

Community Perception of COVID-19 in Sharkia Governorate, Egypt

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Abstract

Background: Corona Virus (COVID-19) is a global threat declared by world Health Organization as a global pandemic on March 11, 2020. The rapid expansion throughout the world has forced all countries to confine to compulsory regulations to break the chain of infection. **Aim of the study:** The current study aimed to investigate community perception about covid-19 among families in Sharkia governorate, Egypt. **Design:** A cross- sectional descriptive research design was used to conduct this study. **Setting:** The present study enrolled families dwelling in 13 districts out of the 17 districts in Sharkia Governorate. **Sample:** In total 1288 respondent (322 family) were randomly enrolled. **Tools:** Two tools were used they are; (1) Socio-demographic characteristics, (2) Interview questionnaire developed by the researchers about community knowledge, attitude, practice and social relations during COVID-19 pandemic. **Results:** Results discloses that 50.3% had satisfactory knowledge, 59%, had positive attitude towards management of COVID-19, 55.2% had adequate practice during the first wave compared to 70.7% in the second wave. Meanwhile, 71.7% participants favored social distancing as a precautionary measure. Moreover, COVID-19 had tiny effect on relations among family members compared to other relations. **Conclusion:** The highest percentage of participants were knowledgeable, had positive attitude, adequate practice, and favored social distancing as a precautionary measure against COVID-19. Moreover, being female indicates better knowledge and practice. Whereas being from urban area means favoring social distancing behavior. However, being belonged to higher social class stands for better knowledge and practice of precautionary measures specially during first wave of COVID-19. **Recommendations:** Social media platforms should be used as the main channel to communicate sound health messages and build positive attitude toward health issues. Using the directive approach towards compliance with precautionary measures in times of outbreaks or pandemics, where actions needed are clear cut.

Keywords: Community Perception, knowledge, attitude, practice, social relations, Corona Virus (COVID-19), Families, Sharkia Governorate and Egypt

I. Introduction

Emerging and reemerging pathogens are global challenges for public health (Zhu et al., 2020). It was the 30th of January 2020 when the World Health Organization's (WHO) Director General declared the new corona virus known as COVID-19 outbreak as a worldwide public health emergency of international concern. This pandemic continued to shine the light on the fragility of health systems globally, and it made known that even robust health systems can be rapidly overwhelmed and compromised (WHO, 2021).

The epidemic (COVID-19) get characterized by WHO as a pandemic on 11th March 2020. Previous pieces of evidence about severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), and Ebola showed that public knowledge, attitudes, and perceived

risks have a determining role in controlling epidemics (Honarvar et al., 2020). The presence of COVID-19 pandemic in low and middle income countries is raising concerns about the preparedness of its health systems, and misinformation that may hinder public health responses. Hereafter, understanding public perceptions and responses to COVID-19 is critical in planning and implementing effective pandemic responses (Lau et al., 2020).

Public awareness about dealing with highly infectious respiratory diseases plays a pivotal role in restricting the spread of infection especially in low and middle income countries, where health systems have at best instances moderate capacity to respond to outbreaks (Abdelhafiz et al., 2020).

The focus of primary measures adopted by countries regarding COVID-19 was on cities confinement, social isolation, and closure of

borders (physical distancing & quarantine). Meanwhile, the focus of the second measure was on self-protection behaviors among people, wearing gloves and masks, and hand washing (Taberner et al., 2020). Meanwhile, several strategies have been established to improve people's knowledge and practices concerning COVID-19 either nationally or locally in line with WHO guidelines. Amongst these strategies; the suspension of study in schools and universities, closing unnecessary businesses and public transportation, publishing some preventive protocols, and educating people through media and social media (Honarvar et al., 2020).

In the initial phases of the pandemic, implementation of strict social distance policies helped many countries limit the spread of COVID-19. Unfortunately, the number of COVID-19 cases continues to increase with relaxation of social distancing policies. So, social distancing may be needed in combination with other virus control measures for several years to manage the pandemic. Hereafter, understanding public attitude towards social distancing is crucial in the ongoing struggle against COVID-19 (An et al., 2021).

Numerous lessons were learnt from curbing COVID-19 outbreak, the importance of community engagement was one of them as it can possibly help in mitigating the present pandemic (Sengeh et al., 2020). Rendering to the (Knowledge, Attitude and Practice (KAP) theory, the society's state of understanding, habits and behaviors possess a noteworthy impact on willingness to consider behavioral improvement and adherence to preventive strategies (Salem et al., 2021).

