

Survey of Knowledge, Attitudes and Practice of the Elderly toward COVID-19 Pandemic in Al-Amara, Iraq

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Abstract—During the COVID-19 pandemic, elderly people (those aged 60 years and above) are more susceptible to coronavirus infection due to altered immune system response and a higher rate of underlying comorbidities. The purpose of present study was to identify of knowledge, attitudes and practices (KAP) of elderly people in Iraq toward COVID-19 disease as a vulnerable group and to found out relationship between elderlies' KAP and their socio-demographic data. An cross-sectional study 253 elderly people was carried out, through using a designed questionnaire. The data was analyzed using descriptive and analytical statistics, as well as the Gamma probability distribution model via a generalized linear model. The findings of study show a low in the mean scores of KAP of the study sample was 15.96 ± 2.99 , 10.38 ± 2.18 and 10.35 ± 2.05 respectively, and there was no significant difference between the genders. There was a highly significant relationship among KAP through generalized linear model with regard to participants age, level of education and marital status ($p < 0.05$), but no significant association between the elderly attitudes and their underlying diseases. This is one of the few studies done to investigate the KAP of elderly people in Iraq towards the coronavirus pandemic. The findings show that public health education about the seriousness of the epidemic, as well as follow-up by all responsible agencies, was not effective and that these interventions should be developed to mitigate the pandemic effects.

Keywords: elderly, knowledge, attitude, practice, COVID-19, Iraq

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INTRODUCTION

The Coronavirus pandemic 2019 (also called "COVID-19") causes a highly infectious respiratory disease. The disease was first discovered in Wuhan, China, in late December 2019 and rapidly spread across the world [4]. The disease's spread has triggered a public health crisis that is still escalating due to countries' strong social, economic, and political interdependence [17].

Close contact with infected individuals that release respiratory droplets tend to be the main routes of infection for this virus especially in elderly [8]. Due to the various complications that contribute to a deterioration of their physical condition, elderlies are a vulnerable population and constitute a high-risk group that requires more attention [5]. Implementing steps that could minimize COVID-19 disease transmission, such as quarantine, social distancing, separation, and group containment, are the foundation of managing the outbreak [14, 20]. In February 2020, the first coronavirus disease cases were discovered in Iraq. There are 126,704 confirmed cases as of August 1, 2020, with 4805 deaths [9]. Community adherence to the measures

implemented by the government is one of the most effective ways to improve COVID-19 control [16].

The disorder seems to be more severe in elderly or those with underlying disorders such as lung disease, diabetes, and other chronic illnesses [9]. Given a higher risk for complications and death among elderly it seems justified to focus on health-related behaviors in this group as a critical issue. The public's awareness of biological hazards is of key relevance in responding to public health emergencies and risk management [3]. Over the past four decades, much research has been conducted on KAP as a key strategy for educational interventions to prevent respiratory disease worldwide [19]. This is contingent on the elderly's KAP regarding COVID-19 which should aid in pandemic response [11]. The results of the survey conducted in Iran, which included 249 elderly people towards KAP about the COVID-19 epidemic, indicated that public health education about the disease was effective and needs continuous interventions [16]. Because of the widespread misconception among Iraqi people that health services are a source for disease transmission and the social stigma associated with coronavirus, many infected people have opted

out of care although the Ministry of Health has released recommendations in line with WHO guidelines for preventing disease transmission. These guidelines include updating health records, patients' isolation, and avoiding close contact with others [11–13].

According to the investigator's knowledge no studies have been conducted to determine adherence to control measures in Al-Amara city in particular; as a result, the author investigates elderly residents in this area of Iraq regarding their KAP as well as steps for disease prevention regarding COVID-19. Objectives of the study are:

- To assess the elderly's Knowledge, Attitudes and Practice regarding COVID-19;
- To determine the potential association between elderly's KAP and their socio-demographic data.

