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Original Article

Knowledge, attitude, and practice towards COVID-19, among an elderly population in Sri Lanka: A cross-sectional study

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Abstract

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Background: Elderly people are at high risk for adverse effects from SARS-CoV-2 infection. Therefore, to prevent and lower the fatality rate of COVID-19 among elderly people, determining the knowledge, attitude and practice of the elderly population towards COVID-19 is needed.

Objectives: This study aimed to investigate the knowledge, attitude and practice (KAP) towards COVID-19, among an elderly population in Western province, Sri Lanka.

Results: A descriptive cross-sectional study was conducted among 414 elderly persons in the Western province, Sri Lanka. Data were collected using a pre-tested, self-administered/interview-based questionnaire. SPSS version 26 was used for the analysis of the study. Among the total participants (n=414), most respondents (80.68%) had good knowledge regarding COVID-19. Most of the participants (76.81%) were in good attitude category regarding COVID-19. Regarding practices towards COVID-19, the majority of participants (87.19%) had a good practice level. Total knowledge level was significantly associated with attitude level $p < 0.001$ and practice level $p < 0.001$ towards COVID-19.

Conclusion: Imparting knowledge, increasing good behavioral change, and strengthening preventive practices towards COVID-19 prevention is the best solution for pandemic control.

Keywords: COVID-19, Knowledge, Attitude, Practice, Elderly population

Introduction

The rapidly evolving outbreak of the Coronavirus Disease (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has proven to be a matter of utmost concern amongst global authorities, as countries worldwide struggle to combat this pandemic (Ladiwala et al., 2021). COVID-19 is an emerging respiratory illness that was first detected in Wuhan, China on 12th December 2019 (World Health Organization, 2020).

Everyone is susceptible to exposure and infection by coronavirus disease-19 (COVID-19), but evidence to date suggests that older people (people over 60 years old) and those with underlying medical conditions such as cardiovascular disease, diabetes, chronic respiratory disease, and cancer are the two groups at a higher risk of getting severe COVID-19 disease (Adhena & Hidru, 2020).

Common signs of COVID-19 infection include respiratory symptoms, fever, fatigue, myalgia, sore throat, nasal congestion, cough, dyspnea, nausea, vomiting, and/or diarrhea (Stawicki et al., 2020). Despite the fact that most COVID-19 infections are self-limiting, some patients have presented with different complications including organ damage, shock, lung parenchymal infections, acute respiratory distress syndrome (ARDS), venous thromboembolism, and pulmonary embolism (Bekele et al., 2020).

The virus is primarily transmitted via respiratory droplets and close contact with an infected person (Rothan & Byrareddy, 2020). SARS-CoV-2 can remain active for hours and even days on surfaces, therefore, touching infected surfaces can lead to the spread of infection (Sallam et al., 2020).

Although the U.S. food and drug administration (FDA) issued (SARS-CoV-2) mRNA vaccines that are currently available through Emergency Use Authorizations (EUAs), controlling infectious sources and interrupting transmission

routes of the virus are regarded as reliable ways to control the spread of the disease (Krause & Gruber, 2020). Most importantly, the awareness, understanding, and adherence of the public to preventive measures recommended by health authorities are the key to pandemic control.

Many preventive and control methods were adopted in Sri Lanka such as the closure of public places (including schools, universities), imposing quarantine measures and administering newly developed vaccines throughout the population. Further Sri Lankan government imposed strict lock down rules and the public was informed to stay indoors and work from home. Despite implementing different preventive measures, a second wave started from a cluster of cases in October 2020.

Although most studies in the world target health professionals and the general population, studies are sparse in relation to high-risk groups (the elderly population). Thus, this study aimed to determine the Knowledge, Attitude and Practice (KAP) towards COVID-19 and associated factors of poor knowledge and practice among elderly people in Western province Sri Lanka.

Methodology

A descriptive cross-sectional study was conducted among 414 elderly persons (≥ 60 years old) in the Western province, Sri Lanka. The participants were voluntarily recruited through convenient sampling. Inclusion criteria were those who volunteered and in elderly ≥ 60 years living in Western province Sri Lanka. A single population proportion formula (Lachenbruch et al., 1991), $(n = Z^2 p (1-p)/d^2)$ was used to calculate the sample size. Since there was no published data that showed the knowledge, attitude, and practice toward COVID-19 among elderly people in Sri Lanka, 50% of prevalence ($p = 0.5$) was used to get the maximum sample size by considering 95% confidence interval ($Z = 1.96$), marginal error (d) of 5% (0.05) and 5% non-response rate.

