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KNOWLEDGE AND REPORTED PRACTICE OF ALCOHOL-BASED HAND SANITIZER USE AMONG THE ELDERLY DURING COVID -19 IN SELECTED DISTRICTS OF KERALA

Harsha Vijay*[1], Thanooja M.[2], Anjana K. Achari[3] and Amrutha Vijayan[4]

[1]Asst. Professor, Amrita College of Nursing, Amrita Viswa Vidyapeetham, Amrita Institute of Medical Science, Kochi, Kerala, Kerala, India.
[2]Lecturer, Amrita College of Nursing, Amrita Viswa Vidyapeetham, Amrita Institute of Medical Sciences, Kochi, Kerala, India.
[3]Fourth Year B.Sc. Nursing, Amrita College of Nursing, Amrita Vishwa Vidyapeetham, Amrita Institute of Medical Sciences, Kochi, Kerala, India.
[4]Fourth Year B.Sc. Nursing, Amrita College of Nursing, Amrita Vishwa Vidyapeetham, Amrita Institute of Medical Sciences, Kochi, Kerala, India.

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***Corresponding Author: Prof. Harsha Vijay**

Asst. Professor, Amrita College of Nursing, Amrita Viswa Vidyapeetham, Amrita Institute of Medical Science, Kochi, Kerala, Kerala, India.

ABSTRACT

Objective: To assess the knowledge and reported practice of alcohol-based hand sanitizer use among elderly population and to prepare information leaflet on the use of alcohol-based hand sanitizer. **Methods:** A quantitative study was conducted among elderly population above 65 years who were residing in selected districts of Kerala. Samples of 45 elders were selected using convenience sampling. Socio demographic data were collected followed by the assessment of reported practice using a checklist with 30 responses. The knowledge regarding the use of alcohol-based hand sanitizer were assessed using questionnaire with 21 questions. The data wereanalyzedusing Frequency distribution and percentage based on Socio-demographic variables by descriptive statistics and chi square test were used to find the association between knowledge and attitude regarding alcohol-based sanitizer use with selected socio-demographic variables. **Results:** Among 45 elders, 22 (48.9%) had average knowledge and 20 (44.4%) had good knowledge regarding the use of alcohol-based hand sanitizer. Majority (91.1%) of the elderlyexhibited ideal practice of alcohol-based sanitizer use. There is a statistically significant association between knowledge regarding alcohol-based sanitizer use with the age of the elderly (p=0.003) and economic status (p= 0.02). **Conclusion:** Present study suggests that knowledge regarding the use of alcohol-based hand sanitizer were average and good among elderly population. Most of the elderly were using alcohol-based hand sanitizer in the ideal way of using it, including the general aspects, steps of usage and movements of the use. The study also facilitated the researcher to recognize the role of sanitizers in the current pandemic situation which can be included into the day-to-day activities.

KEYWORDS: Covid-19, Alcohol Based hand sanitizer, Elderly, Knowledge, Reported practice.

INTRODUCTION

COVID 19 (novel corona virus) is an acute respiratory disorder characterized by dry cough, fever, pneumonia, body pain etc. The rate of mortality is high especially in vulnerable groups and immune-compromised patients.[1] On March 11 2020 it was declared as pandemic by WHO.[2] The severity of COVID 19 varies with age group and older adults are at highest risk.[3] The virus (2019-nCoV) spreads easily from one person to another. As there is no treatment to kill the virus, the only way to stop this pandemic isthrough precautions. COVID 19 transmission occurs between people through direct or indirect contact with mouth and nose secretions.

Globally, up to 7 December 2021, there have been 265,713,467 confirmed cases of COVID-19, including 5,260,888 deaths, were reported by WHO.[4] In

India, there have been 34,648,383 confirmed cases of COVID-19 with 473,757 deaths up to 7 December 2021 7:55pm CET.[5] In Kerala, up to 06/12/2021, there have been 5,169,198 positive cases of COVID-19 with 41768 deaths were reported.[6]

COVID-19 is a life-threatening virus that mainly affects our respiratory system, kidney, and GIT tract. People with a low immune system in their body fall prey to it. The situation makes hand hygiene an important defense against COVID 19.8 In current scenario preventive measures and healthy life style with efficient immune system have been suggested by WHO to fight and stay safe from COVID-19. Adaptation of effective hand hygiene is vital, where one of the best advices by WHO is to wash or sanitize your hands frequently with soap or >60% alcoholic hand sanitizer, respectively.