MATERIALS AND METHODS

The present cross-sectional study was conducted at Iraq on 253 elderly participants aged 60 years and above, living in the community of Al-Amara city and attending local primary health care centers (PHCs) as inclusion criteria. The key survey questionnaire administration took place from 1st February to 4th March, 2021. Sample size was calculated based on confidence interval of 95% with sampling error of 5% and expected prevalence was assumed to be 25%. This was estimated to be 258 participants, on the basis that the elderly population comprises 60,650 of the total population of 323,302 in 2020 [21]. The final sample was $n = 253$ because 5 participants refused to continue with the study.

To ensure consistency and to minimize the risk of bias, interviews were conducted using a uniform format for all participants. A multi-steps convenient non probability sampling method was conducted. A sample of 6 out of the 17 health centers in across the city were selected. Due to the prevalence of disease, the low number of elderly people visitors to health centers and the lack of permission to make phone calls to their selection by chance, 43 elderly persons who visited each of the six PHCs were selected equally by the convenience sampling method. After informed consent was provided, samples were taken and questions were answered, the agreed participants received concise and adequate information about the purpose of the interview and study with application all health regulations and maintained a safe social distance.

The data collection was held over a period of 25 working days. The investigator interviewed the recruited elderly participants in a face-to-face manner over the morning working period. There were no geriatric clinics in Al-Amara, randomization in selection was not feasible, as such the researcher targeted participants at the waiting area of the health centers out of convenience. Questionnaires were used as a guide to be delivered in the form of an interview in a simple

uniformed language by an individual conducting the research in a private and quiet environment. To be consistent, the investigator who delivered the survey practiced asking the questions in a systematic manner to limit variation. Each interview took approximately 15–20 minutes. Elderly participants were encouraged to talk liberally. Ethical approval for this study was obtained by the Ethics Committee of the College of Medicine, University of Misan, Iraq through scientific codes (IRAQ. COMUOM. RESEARCH.REC. 1492.82). The intent of the survey and ethical points such as the lack of a need for a name, the right to withdraw from the research, free participation, and information confidentiality were clarified to the participants at the start of the interview.

The research instrument was a researcher-made questionnaire with twenty-five questions on a 3-point Likert scale that was used to evaluate KAP of elderly people with standard methods for treating and COVID-19 prevention, with responses ranging from I know/Agree/or Always (score 3), Not sure/Neutral/ or Sometime (score 2), I don't know/ Disagree/ or Never (score 1) for knowledge, attitude and practices respectively. The validity was assessed by ten healthy elderly people, and relevant changes made based on their feedback. Content validity was determined by seven faculty members. Content Validity Ratio (CVR) was more than 0.51 based on the Lawshe table, and greater than 0.78 for the (CVI) = Content Validity Indicator [7].

Finally, Cronbach's alpha was calculated for all three domains as well as the entire questionnaire, and it was 0.87 for knowledge, 0.86 attitude, 0.83 practice, and 0.94 for the entire instrument. For qualitative variables, frequency (percentage) was used; descriptive statistics such as mean, median, standard deviation, and interquartile range (IQR). Furthermore, analytical statistics such as Kruskal–Wallis and Mann–Whitney tests have been used, and a generalized linear model using the Gamma probability distribution due to the non-normal distribution of KAP and SPSS 18 was employed for all calculations.

RESULTS AND DISCUSSION

A total of 253 respondents completed the questionnaires. Among them, 75.1% were of the elderly people were males and only 24.9% were females. Regarding age, the highest percentage of elderly was with age 60–64 years as referred among 37.5% of them. The level of education was referred that 43.5% of elderly people were graduated from primary school and 24.9% were graduated from middle school. The marital status referred that 78.7% of them were married. 89.7% of elderly were reported they have underlying diseases such as diabetes mellitus, hypertension, and heart disease as in Table 1. To our knowledge, this is the first national research to look at the Iraqi elderly's KAP regarding the Coronavirus in 2021. Due to the large

number of elderly people in Iraq assessing their KAP is crucial in health planning. The low levels of KAP are related to low levels of education and to a high level of chronic disease.