Community health nurse employs knowledge from various fields to promote and protect population health, the subsequent are three core functions: assessment, policy development, and assurance. During assessment, Community health nurse regularly collect and analyze information on health conditions, risks, and resources within the community (Huy et al., 2018).

Community and Family Nurse's mission is to follow holistic approach to accompany people from cradle to death in developing their health potential, and promote different family, work, and social environments to facilitate development and

respond to the existing challenges (González et al., 2019). Community health nurse has essential tasks in managing Covid-19 through providing comprehensive services, utilization of technology, family nursing care, community empowerment, and multi-program and multi-sector collaborations (Akbar et al., 2022).

Significance of the study:

Sharkia governorate is the third most populous Egyptian governorate. It is a highly population dense governorate, where its population is more than 7million according to Central Agency for Public Mobilization and Statistics (CAPMAS, 2021). On the other hand, recently COVID-19 was ranked as a highly contagious disease. Hereafter, it was imperative to identify the community perception regarding it, especially it led to infection and death of millions around the world in a short time, and these numbers are proposed to increase especially with the emergence of the new strains of COVID-19. In this context and considering that the family is the building unit of the community, hence, it was of utmost importance to investigate community perception of covid-19 among families in Sharkia governorate, Egypt.

Aim of the study:

The current study aimed to investigate community perception of covid-19 among families in Sharkia governorate, Egypt.

Operational definition

Perception: is the way one think about or understand someone or something or notice something easily (The Britannica Dictionary).

Community: group of people living in the same place or having a particular characteristic or having certain attitudes and interests in common (Oxford Dictionary).

Community perception: is the knowledge, attitudes, and practice of community.

The study aim has been achieved through the following objectives: -

1. Assess community knowledge about COVID-19.
2. Determine community attitude toward COVID-19.

3. Estimate community practice of precautionary measures during COVID-19.
4. Explore social relations among community during COVID-19.
5. Examine correlates of community perception about COVID-19 in Sharkia governorate, Egypt.

Research questions:

1. What is the level of community knowledge about COVID-19?
2. What is the attitude of community toward COVID-19?
3. How the community practice precautionary measures during COVID-19?
4. How social relations were affected in community during COVID-19.
5. What are the correlates of community perception about COVID-19 in Sharkia governorate, Egypt.

II. Subjects and Methods

- 2.1. Research Design:** Cross sectional descriptive design was used.
- 2.2. Study Setting:** - The existing study signed up dwellers from 13 district out of the 17 districts in Sharkia governorate they were; Zagazig, Belbeis, Minya El-qamh, Hehya, Kafer Saqr, Faqous, Al-Hosenya, El Asher (10th of Ramadan), Diarb Negm, Abo Hammad, Abu Kabir, Awlad Saqar and Al-Ebrahemya.
- 2.3. Subjects:** - The study sample comprised of 322 family, (one student and three family members) which means 1288 citizen living in Sharkia governorate, according to the **following inclusion criteria**; both sexes; aged 10 years or more; willing to participate in the study and able to communicate.

Sampling technique: A systematic random sampling technique was used for selection of subjects, where nursing students were selected from a list by random starting point and with a fixed periodic interval.

Sample size calculation:

The sample size was calculated by software Epi-info package Assuming a prevalence of community awareness regarding corona virus disease of about 40 % (**Ahmad et al., 2020**) total population was (7.670.047),

level of confidence 95% and power of test were 80% and margin of error 2.5%. The sample size was 1288.

Sample size

The sample size determined according to the following equation;

$$n = \frac{N \times P(1-P)}{[N-1 \times (d^2 - z^2)] + P(1-P)} \quad (\text{Thompson, 2012})$$

The estimated sample sizes was:

n = sample size.

N: population size

Z: the value of standard normal distribution for type I error probability for the sided test and equals [confidence level at 95% (1.96)²].

p: probability (50%).

d: Error proportion (0.05)²

So, according to the calculations the sample size After adding 10% dropout, final sample size = 1288 subjects.

2.4. Tools for data collection: - two tools were used for collecting data of the present study they were;

Tool I: Demographic characteristics (Fahmy et al., 2015) , it was used to assess the demographic characteristic of the preschoolers, as it was used to collect data about age, sex, parents educational level, occupation, monthly income ...etc.

Scoring system: to determine the socio-economic class of the preschooler, score less than 40% was considered as a low social class, from 40% to less than 70% considered as a middle class, and score of 70% or more considered as a high social class.

