological distress

H_3: There are significant relationships among demographic variables (viz., age, living condition, and years of education), knowledge, attitudes, and practices of the people about COVID-19 and their psychological distress

Method

The cross sectional study was designed to examine knowledge, attitude, and practices (KAP) of the people in Pakistan about COVID-19 and their psychological sufferings/ distress. A total of 791 participants responded to the following instruments, through Google survey form nationwide during the months of April and May, 2020. All the instruments were circulated in both languages Urdu and English, so that people could respond in their preferred language.

Demographic Information Sheet

The Demographic Information Sheet covered participants' age, gender, education, current living conditions, employment status, and family system (joint / nuclear), marital status and number of children in case they are married.

Knowledge, Attitude and Practices (KAP)

KAP is a 16-item questionnaire containing 12 items to assess knowledge and 2 items each assessing attitudes and practices regarding COVID-19 (Zhong et al., 2020). Scales was used and translated with the authors' permission. The Urdu and English versions of KAP showed moderate Cronbach's alpha (.65 and .75) for Urdu and English versions respectively, which are satisfactory to run further analysis.

Kessler Psychological Distress Scale

The scale was originally developed by Kessler et al. (2002) and was translated in Urdu by Hussain and Kausar (2010). The K-

10 is a 10 item questionnaire that measures the psychological distress of past 30 days. The scale is available in the public domain, however, permission to use the translation of the scale was sought from the authors. The participants were asked to mark the most appropriate option against the given scale items by keeping in view the COVID-19 pandemic situation. Reliability analysis showed high Cronbach's alpha for K-10 were .89 and .87 for Urdu and English versions respectively.

Procedure

An online google form was created and disseminated among friends, colleagues, and family members. A convenient sampling technique was used. Link was also sent online to WhatsApp groups and on Facebook by all the authors and people were requested to participate and disseminate the link further. Initially it was planned to keep the google survey link on for one week, but due to low response rate, it kept on for four weeks and 791 participants responded to this survey form.

Results

Table 1

Demographic Characteristics of the Participants of Study and Group Differences on Scores of Knowledge of COVID-19 and Psychological Distress (N = 791)

				Knowledge Score				***Psychological Distress Score***			
Demographics		***f***	***%***	***M***	***SD***	***t***	***p***	***M***	***SD***	***t***	***p***
Gender						-1.37	1.7			-3.25	.001
	Men	218	27.6	8.93	1.82			17.88	7.68		
	Women	573	72.4	9.12	1.45			19.82	19.82		
Marital Status											
	Married	197	25.0	8.99	1.49						
	Un-Married	582	73.5	9.11	1.55						
	Divorced	12	1.5	8	2.73						
Occupation											
	Employed	331	41.7	9.25	1.56						
	Un-Employed	33	4.2	8.88	2.07						
	Student	378	47.9	8.95	1.51						
	Housewife	49	6.2	8.78	1.49						
Family System						-2.79	.005			-2.07	.04
	Joint	344	43.5	8.89	1.68			18.65	7.49		
	Nuclear	447	56.5	9.20	1.46			19.78	7.59		
Living conditions											
	Owned house	640	80.9	9.08	1.58						
	Rented	151	19.1	8.97	1.49						

Table 1 shows prevalence of knowledge and psychological distress among the study participants. Total 791 participants completed the survey questionnaires. The sample comprised of 218 male (27.6%) and 573 female (72.4%) participants, with an age-

range of 18-76 years, an average age was *M = 25.59, SD = 8.07.* *t*-test shows non-significant gender differences on knowledge of COVID-19, whereas female participants show significantly higher score on psychological distress than men. Most of the participants were unmarried (582, 73%), Married participants were (197, 25%), and divorced were (12, 15%). Due to incomparable number of participants on marital status, we could not run ANOVA and group differences were not assessed statistically. As profession concerns, most of the participants in the sample were students (378, 47.9%) and employed (331, 41.7%), and remaining participants were housewives and un-employed (49, 6.2% and 33, 4.2%) respectively. Again, due to incomparable number of participants on profession, we could not run ANOVA and group differences were not assessed. As family system concerns, participants living in a joint family system were (344, 43.5%) and participants from nuclear family system were (447, 56.5%). Participants living in nuclear family system scored significantly higher on knowledge of COVID-19 and psychological distress than the participants living in a joint family system. As living conditions are concerned, majority of the participants were living in their own houses (640, 80%) and participants living in rented houses were (151, 19.97%).