In Table 2 which presented the mean, standard deviation, and median of knowledge, attitudes, and practices toward COVID-19; the findings indicated that elderly were showed low knowledge, attitudes and practices as referred by low mean scores for the three domains: knowledge = 15.96 ± 2.99 , attitudes = 10.38 ± 2.18 , and practices = 10.35 ± 2.05 . The items of knowledge indicated that the highest percentage of elderly responses were associated with “I don’t know” that reveal they have low level of knowledge about COVID-19. The items of attitudes indicated that the highest percentage of elderly responses were related with “disagree” that revealed low attitudes except item “I don’t get sick if I wash my hands with soap and water” and “I don’t feel worried when someone in my family gets infected” that were associated with “neutral” which indicated moderate level of attitudes. The items of practices elucidated that the highest percentage of elderly responses were associated with “never” that showed low score of practices except item “Do you stay away from attending social events?” and “Have you stopped going to the supermarkets and tried online shopping?” that were associated with “sometimes” which indicate moderate score of practices. In the same vein, Egyptian research displayed that most of the percipients has a poor understanding of disease transmission [1].

The Table 3 showed a significant relationship among knowledge, attitudes, and practices among elderly with regard to their socio-demographic data; the findings indicated there was no significant relationship among knowledge, attitudes, and practices with regard to gender of old people as indicated by Mann–Whitney test and Generalized linear model. The Kruskal–Wallis test and generalized linear model indicated there were high significant relationship among knowledge, attitudes, and practices with regard to elderly age and level of education at $p = 0.001$. And there was significant relationship among knowledge, attitudes, and practices with regard to marital status at $p = 0.009$, 0.002 , and 0.001 . The finding also showed that there were significant relationships among knowledge and practices with regard to underlying disease among elderly as indicated by Mann–Whitney and generalized linear model at $p = 0.033$ and 0.021 , while there was no reported significant relationship between attitudes and underlying diseases among elderly.

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Table 1. Distribution of sample according socio-demographic data

List	Characteristics		Frequency	%
1	Gender	Male	190	75.1
		Female	63	24.9
2	Age, years	60–64	95	37.5
		65–69	82	32.4
		70–74	31	12.3
		75–79	22	8.7
		80–84	16	6.3
		85–89	4	1.6
3	Level of Education	90–94	3	1.2
		Illiterate	12	4.7
		Primary school	110	43.5
		Middle school	63	24.9
		High school	34	13.4
4	Marital status	College +	34	13.4
		Married	199	78.7
		Single	5	2
		Divorced	19	7.5
		Separated	3	1.2
5	Underlying disease	Widowed/er	27	10.7
		Yes	227	89.7
		No	26	10.3

From this it can be inferred that the low mean scores are related to lack of knowledge of the disease’s risk. The social media and internet are key sources of knowledge about the COVID-19 pandemic [18], as indicated by an Egyptian survey, which found that TV and social media were the most popular media, 35.1 and 80.8% respectively [10]. As a result, other findings showed that 80% of people were unaware of the usual symptoms of coronavirus [22].

Reasons for the low KAP found in Iraq may also be due to the participants’ lack of exposure to COVID-19 information on government websites since the outbreak started. For example, in the Egyptian survey, 36.4% of participants claimed that wearing face masks would not help contain the COVID-19 infection [1], and 53.5% of respondents in an Indian study were unsure about the government’s response [22]. Furthermore, the shortage of basic facilities, combined with Iraq’s declining economic conditions, has made most elderly people more concerned with obtaining an income to meet their family’s needs than with enhancing their awareness of the COVID-19 epidemic [11].

Previous studies from the Philippines [15] and Ethiopia [2], showed that only 56.5 and 38.1% of respondents, respectively, avoided crowded areas. Furthermore, 75.9% did not use protective gloves.