Tool II: interview questionnaire prepared by the researchers guided by **World Health Organization (2020), Egyptian ministry of health (2021), Ahmad et al. (2020) and Naser et al. (2021)**. It composed of five parts:

Part 1: Knowledge about COVID-19

This part composed of 11 questions about individuals' source of knowledge, definition, mode of transmission, incubation period, high risk groups, signs and symptoms,

complications, and precautionary measures. These questions were either choose or complete.

Scoring: each correct answer scored as “one” point, while the wrong one scored as “Zero”. Score then converted to a reading grade level as $\geq 60\%$ considered “satisfactory”, and $<60\%$ considered “unsatisfactory”.

Part 2: Attitude toward COVID-19

This part included 11 questions about individuals’ fears about COVID-19, attitude toward following precautionary measures, and attitude towards dealing with others; 10 questions were on three-point Likert scale ranging from never (scored 2), to sometimes (scored 1) and usually (scored zero) and the last question was in the form of choose.

Scoring: participants responses were summed up and converted into percent, where $\geq 60\%$ considered “positive attitude”, and $<60\%$ considered “negative attitude” toward their ability to fight COVID-19.

Part 3: Practice of precautionary measures during COVID-19

This part covered 14 precautionary measures to determine individuals’ practice of it in the previous wave of COVID-19 (2nd) compared to the current wave (3rd). these questions were on three-point Likert scale extending from never (scored zero), to sometimes (scored 1) and usually (scored 2).

Scoring: participants responses were summed up and converted into percent, where $\geq 60\%$ considered “adequate practice”, and $<60\%$ considered “ inadequate practice” of precautionary measures.

Part 4: Social relations during COVID-19

This part comprised 14 questions about social distancing rules. The response answer options were either agree (scored 1) or disagree (scored zero). In addition to one question about COVID-19 effects on social relations with family, neighbors, friends, relatives and colleagues. The response answers were COVID-19 had no effect on social relations, positively affected or negatively affected. Besides a final question about participants’ future plan in case of continuity of COVID-19

pandemic as taking vaccine, following precautionary measures only or doing nothing.

Scoring: participants responses were summed up and converted into percent, where $\geq 60\%$ considered “favor social distancing”, and $<60\%$ considered “not favor social distancing” during COVID-19.

Part 5: Infection with COVID-19 and future-plan regarding it.

This part involved two open ended questions, one about being infected with COVID-19. And the other about participants’ future-plan for dealing with it.

2.5. Preparatory phase: With the purpose of being

acquainted with the research problem and develop the study tools, a review of the available past & current related literature and theoretical knowledge of various aspects of the study was done using available books, articles at periodicals or magazines, or internet.

2.6. Tools validity: The tools’ face and content validity was carried out by three staff members in community health nursing (two professors & one assistant professor), faculty of nursing, Zagazig University who reviewed the tools and confirmed its clarity, comprehensiveness, and relevance.

2.7. Tool reliability: Reliability of tools was assessed through estimating test-retest reliability and measuring their internal consistency which was assessed by calculating Cronbach alpha coefficients (0.741) for Knowledge, 0.640 for Attitude, 0.862 for Practice & 0.643 for Social relations scale).

2.8. Pilot study: A pilot study was carried out on 33 families which represented 132 subject (10%), with the intention of testing the questions for ambiguity and assessing the practicability and feasibility of the tools. It also helped in determination of the time needed for filling out the data collection tools. Those who shared in the pilot study were left out from the main study sample.

2.9. Fieldwork:

Immediately after granting permission to meet students in the nursing institute, the researchers set up a schedule for collecting data. The researchers then sought families' approval, after that, questionnaires were extensively explained to students to guide them filling it out from their families. The researchers typically started by introducing themselves, then explained the aim and nature of study and confirmed the confidentiality of information obtained. The students who accepted to spread copies of data collection tools to their families, took copies to three family members (according to the criteria). Each student filled out his/her copy immediately, and another time was specified to bring the copies of his/her family members. Students were allowed to seek their family members' approval for filling out the tools by phone call first. The time spent for filling out the forms ranged from 20-30 minutes. The field work of the existing study took place from the mid of April to the mid of May 2021, where no vaccines were yet manufactured.

2.10. Ethical Considerations: Participants (either students or their family members) acceptance for filling out the data collection tools was considered as permission and consent. They were notified that their personal data and responses would be confidential and used for the research purpose only.

2.11. Administrative Design: An official letter containing the aim of the study was issued for the director of technical nursing institute, Zagazig University to explain the nature and aim of study and seek her support for meeting students in appropriate time for data collection.