The data were collected through a pre-tested

questionnaire designed by the researchers using scientific literature. (Adhena & Hidru, 2020) (Zhong et al., 2020) (Yang et al., 2020) The questions/statements were modified to suit the objectives of the study. The questionnaire contained six sections and a total of 42 items. Section 1 was purpose of this research and informed consent of the participant. Second section was socio-demographic data which contained 9 questions. Third section was knowledge towards COVID-19 and it contained 10 structured questions on knowledge towards covid-19. The questions precisely covered the respondents' knowledge regarding the virus causing the disease, modes of transmission of the virus, main clinical symptoms of COVID-19, high risk population, preventive measures etc. Each correct knowledge item reported was awarded a score of 20 point. Incorrect knowledge was awarded a 0 score. For Likert scale, if "strongly agree" or "agree" was the correct answer, that was scored as 20 points while "Neutral/No idea" scored 10 points. If "disagree" and "strongly disagree" was scored as 0 point or otherwise reverse. For total knowledge score calculation, a score of less than 6 was considered as a low/poor level of knowledge, 7-13 denoted an average/satisfactory level, and more than 14 was considered good.

Forth section was attitudes towards COVID-19 and contained queries relating to attitudes. This part of the section assessed psychological state concerning views, opinion, morals, and characters to act in particular. It contained 5 structured queries with answers: "strongly agree", "agree", "disagree" "strongly disagree", and "no idea" and answers like "yes", "NO", "don't know" and "sometimes". Each correct attitude reported was awarded scores according to the reliability of the answer. Minimum score was "0" and maximum score was "20". A score of less than 6 was considered as poor attitude. Between 7-13 belonged to the average category. More than 14 was considered as good attitudes.

Section 5 of the questionnaire measured practice related to COVID-19 in the elderly population. It contained 12 structured queries with answers:

"yes", "no" and "sometimes" and answers with "always", "sometimes", "rarely", "never". Each correct practice reported was awarded scores according to the reliability of the answer. The minimum score was 0 and maximum score was 20. The answers with "always" were allocated 20 points, "sometimes" 10 points, "rarely" 5 points and "never" 0 point or wise versa. A score of less than 10 was considered as poor practice. Higher than 11 was considered as good practice.

Section 6 of the questionnaire assessed the difficulties and challenges that the elderly population faced during the Covid-19 pandemic. This section contains 6 structured questions consisting with yes/no type answers and agree/strongly agree/no idea/ disagree/strongly disagree answers. The minimum score was 0 and maximum score was 5. A score of less than 15 was considered to have less difficulties/challenges, a score of 15 - 22 was considered to have average difficulties and a score of higher than 22 was considered to have more difficulties. To ensure the quality and reliability of the questionnaire, the pre-test was conducted among 20 elderly people who are ≥ 60 years which are not included in the formal investigation. The finalized questionnaire was given to the participants of the study.

The demographic characteristics of the study sample and detailed results on KAP were expressed as percentages. Coding, entering and analysis of collected data was done in IBM Statistical Package for Social Sciences (SPSS) version 26. The KAP scores regarding COVID-19 among the elderly participants were expressed as mean and standard deviation (SD). Chi square test was used to assess the association between demographic characteristics and KAP score towards COVID-19. Statistical significance was defined as $p < 0.05$. Ethical approval was obtained from the ERC of KIU (KIU_ERC_21_91).

Results

Socio-demographic characteristics of the study population

Among the total participants (n=414), there were 211 (51%) females and 203 (49%) males. The majority (n=232) of the participants were in the 60-69 age group and least (n=40) of the participants were in the age group over 80. Of the study participants, most of the participants (n=268) were suffering from a chronic disease conditions like diabetes, hypertension or a cardiovascular disease. Most of the participants (n=204) had an educational level up to secondary school and most of the participants (n=228) had an income over Rs. 20,000 per month. Among the study participants 34.1% were from Colombo district, 31.6% from Gampaha district while 34.3% were from Kalutara district.