The alcohol content in the sanitizer has the property to kill the organisms with immediate action and last longer. A study was conducted in 2007 about the effectiveness of hand sanitizer in reducing the respiratory infection.[9] The use of hand sanitizer and hand washing has become particularly important during COVID-19. Guidelines provided by the Centers for Disease Control and Prevention (CDC) recommend frequent hand washing multiple times a day and suggest the use of an alcohol-based hand sanitizer that contains at least 60% alcohol when soap and water are not readily available.[10,11]

WHO recommended alcohol based sanitizers are mainly made up of ethanol, isopropyl alcohol, hydrogen peroxides in different combinations.[12] The misuse of the contents can be hazardous to health in many ways. Accidental ingestion of hydrogen peroxide can cause gastrointestinal irritation, embolism and vomiting. Not only hydrogen peroxide can the other contents also cause major systemic complications.[13]

The sanitizers play a major role in preventing the transfer of pathogens from one person to another. So, it is very important to know about how to use the sanitizers properly and the steps of sanitizing the hand. The elderly people are at high risk of getting infections easily because of immunosenescence.[14] The improper use and lack of knowledge regarding the use of sanitizers among the elderly population increases the chance of getting infection.

A study conducted on the acceptability and tolerability of alcohol-based hand hygiene products for elderly residents in long term care concluded that, improving hand hygiene in elderly residents could be an important infection control measure that would relieve the burden of health care associated infection.[15] This scenario provides the importance of maintaining proper hand hygiene and make the elderly people aware about the proper use of hand sanitizers.

MATERIAL AND METHODS

Research Approach: Quantitative approach
Research Design: Exploratory survey design
Research Setting: Selected districts of Kerala (Palakkad, Ernakulam, Wayanad, Alappuzha)
Population: The elderly population above65 years of age residing in the selected districts of Kerala
Sample: 100 elderly person above 65 years of age
Sampling technique: Convenience sampling

Data collection instruments

Tool 1: Socio demographic data sheet
Tool 2: Check list to assess the reported practice of the use of alcohol-based hand Sanitizer
Tool 3: Questionnaire to assess the knowledge regarding the use of alcohol based hand sanitizer

Procedure for data collection

This study was carried out in the elderly population above 65 years who are residing in the selected districts of Kerala using Google forms after getting approval from the Institutional ethics committee. A pilot study was conducted among 10 elderly. The sample size calculation was done using the data from the pilot study and found out to be 45. The elders selected were above 65 years, residing in the selected districts of Kerala and who were using alcohol-based hand sanitizer. Elders who were dependent for doing ADL, not willing to participate and who had difficulty for communication were excluded from the study. The data were collected using Google forms. The tools used were Socio-demographic data sheet, checklist to assess the reported practice of the use of alcohol-based hand sanitizer and questionnaire to assess the knowledge regarding the use of alcohol-based hand sanitizer. Statistical analysis of the data was done using descriptive statistics and inferential statistics.

RESULTS AND DISCUSSION

Section I: Frequency distribution and percentage based on Socio-demographic variables

Table 1: Frequency distribution and percentage of elderly based on Socio-demographic variables.

n=45

Socio demographic variables	f	Percentage (%)
Age in years		
Below 75	33	73.3
Above 75	12	26.7
Gender		
Male	12	26.7
Female	33	73.3
Education		
No formal education	5	11.1
School education	37	82.2
Professional education	3	6.7
Occupation		
Home maker	25	55.6
Private employee	2	4.4
Government employee	3	6.7
Others	15	33.3
Marital Status		
Unmarried	1	2.2
Married	27	60
Widow	17	37.8
Economic Status		
Above poverty line	29	64.4
Below poverty line	16	35.6
Type of family		
Nuclear family	17	37.8
Joint family	20	44.4
Extended family	3	6.7
Empty nest family	5	11.1

Data presented in Table 1 show that, the maximum number 33 (73.3%) belong to the age of below 75 years and 26.7% belong to the age of 75 years and above. Majority (82.2%) of participants have school education and (55.5%) of the participants were home makers. 60% of the participants belong to above poverty line category.