2.12. Statistical Design:

Data entry and statistical analysis were done using SPSS 20. Descriptive statistics in the form of frequencies and percentages were used for qualitative variables and mean and standard deviation and for quantitative variables. Qualitative categorical variables were compared using chi-square test. Spearman rank correlation was used for assessment of the inter-relationships among quantitative variables

and ranked ones. Statistical significance was considered at p -value <0.05 .

III. Results

The preset study enrolled 1288 citizens representing 322 families dwelling in Sharkia governorate, Egypt. As for age, the study subjects' mean age was 30.83 ± 14.61 and ranged between 17 and 76 year, both sexes were roughly equal and 78% of them belonged to middle social class.

Pertaining to total knowledge, attitude and practice of precautionary measures regarding COVID-19 among study subjects, **table 1** discloses that the most common source of knowledge about COVID-19, it was social media (79.3%) followed by radio/TV (54.4%). As for knowledge level, 50.3% had satisfactory knowledge, 59%, had positive attitude towards management of COVID-19. As to practice of precautionary measures, 55.2% of participants had adequate practice during the first wave compared to 70.7% in the second wave. Meanwhile, 71.7% participants favored social distancing as a precautionary measure.

As regards the effect of COVID-19 on social relations among the studied subjects, **table 2** determines that COVID-19 had tiny effect on relations among family members. Meanwhile, considerable negative effects were noticed at the level of social relations between neighbors (28.2%), relatives (29.7%), colleagues (29.2%) and friends (26.6%).

Considering being infected with COVID-19 till time of data collection (mid of May 2021), **table 3** clarifies that, 25.4% of subjects either get infected or family member or relative. Pertaining to study subjects' future-plan for dealing with corona virus, 48.7% of them will no longer commit to precautionary measures, either because they will get vaccine as soon as it gets manufactured (47.9%), being committed to protective measures or not destiny is just going to happen (14.4%), they know persons who were beholden to precautionary measures and get infected (11.1%) and following protective measures is expensive (9.5%).

Table 4 displays a statistically significant relation between study subjects' social distancing behavior and their total knowledge,

attitude and practice ($P<0.001$), where those who favored social distancing had satisfactory knowledge, positive attitude, and adequate practice of precautionary measures in both waves.

Table 5 represents Correlation matrix of knowledge, attitude, practice and social distancing. The table clarifies a statistically significant positive correlation between knowledge score and attitude, practice during first and second wave and social distancing ($P<0.01$). In addition to statistically significant positive correlation between attitude and practice during first and second wave and social distancing ($P<0.01$). As well, statistically significant positive correlation between social distancing and practice during first and second wave ($P<0.01$).

Table 6 displays Correlation matrix of knowledge, attitude, practice, social distancing and family personal characteristics. The table points to a statistically significant negative correlation between participants' sex and their knowledge ($P<0.01$) and their practice during second wave ($P<0.05$), where being females had better knowledge and practice. The same table also indicates a statistically significant positive correlation between residence and social distancing ($P<0.05$), where being from urban area had favoring social distancing behavior. Ultimately, the same table shows statistically significant positive correlation between participants' social class and their knowledge ($P<0.01$) and practice at first wave ($P<0.05$), where being belonged to higher social class stands for better knowledge and practice of precautionary measures specially during first wave of COVID-19.

Table 1: Total Knowledge, attitude and practice of precautionary measures regarding COVID-19 among study subjects (n=1288)

<i>Variable</i>	<i>No.</i>	<i>%</i>
Source of knowledge:		
▪ Radio / TV	701	54.4
▪ Social media	1022	79.3
▪ Family member	173	13.4
▪ Studying	237	18.4
Knowledge		
▪ Satisfactory knowledge	646	50.3
▪ Unsatisfactory knowledge	642	49.7
Attitude		
▪ Positive attitude	760	59.0
▪ Negative attitude	528	41.0
Practice (first wave)		
▪ Adequate	711	55.2
▪ Inadequate	577	44.8
Practice (second wave)		
▪ Adequate	911	70.7
▪ Inadequate	377	29.3
Social distancing		
▪ Favored	923	71.7
▪ Un favored	365	28.3

@not mutually exclusive

Table 2: Effect of COVID-19 on social relations among the studied subjects (n=1288)