Knowledge towards COVID-19 among the study population

The results reflect that majority of respondents n=334 (80.68%) had a good knowledge regarding COVID-19, 71 (17.15 %) of respondents had an average knowledge and the least number of respondents n=9 (2.17%) had a poor knowledge. Mean knowledge score was 15.46 ± 3.124 (standard deviation). When considering about the gender of the participants, mean knowledge score among males was 15.19 ± 3.524 and that among females was 15.73 ± 2.665 .

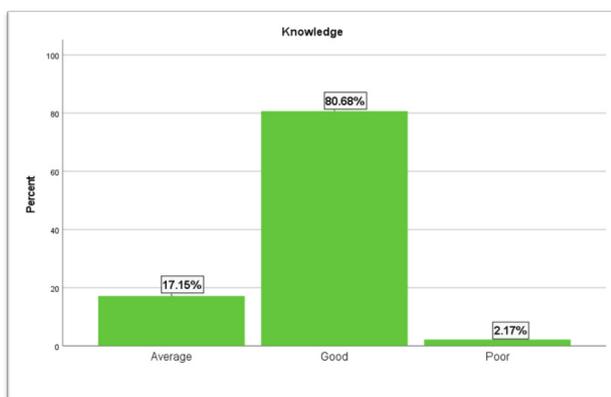


Figure 1 - Distribution of total knowledge level among participants

Pearson Chi – square tests were done between total knowledge level and socio-demographic data. The analysis was conducted using 0.05 significant levels. Based on the results, the following can be stated.

There was a significant association between total knowledge level and some socio-demographic factors; educational level ($p < 0.001$), monthly income status ($p < 0.001$), and sources of information on COVID 19 like television programs and news releases ($p < 0.001$), friends/relatives ($p = 0.002$), government announcements ($p = 0.001$), radio ($p = 0.002$).

No significant association was found between total knowledge level and most of the participants' socio-demographic factors such as age, gender, place of current residence, occupational status, presence or absence of chronic diseases, district of residence.

On assessment of knowledge of study participants, more than half of participants 56.8% (n=235) knew about the COVID-19 causing virus. Majority of the participants knew high grade fever (87.4%), dry cough (88.4%) and shortness of breath (92.3%) as main clinical symptoms of COVID 19 while 60.4% (n=250) of the participants knew that people with COVID-19 also show no symptoms can infect the virus to others. As high-risk population of COVID-19 for the severe outcome, 38.9% (n=161) of participants said children, 75.8% (n=314) said pregnant women, 83.3% (n=345) said elderly (over 60years) and 80.9% (n=335) said people with underlying medical conditions. As modes of transmission for COVID-19, 334 of participants said respiratory droplets (80.7%), 368 participants said direct transmission (88.9%), 323 of participants said indirect transmission (78.0%) and 345 of participants said airborne transmission (83.3%). Of the participants, 80.7% (n=334) knew that polymerase chain reaction (PCR) can be used to diagnose COVID-19. As per preventive measures for COVID-19 infection, 85.3% (n=353) of participants knew that handwashing with soap & water

prevented infection, 87.0% (n=360) knew about importance of social distancing, 90.1% (n=373) knew about isolation of suspected & confirmed cases and 90.6% (n=375) knew about wearing of personal protective equipment like face masks for prevention of infection. Of the study participants 306 (73.9%) agreed that currently, there is no effective drug for COVID-19, but the treatment of early symptoms and intensive care can help people with COVID-19 to recover. Of the participants 72.9% (n=302) agreed that the period between exposure to the infection and appearance of symptoms of COVID-19 is 2-14 days.

Attitudes towards COVID-19 among the study population

Results reflect that majority of respondents 318 (76.81%) had a good attitude regarding COVID-19 and 76 (18.36 %) of respondents had an average attitude while a small number of respondents 20 (4.83%) had a poor attitude. Mean attitude score is 15.66 ± 4.00 (Standard deviation). When considering the gender of the participants, mean attitude score among males was 15.28 ± 4.36 and that among females was 16.03 ± 3.60 .