Section II-Description of knowledge regarding alcohol-based sanitizer use among elderly

Table 2: Distribution of elderly based on level of knowledge regarding alcohol-based sanitizer usage.

n=45

Knowledge regarding alcohol-based sanitizer use	f	Percentage (%)	Mean	SD
Poor knowledge	3	6.7	13.04	4.00
Average knowledge	22	48.9		
Good knowledge	20	44.4		

Table 2 show that, 22(48.9%) of the elderly have average knowledge regarding alcohol-based sanitizer use while 20 (44.4%) have good knowledge regarding alcohol-based sanitizer use. The mean knowledge score was 13.04±4.00.

Section III - Description of practice regarding alcohol-based sanitizer use among elderly

Table 3: Distribution of elderly based on the reported practice of alcohol-based sanitizer use.

n=45

Reported practice of alcohol-based sanitizer use	f	Percentage (%)	Mean	SD
Ideal Practice	41	91.1	75.49	8.71
Satisfactory practice	4	8.9		

Table 3 show that, majority (91.1%) of the elderly exhibited ideal practice of alcohol-based sanitizer use while 4 (8.9%) of the elderly have satisfactory practice of alcohol-based hand sanitizer use. The mean practice score was 75.49±8.71.

Section IV: Association between knowledge regarding alcohol-based sanitizer use with selected socio-demographic variables

Table 4: Association between knowledge regarding alcohol-based sanitizer usewith selected socio-demographic variables of elderly.

n=45

Demographic variables	Knowledge regarding alcohol-based sanitizer use			Chi-Square	p value
	Poor knowledge f	Average knowledge f	Good knowledge f		
Age in years				**11.38**	**0.003***
Below 75	0	15	18		
Above 75	3	7	2		
Gender				**0.101**	**0.95 ns**
Male	1	6	5		
Female	2	16	15		
Occupation				**10.09**	**0.12ns**
Household work	0	12	13		
Private sector	0	0	2		
Government job	3	8	4		
Others	0	2	1		
Education				**2.26**	**0.68ns**
No formal education	2	19	16		
School education	1	2	2		
Professional education	0	1	2		
Economic Status				**7.19**	**0.02***
Above poverty line	0	17	12		
Below poverty line	3	5	8		
Type of family					
Nuclear family	0	8	9	**12.3**	**0.05**
Joint family	1	12	7		
Extended family	2	1	2		
Empty nest family	0	1	2		

***(p<0.05)**

The data presented in Table 4 show that there is a statistically significant association between knowledge regarding alcohol-based sanitizer use with the age of the elderly (p=0.003), economic status (p=0.02) and type of the family (p = 0.05)

There is no statistically significant association between knowledge regarding alcohol-based sanitizer use and gender, occupation and education.

Table 5: Association between reported practice of alcohol-based sanitizer usewith selected socio-demographic variables of elderly.

n=45

	Reported practice of alcohol-based sanitizer use		Chi square	p value
	Ideal Practice f	Satisfactory practice f		
Age in years			**5.24**	**0.05#**
Below 75	1	32		
Above 75	3	9		
Gender			**0.006**	**1.000ns**
Male	1	11		
Female	3	30		
Occupation			**0.87**	**0.83ns**
Household work	2	23		

Private sector	0	2		
Government job	0	3		
Others	2	13		
Education				
No formal education	0	5	**0.94**	**0.62^{ns}**
School education	4	33		
Professional education	0	3		
Economic Status				
APL	2	27	**0.4**	**0.61^{ns}**
BPL	2	14		
Type of family				
Nuclear family	1	16		
Joint family	1	19	**6.83**	**0.07^{ns}**
Extended family	0	3		
Empty nest family	2	3		

***-significant (p<0.05), ns-not significant**

The data presented in Table 5 show that there is a statistically borderline significant association between reported practice of alcohol-based sanitizer use with the age of the elderly (p = 0.05) There is no statistically significant association between reported practice of alcohol-based sanitizer use with gender, occupation and education, economic status and type of family.