Table 2

Participants' Preferences in Attitude and Practices towards COVID-19 (N = 791)

Attitudes & Practices		***f***	**%**	***X²***
Attitudes towards COVID-19				
Success in Controlling COVID-19				514.97***
	Agree	564	71.30	
	Disagree	98	12.38	
	Don't Know	129	16.31	
Confidence of Winning over COVID-19				343.16***
	Yes	656	82.93	
	No	135	17.06	
Practices towards COVID-19				
Going to a Crowded Places				572.60***
	Yes	59	7.46	
	No	732	92.54	
Wearing a Mask				378.26***
	Yes	669	84.57	
	No	122	15.42	

Table 2 shows the attitude and preferred practices of people in Pakistan regarding COVID-19 pandemic situation. As attitude concerns, majority of participants agree that this situation will be successfully controlled, whereas 12 % marked on disagreed and 16.31% opted for don't know option. On confidence on winning over, 82. 93 % replied in 'Yes' and 17.06 % replied in 'NO'. Two classes of practice during COVID-19 situation were measured. In response to going to crowded places during this situation, 92.54% marked 'No' and only 7.46% marked on 'Yes'. In response to wearing mask, 84.57% marked on 'Yes' and only 15.42 % marked on 'No'

Table 3

Correlations between the Demographic Variables, KAP and Psychological Distress (N = 791)

		1	2	3	4	5	6	7	8	9	10
1	Gender	-	-.14**	.19**	-.03	.13**	-.02	**-.08***	.06	.05	**.12****
2	Age		-	-.09**	.10**	.23**	.03	-.03	.01	.05	**-.14****
3	Family System			-	.14**	.10**	-.05	-.02	.04	**.09****	**.07***
4	Living Conditions				-	.06	-.02	.02	.02	-.03	-.03
5	Years of Education					-	.02	-.04	.003	**.21****	-.04
6	Confidence of Winning over COVID-19						-	.03	**.12****	-.05	-.06
7	Going to Crowded Places							-	-.04	.03	.003
8	Wearing a Mask								-	**.09****	-.05
9	Knowledge									-	-.06
10	Psychological Distress										-

*$p < .05$, **$p < .01$

Table 3 shows that gender significantly negatively correlates with going to crowded places and significantly negatively correlates with psychological distress, which depicts that if gender is male there is more practice of going to crowded places, and if gender is female, it is more associated with psychological distress in the current pandemic situation. Age appears to be significantly negatively correlate with psychological distress, which shows that younger people scored higher on psychological distress. Family system significantly positively correlate with both knowledge and psychological distress, which shows that participants living in nuclear family system have higher knowledge and are more psychologically distressed. As relationships between knowledge, attitude, practice and psychological distress concern, no variable significantly correlate with psychological distress. Wearing mask show significantly positive correlation with knowledge.

Discussion

The study was carried out to assess the knowledge, attitude and practice of people of Pakistan during COVID-19 pandemic and their psychological distress. The results showed that majority of people in Pakistan were confident of winning over COVID-19 and believed that it would be successfully controlled (Table 2). It shows the optimistic attitude of people of Pakistan. As Pakistan is an Islamic state, the majority of participants were Muslim by religion and Muslims have strong belief that hoping for good is also an act of worship of Allah and pessimism is considered as sin. A believer remains persistent in difficult times, believing that no hardship lasts forever. The believers of Islam also recognize that there never is a problem without solution, as Allah says in Qur'an, "For indeed, with hardship, there is ease. Indeed, with hardship there is ease" (Qur'an 94:5-6). Furthermore, Islam also ensures its believers that no person is ever burdened beyond one's capacity: And we charge no soul except [what is within] its capacity (Qur'an 23:62). This is the reason that believers remain patient and confident about the future in difficult times instead of being overcome by the adversity of circumstances.

As the practice of people during this pandemic situation concerns, majority of people reported that they were not going to

crowded places and wore mask to safeguard themselves from virus (Table 2). It shows the awareness and preventive practices of the participants. As majority of the sample comprised university students, and studies have shown that education plays significant role in the preventive measures against any disease. The results are consistent with previous studies (e.g., Fung & Cartensen, 2006; Yeung & Fung, 2007) that reported more educated people to be more concerned about their personal hygiene and were likely to take more effective precautionary measures against SARs. A similar pattern is being observed in the case of COVID-19 in Pakistan. The results also showed significant positive correlation between year of education and knowledge of COVID-19 (Table 3), which is also supported by the above mentioned studies.

The results also showed significant correlation among confidence of winning a war against COVID-19, knowledge of COVID-19 and wearing mask (Table 3). It shows that people who scored higher on knowledge of COVID-19, they were more likely to wear mask, and those wore, they were more confident that they will win war against COVID-19. It shows that our knowledge and practice give us confidence to get control over the situation. It validates the relationship between cognition and behavior that cognitions lead to behavioral change (Kalodner, 2011). Humans are highly intelligent, and they use cognition in every part of their social lives. It validates the claim that individual's cognitions play a significant and primary role in the development and maintenance of emotional and behavioral responses to life situations, an individual's cognitions play a substantial and key role in the development and maintenance of emotional and behavioral responses to life situations (Beck, 1976; Beck et al., 1985). Rosenberg and Hovland (1960) also supported the relationship between cognitive and behavioral components of attitude.

The study also assessed group differences on the bases of demographic variables and relationships among demographic and study variables. Results revealed that people living in nuclear families scored significantly higher on knowledge of COVID-19 as compared to those living in joint families (Table 1). It shows that people not necessarily enhance their knowledge by discussions and knowledge sharing within the family but they definitely have some other sources like social media and electronic media to enrich their knowledge. As people who live in joint families they remain busy within the family affairs, but those who live separate, have more time to socialize outside their homes and use more social media sites and programs. It might be the reason that people living in nuclear families scored higher on knowledge of COVID-19.