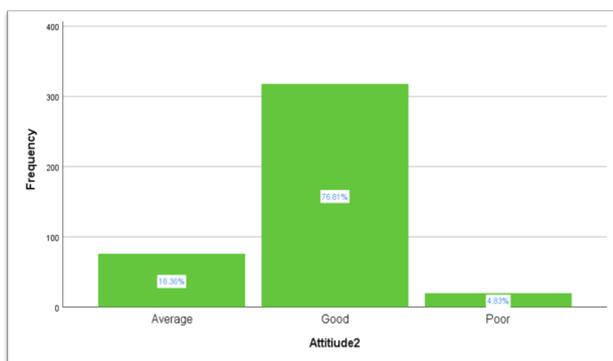


Figure 2 - Distribution of total attitude level among participants

The total knowledge level was significantly associated with the attitude level ($p < 0.001$). There was a significant association between total attitude level and some socio-demographic factors such as educational level ($p < 0.001$),

occupational status ($p=0.028$), presence of chronic disease ($p=0.017$), income status ($p=0.022$), and sources of information like television and news releases ($p=0.016$).

No significant association was found between total attitude level and socio-demographic factors such as age, gender, and place of current residence.

Vast majority of participants (84.5%) agreed with “Imparting the knowledge and information regarding COVID – 19 infection and its preventive measures mainly among the elderly population was important for the community”. Further, 78% of the participants were seen to “To comply with any local restrictions on travel, movement or large gatherings is one of the important ways of prevention from COVID – 19”. Majority of participants (79%) agreed that “People with fever, cough, and difficulty in breathing should seek medical attention”. Majority of participants (82.4%) also agreed with the statement “Those who are elderly or chronically ill are more likely to be severely affected” by covid – 19. While 38.9% of participants agreed with the statement “COVID – 19 vaccinations would completely protect us from getting the disease” interestingly 37.4% of the participants disagreed with this statement. Also 23.7% of participants had no idea regarding the statement.

Practices towards COVID-19 among the study population

The results indicate that the majority of respondents 361 (87.2%) have been following good practices towards Covid-19 and 53 (12.8%) of them had poor practices. Mean practice score was 14.88 ± 3.281 (Standard deviation). When considering the gender of the participants, mean practice score among males was 14.12 ± 3.211

and that among females was 15.68 ± 3.138 .

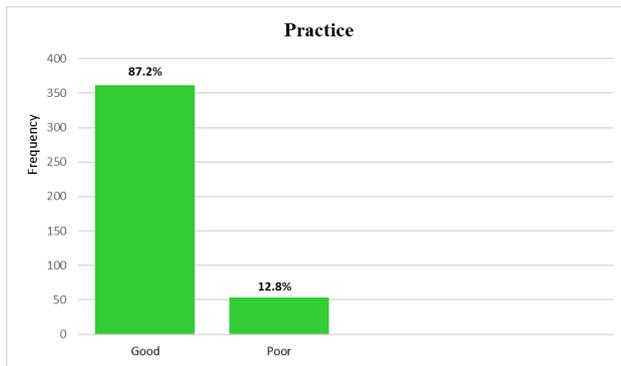


Figure 3 – Frequency distribution of total practice level among participants

Total knowledge level of COVID-19 is significantly associated with the practices of all 414 participants since its p value is less than 0.05. There was a significant association between total practice level and some socio-demographic factors, such as educational level ($p < 0.001$), occupational status ($p = 0.021$), present chronic disease condition ($p < 0.001$), district ($p < 0.001$) etc. Knowledge level of COVID-19 is significantly associated with the total practice level ($p < 0.05$).

No significant association was found between total practice level and most of the participants' socio-demographic factors such as gender, age, place of current residence, income status. The most significant effects on the total practices towards COVID-19 were due to educational level, presence of chronic diseases and the living district.

Majority of the participants 359 (86.7%) had worn a mask when they were in a crowded place. Only 45.4% ($n = 188$) of them had always implemented physical distancing when they were in the crowd. Further, 169 (40.8%) of the participants had always used hand sanitizer when they were in crowded places and 41.1% ($n = 170$) of them had sometimes used the sanitizer in crowded places.

More than half of the participants 229 (55.3%) had washed their hands with soap after going to a crowded place, while getting back home, before meals, or contacting dirty and contaminated items. Only 136 (32.9%) of the participants always had immediately changed their clothes before entering the house and having contact with family members. Interestingly 189 (45.7%) of them sometimes had done this practice. Majority of the participants 270 (65.2%) had eaten vegetables and fruits without washing. Most of the participants 296 (71.5%) had covered their nose and mouth while coughing or sneezing. More than 85% of the participants paid close attention to government and community reports on the epidemic and the living trajectory of infected people. Of the participants, 121 (29.2%) of them avoided going to crowded places and avoided taking public transportation during the pandemic. More than 90% of the participants drank immunity boosting home remedies like coriander and had steam inhalation for at least 15 minutes at home. More than half of the participants 60.6% never smoked and 6.5% of the participants had smoked daily. More than 50% of them had never consumed alcohol and only 5.3% of the participants consumed alcohol daily.