<i>Social relations</i>	<i>Positive [Stronger]</i>		<i>Not affected</i>		<i>Negative [Weaker]</i>	
	No.	%	No.	%	No.	%
Between family member	575	44.6	625	48.5	88	6.8
Between neighbors	228	17.7	697	54.1	363	28.2
Between relatives	214	16.6	692	53.7	382	29.7
Between colleagues	231	17.9	681	52.9	376	29.2
Between friends	237	18.5	708	55.0	342	26.6

Table 3: Being infected and Future plan for dealing with COVID-19 among the studied subjects (n=1288)

<i>Items</i>	<i>No.</i>	<i>%</i>
Infected with COVID-19:		
▪ No	1141	88.6
▪ Get infected and recovered	75	5.8
▪ Family member got infected	105	8.2
▪ Friend or relative got infected	144	11.2
▪ The whole family got infected	22	1.7
Future plan for dealing with COVID-19:		
I will keep on following protective measures	661	51.3
No need for following protective measures	627	48.7
Causes: @		
▪ I will get vaccine as soon as it get manufactured	617	47.9
▪ Following protective measures is expensive	123	9.5
▪ Whether I committed to protective measures or not, destiny is just going to happen	185	14.4
▪ I know persons who were obligated but they get infected	143	11.1

@ responses are not mutually exclusive

Table 4: Relation between social distancing of studied subjects and their total knowledge, attitude and practice (n=1288)

<i>Items</i>	<i>Total social distancing</i>				<i>X² test</i>	<i>p-value</i>
	Favored (n=923)		Not favored (n=365)			
	No.	%	No.	%		
Total knowledge						
Satisfactory knowledge	493	53.4	153	41.9	13.825	.000**
Un satisfactory knowledge	430	46.6	212	58.1		
Total attitude						
Positive attitude	593	64.2	167	45.8	36.983	.000**
Negative attitude	330	35.8	198	54.2		
Total practice during first wave						
Adequate	554	60.0	157	43.0	30.596	.000**
Inadequate	369	40.0	208	57.0		
Total practice during second wave						
Adequate	701	75.9	210	57.5	42.839	.000**
Inadequate	222	24.1	155	42.5		

(*) Statistically significant at $p < 0.001$

Table 5: Correlation matrix of knowledge, attitude, practice and social distancing among the studied subjects

Scores	Total mean score			
	Knowledge	Attitude	Practice during first wave	Practice during second wave
Knowledge				
Attitude	.191**			
Practice during first wave	.239**	.270**		
Practice during second wave	.202**	.431**	.432**	
Social distancing	.183**	.185**	.209**	.268**

R: Pearson's correlation coefficient

(**) statistically significant at $p < 0.01$

Table 6: Correlation matrix of knowledge, attitude, practice, social distancing and family personal characteristics under study.

Personal Characteristics	Spearman's rank correlation coefficient				
	Knowledge	Attitude	Practice during first wave	Practice during second wave	Social distancing
Age	-.040	-.006	-.008	-.024	.017
sex	-.078**	-.050	-.012	-.062*	-.028
Residence	-.018	-.019	-.040	-.056	.066*
Social class	.130**	.047	.070*	.022	-.049

(*) Statistically significant at $p < 0.05$

(**) statistically significant at $p < 0.01$

III. Discussion

COVID-19 is efficiently transmitted in general population via respiratory droplets of symptomatic and asymptomatic carriers. Consequently, most countries have implemented preventative measures, such as social distancing paired with other protective behaviors such as mask wearing, hand washing, avoiding large gatherings, and substituting physical social events with virtual forms of communication (Prachthauser et al., 2020).

As for the most common source of knowledge about COVID-19, the current study results brought out that highest percentage of study subjects got their knowledge from social media followed by radio/TV. This result might be attributed to the availability, accessibility, and diversity to social media apps, and its simple content which can reach to all people regardless of their educational level. A contrary result was reported by Lau et al. (2020) in Philippine, who found that traditional media sources such as television (85.5%) and radio (56.1%) were reported as the main sources of information about the virus. Also, Sengeh et al. (2020) in Sierra Leone clarified that radio (73%) was the most used source for COVID-19 information, followed by social media (39%). As well, Ahmad et al.

(2020) in Afghanistan stated that mass media (47%), social media (45%), family sources (36%), and community elders (29%) reported as source of information related to COVID 19.