DISCUSSION

The findings of the present study implicate that (48.9%) of the elderly have average knowledge regarding alcohol-based sanitizer use while 44.4 percent have good knowledge regarding alcohol-based sanitizer use. Most of the elderly (91.1%) are exhibited ideal practice of alcohol-based sanitizer use. There is statistically significant association between knowledge regarding alcohol-based sanitizer use with the age of the elderly and economic status (p<0.05).

The finding of the study is consistent with the findings of the study done by on knowledge, attitude and self-reported performance and challenges of hand hygiene using Alcohol-Based Hand Sanitizers among Healthcare Workers during COVID-19 Pandemic in Ethiopia. The results showed that participants were knowledgeable ad following good hand hygiene practices of alcohol-based hand sanitizer use.[16]

A study was done by on Health care of the elderly during Covid-19 pandemic. The results indicated that encouraging the use of hand sanitizer can be opted as a method in prevention of Covid-19 among elderly.[17]

A systematic review on effectiveness of alcohol-based solutions for hand hygieneshow that effective use of alcohol based hand sanitizer is effective in the reduction of microorganisms from hand as well as contributes to increase in compliance with hand hygiene.[18]

A similar study on knowledge and practice on a different aspect was conducted onknowledge and self-reported Practice Regarding Mobility Safety Measures of Patients among employees quantitative approach with non-experimental survey design was used. The study was conducted among 60 patient mobility service department employees in Amrita Institute of Medical Sciences; Kochi (AIMS) sampling technique used was convenience sampling. A knowledge questionnaire regarding mobility measures in spinal cord injury patients and a self-reported questionnaire were distributed to 60 patient mobility employees to identify the physical activity levels, personal characteristics, and associated work factors. The results indicated that mostof the employees 26.7% had poor knowledge, 55% had average knowledge and 18.3% had good knowledge. 50% of the employee had good practice skill, 31.7% had excellent practice skill 10% had average skill and 8.3% had poor skill.[19]

A crossover study was done on acceptability and tolerability of alcohol-based hand hygiene products for elderly residents in long-term care. They have concluded that, elderly was willing to use alcohol-based hand sanitizer and pointed out difficulty in rubbing and forgetfulness as challenges of alcohol-based hand sanitizer use.[20]

A study was done on Hand sanitizer, An Alternative to Hand Washing during COVID-19 pandemic. The results indicated that the efficiency of the hand sanitizer dependent on multiple factors such as proper technique, it's consistency of use and quality of product used.[21]

A study was done on frequent use of Hand Sanitizer; on Human Health and Environmental Hazards by Exposure Pathways during COVID-19 pandemic. The results indicated that frequent use of hand sanitizer results toxicity that leads to fatal: may be attributed by accidental ingestion, absorption through dermal contact and suicidal ingestion. Repeated exposure of any disinfectant, antibiotics or other genotoxic chemicals to microbes tends them to get mutations through natural process that makes them resistance.[22]

A study was conducted on Effectiveness of Hand Sanitizers with and without Organic Acids for removal of antimicrobs. The study evaluated the effectiveness of ethanol hand sanitizers with or without organic acids to remove detectable rhinovirus from the hands and prevent experimental rhinovirus infection. Ethanol hand sanitizers were significantly more effective than hand washing with soap and water. The addition of organic acids to the ethanol provided residual virucidal activity that persisted for at least 4 hours.[23]

CONCLUSION

The data of the study conveys that, majority of the elders have average knowledge regarding the use of alcohol-based hand sanitizer. Most of the elders exhibited ideal practice of alcohol-based hand sanitizer use particularly under different like general aspects, the steps of the use and moments in which the sanitizer should be used. There is statistically significant association between knowledge regarding alcohol-based sanitizer use with the age of the elderly and economic status. The present study results show the importance and use of using alcohol-based hand sanitizer among elderly The findings of this study provide evidence regarding the importance of sanitizers to prevent infections. An information leaflet which helped to enhance the knowledge and practices were shared among the elderly who participated in the study. The process of study was a benefiting experience to the investigators which also facilitated the researchers to recognize the role of alcohol-based hand sanitizer in reducing the chances of getting infectionsamong elderly.

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