Discussion

In Sri Lanka, reported data on KAP towards COVID-19 is limited, and this study was conducted to examine the knowledge, attitudes and practices towards COVID-19 among an elderly population. Though transmission of COVID-19 due to unsafe practices has been a public health issue, the epidemiological studies on KAP towards COVID-19 are inadequate. In this study, we tried to evaluate and report these important aspects of COVID-19 among elderly population (high risk group) in Sri Lanka.

The results reflected in this survey indicates that majority of the study participants (80.68%) have a good knowledge regarding COVID-19. This contrasted with the results of similar studies

done in other countries like Ethiopia, which was a very similar study conducted among high-risk group (an aging population) in Tigray, Ethiopia, and that showed considerably poor knowledge levels (37.7%) among the participants (Adhena & Hidru, 2020). However, the results of the current study were congruent to the findings reported by previous studies conducted in Pakistan where it exhibited 93.3% (good) of adequate knowledge on COVID-19 (Ladiwala et al., 2021) and studies conducted in China where it exhibited a higher risk perception and a good knowledge of COVID-19 (Ding et al., 2020). Further, the results of this study were congruent to another KAP among Chinese residents where it showed the total scoring rate for knowledge as 85.2% (Yang et al., 2021).

The good knowledge level seen in this study is higher than the other study conducted in Ethiopia, (Adhena & Hidru, 2020,). The reason for this discrepancy might be due to a difference in the socioeconomic status of study participants, availability of information sources and variation in time of data collection period.

The majority of target study population in this study had access to electricity and internet. As a result, they had unlimited access to COVID-19-related updates and preventive measures posted online by the official government health authorities and different media that are shown to have a positive effect for improving knowledge, behavioral change and developing a positive attitude. Similarly, in studies done in China and Pakistan the data were collected during the main phase of the outbreak when most of their populations were exposed to a lot of information about COVID-19 that could lead to good knowledge towards COVID-19 (Ding et al., 2020, Ladiwala et al., 2021).

This survey results indicate that majority of respondents (76.81%) have a good attitude regarding COVID-19 while 18.36% had average level of attitude and only 4.83% had poor attitude level. Pakistan conducted a similar large cross-sectional survey in 2020 and found the majority

(85.6%, n= 1027) of the Pakistani residents have a good attitude of COVID-19 (Ladiwala et al., 2021). However, a KAP inquiry held among frontline healthcare workers working in different hospitals in another neighboring country, Nepal demonstrated only 54.7% of positive attitude (Tamang et al., 2020).

Although all age groups are at risk of getting COVID-19 disease, older people face significant risk of developing severe illness due to physiological changes that come with ageing and possible underlying health conditions (Bekele et al., 2020). Therefore, this susceptible age group should practice good behaviors (Bekele et al., 2020)

Similar to this study, several previous studies done with residents of China (Ghimire et al., 2020), frontline healthcare workers in Nepal, the adult population in Bangladesh, Jordanian adolescents, and another study on Chinese residents, found good practicing skills toward COVID-19 prevention strategies (Yang et al., 2020, Tamang et al., 2020, Hossain et al., 2020, Dardas et al., 2020 Zhong et al., 2020). Another study that had been done in 2020 in the United States and the United Kingdom (Geldsetzer, 2020) found moderate practice toward combating COVID-19 (Geldsetzer, 2020). In contrary a study done in high-risk age groups in Ethiopia and among Chronic Disease Patients in Northwest Ethiopia, indicated that participants had poor practice toward prevention of the disease (Adhena & Hidru, 2020, Akalu et al., 2020)

Conclusion

Imparting knowledge, increasing good behavioral change, and strengthening preventive practices towards COVID-19 prevention is the best solution for pandemic control. Further, interventions are required to overcome the difficulties that are faced by the elderly population during the pandemic.

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Conflicts of Interests

There are no conflicts of interest.

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