As the role of demographic variables in psychological distress during COVID-19 lockdown concerns, significant differences on psychological distress appeared between men and women and people living in nuclear and joint family systems (Table 2), and gender, family system and age also showed significant correlations with psychological distress (Table 3). Women scored significantly higher than men on psychological distress. This result is in line with the studies by (Matud et al., 2015; Moghanibashi-Mansourieh, 2020) that psychological distress is more prevalent in women and identified a majority of the women reported a moderate to severe psychological impact of the pandemic. This finding is consistent with the research showing that women are more likely to respond adversely and report a higher prevalence of psychological problems during outbreaks (Wang et al., 2003) and other natural disasters (Ehring et al., 2011; Mak et al., 2010; Warheit et al., 1996; Warsini et al.,

2014). The findings of the present research also need to be interpreted in relation to women being at a higher risk and showing higher global prevalence rates of depression in comparison to their male-counterparts (Albert, 2015; Karger, 2014). Due to this natural pattern of being more susceptible to depression, the results of the present study warrant the need of immediate psychological support interventions for female population during pandemic situation. Men are biologically stronger and socially more daring than women and they bear stressful situation with courage.

The results also showed that people living in nuclear families scored higher on psychological stress than those who live in joint family system. People living in joint family system have more opportunity to receive social support and social support has been reported as one of the stress modifiers. Social support significantly correlates with stress management (Baqutayan, 2011). In the joint family system, which contained multiple units, the members mutually share their blisses and worries which mitigate their distresses and frustrations and prevent them from going into depression. Results are also in line with Vachaspati (2017) that women living in nuclear families perceived more stress in comparison to those living in joint families.

The results also revealed that psychological distress associated with COVID-19 decreased with increasing age (Table 3). This negative association between age and distress is supported by various studies conducted in the past to assess the relationship between age and psychological distress due to diseases (Jones et al., 2010; Lo et al., 2010; Mazanec et al., 2010). However, the psychological effects of the disease have not been documented effectively around the world (Wang et al., 2020).

The results of the study have implications for health care professionals and psychological counselors regarding relationships of attitude, knowledge and practice, and support the cognitive behavior theories that our cognition determine our attitude and behavior and vice versa. So, if we want to improve the practice of people during COVID- 19 pandemic, we need to work on the enhancement of their disease related knowledge and their attitude, so that people adopt precautionary behavior to prevent Corona disease. Women and people of younger age appeared to be more prone to psychological distress during this pandemic situation, so this vulnerable segment of population should be addressed while designing counseling program for pandemic situation.

The study has certain limitations that restrict the generalizability of our results. Due to pandemic situation, sample could not be approached personally and data were collected via online survey through personal contacts, so representativeness of the sample of all parts of the country was compromised and sample distribution on many demographic variables (marital status, occupation, and living conditions) was not comparable, so we could not run analysis on these variables. The sample comprised of well-educated people, we could not approach uneducated people and people with lower education and living in remote and rural areas, so we should be cognizant of these limitations while generalizing the results. Majority of the participants did not reveal their income, so we could not include socio-economic level in the analysis. Future studies should be designed that qualitatively explore the positive and negative experiences of people in Pakistan during COVID-19 pandemic lockdown to construct the phenomenology of COVID-19 pandemic in the indigenous perspective of Pakistan.

On the basis of our study, we conclude that until such time that any solution to the problem emerges throughout the world, in the

face of no existing medicine/ remedy, we need to focus on prevention and control methods. To this end, creating awareness of the disease and its effects on preventive attitude and practices on the people around the globe is critically important. Thus, the significance of producing awareness of the disease and its complications cannot be underrated, particularly in resource-limited conditions in a country like Pakistan.

We need to adopt strategic design of health promotion regarding COVID-19 for a successful health program. To safeguard health of people in a long-term and significant way, it is critical to initiate health promotion strategies that are mutually designed, indigenously modified, implemented on multiple levels, and carefully appraised. Strategic communication does not characterize by monologue between the therapist and patient, but we need to extend health awareness dialogue by utilizing multichannel integration, addressing all segments of population, and evidence-based awareness and psychological intervention programs, and the use of print and electronic media, and social networks.

Education has proved as a strategy that correlate with incidence of awareness and preventive measure. On the basis of this fact, we can assume that health education to illiterate people will help to make people aware of the fact that we can better prevent the disease if we are not in a position to cure it. Education will help the people to learn skills and competencies of self-management during this pandemic situation.

Contribution of Authors

Ayesha Abdul Khaliq: Conceptualization, Investigation, Data Curation, Writing-Original Draft

Shahida Batool: Conceptualization, Methodology, Writing – Reviewing and Editing

Sadaf Saleem: Formal Analysis, Writing-Original Draft

Conflict of Interest

The authors declared no conflict of interest.

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