Pertaining to participants' knowledge and attitude towards COVID-19, the existing study results disclosed that more than half had satisfactory knowledge and positive attitude towards management of COVID-19. This result might be attributed to Egypt state strategy in dealing with the pandemic though equipping the people with sound scientific information through diverse means of communication ranging from TV channels, to Radio, social media, transportation stations, printed media, ...etc. in the same stream Ahmad et al. (2020) in Afghanistan found that, Only 40% of the respondents were aware of the Corona Virus disease. Also, Abdelhafiz et al. (2020) in Egypt clarified that participants had a good knowledge about the disease and a positive attitude towards protective measures

As regards participants' practice of precautionary measures during COVID-19, more than half of the study subjects had adequate practice during the first wave compared to more than two third of them in the second wave. This result reflects the people's keenness to follow

preventive measures to avoid being infected with Corona virus. In the same stream, the results of study conducted in the Kingdom of Saudi Arabia by **Al-Hanawi et al. (2020)** indicated good practices. As well, **Honarvar et al. (2020)** in Iran stated that knowledge and practices about COVID-19 were roughly appropriate.

As for social relations among people during corona time, COVID-19 had tiny effect on relations among family members compared to other relations. Whereas less than one third of participants reported that, social relations become weaker between neighbors, relatives, colleagues and friends. This might be attributed to suspension of study and work in diverse sectors because of corona pandemic, which in turn spared a lot of time to families to spend all the time together and retain the relations lost in the crowd of life. In the same vein, **Naser et al. (2021)** in Jordan found that around 31.6% of the participants reported that their social relationships were affected to a high degree by the COVID-19 pandemic, where 30.3% had negative impact on attitudes towards social relationships and communication with others.

Considering social distancing, more than two third of participants favored social distancing as a precautionary measure. This result might uncover fears and the panic state encountered by people at that time that lead to favoring distancing from others. In the same context, **Lau et al. (2020)** in Philippine clarified that social distancing and avoiding crowds were only identified by 32.4% and 40.6%, respectively.

Pertaining to study subjects' future plan for dealing with corona virus, 48.7% of them will no longer commit to precautionary measures. Compatibly, **Shahin and Hussien (2020)** carried out study among a sample drawn from the general populations of Saudi Arabia, Egypt, and Jordan, and found that. the population sample from Egypt (13%) had significantly lower intention to comply with COVID-19 precautionary measures than the other populations.

By asking the current study participants about the reasons behind not complying with precautionary measures they clarified that; either they will get vaccine as soon as it gets manufactured (47.9%), destiny is just going to happen (14.4%), they know persons who were beholden to precautionary measures and get

infected (11.1%) and following protective measures is expensive (9.5%). Congruently, **Shahin and Hussien (2020)** When asked their participants why they may not be willing to undertake preventive measures, almost two-fifths of participant reported that the situation does not apply to them, and slightly more than one-quarter answered that the measures require too much effort (cost, time, etc.) and that the people in their environment would also not perform these measures.

The present study results indicated that being female means better knowledge and practice of precautionary measures during COVID-19 this result might be due to girls' and women's commitment and obligation to safeguard the health of the family members. Congruently, the results of the study conducted by **Al-Hanawi et al. (2020)** in the Kingdom of Saudi Arabia showed that men have less knowledge. Conversely, **Sengeh et al. (2020)** in Sierra Leone pointed to Significant gender differences in knowledge and taking preventive actions indicating that outbreak communication should specifically target women.

The existing study results pointed to a statistically significant positive correlation between knowledge score and attitude and practice. This might be due to that, being equipped with sound knowledge, trigger positive attitude and hence adopting healthy practices. Similarly, **Sengeh et al. (2020)** in Sierra Leone, referred to strong association between increased knowledge and important preventive practices. Also, **Lau et al. (2020)** in Philippine reported that greater number of preventive measures were taken by those with more knowledge of potential transmission routes. As well, **Singh et al. (2022)** in India highlighted a significant association of knowledge and practice score with positive attitude outcome.

As the current study clarified, being female indicates better knowledge and practice. in the same stream, **Baig et al. (2020)** in Kingdom of Saudi Arabia clarified that, Male gender was predictor of low practice scores.

Conclusion

The highest percentage of participants were knowledgeable, had positive attitude,

adequate practice, and favored social distancing as a precautionary measure against COVID-19. Moreover, being female indicates better knowledge and practice. Whereas being from urban area means favoring social distancing behavior. As time passes, community perceive COVID as less ferocious. However, being belonged to higher social class stands for better knowledge and practice of precautionary measures specially during first wave of COVID-19.

Recommendations

Revolving around the existing study findings it is recommended that social media platforms should be used as the main channel to communicate sound health messages and build positive attitude toward health issues. Using the directive approach towards compliance with precautionary measures in times of outbreaks or pandemics, where actions needed are clear cut.

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