Table 2. Frequency distribution (%), standard deviation, mean, and median (quartile) for assessment KAP of elderly toward COVID-19

Domain	Field		Frequency, %		
	list	items	I don't know	not sure	I know
Knowledge	1	Coronavirus is transmitted through handshake	138 (54.5)	111 (43.9)	4 (1.6)
	2	Virus transmission occurs when an individual comes into contact with infected materials	185 (73.1)	59 (23.3)	9 (3.6)
	3	Coronavirus is transmitted through sneezing and coughing	164 (64.8)	76 (30)	13 (5.10)
	4	Near contact with patients puts people at risk	136 (53.8)	83 (32.8)	34 (13.4)
	5	Fever, weakness, dry cough, and myalgia are the most common COVID-19 symptoms	100 (39.5)	140 (55.3)	13 (5.1)
	6	The incubation period of COVID-19 is 1–14 days	145 (57.3)	108 (42.7)	0
	7	Mild symptoms should be treated at home	171 (67.6)	82 (32.4)	0
	8	The disease's risk is higher in the elderly with underlying illnesses	138 (54.5)	108 (42.7)	7 (2.8)
	9	Individuals with Coronavirus need to have an increased oxygen saturation of the blood in the event that the proportion is low	184 (72.7)	52 (20.6)	17 (6.7)
	10	To prevent infection, elderly should avoid going to public transportation, religious places and hospitals	139 (54.9)	100 (39.5)	14 (5.5)
	11	COVID-19 has a vaccine that is commercially available	140 (55.3)	112 (44.3)	1 (0.4)
Mean ± Standard deviation			15.96 ± 2.99		
Median (Quartile range)			15 (14–18)		
Attitudes	list	items	disagree	neutral	agree
	1	Corona infection is preventable	147 (58.1)	95 (37.5)	11 (4.3)
	2	If I sit at home, I don't get sick	145 (57.3)	85 (33.6)	23 (9.1)
	3	If I wash my hands with soap and water, I don't get sick	95 (37.5)	157 (62.1)	1 (0.4)
	4	If I clean the surfaces, I do not get sick	153 (60.5)	77 (30.4)	23 (9.1)
	5	I don't feel worried when someone in my family gets infected	104 (41.1)	137 (54.2)	12 (4.7)
	6	I don't feel worried about the high death toll	140 (55.3)	102 (40.3)	11 (4.3)
7	If a COVID-19 vaccine were available, would take it?	215 (85)	35 (13.8)	3 (1.2)	
Mean ± Standard deviation			10.38 ± 2.18		
Median (Quartile range)			10 (9–12)		
Practices	list	items	never	sometime	always
	1	Do you take 20 seconds to wash your hands?	161 (63.6)	90 (35.6)	2 (0.8)
	2	Do you wear a protective face mask when you leave your home?	125 (49.4)	126 (49.8)	2 (0.8)
	3	When you leave the house, do you put on your protective gloves?	192 (75.9)	57 (22.5)	4 (1.6)
	4	Do you stay away from attending social events?	113 (44.7)	127 (50.2)	13 (5.1)
	5	Do you maintain a gap of at least two meters between yourself and others?	108 (42.7)	126 (49.8)	19 (7.5)
	6	Have you given up going to the store in favor of shopping online?	122 (48.2)	127 (50.2)	4 (1.6)
7	Do you follow the MOH's instructions?	148 (58.5)	101 (39.9)	4 (1.6)	
Mean ± Standard deviation			10.35 ± 2.05		
Median (Quartile range)			10 (9–11)		

Table 3. Significant relationship of knowledge, attitudes, and practices of elderly with regard to their socio-demographic information and clinical differences of COVID-19

Characteristic		Knowledge		Attitudes		Practices	
		M	SD	M	SD	M	SD
Gender	Male	15.98	2.930	10.32	2.110	10.36	2.125
	Female	15.88	3.193	10.55	2.401	10.34	1.859
Significance level	Mann—Whitney	0.774		0.895		0.892	
	Generalized linear model	0.827		0.471		0.963	
Age	60–64	17.32	3.050	11.24	2.516	11.24	2.009
	65–69	16.09	2.427	10.35	1.807	10.58	1.578
	70–74	14.16	1.984	9.09	1.445	9.06	1.787
	75–79	14.95	3.605	9.68	2.212	9.36	2.700
	80–84	13.43	1.412	9.56	0.892	8.562	0.892
	85–89	12.75	0.500	8.75	0.957	8.50	0.577
	90–94	12.22	1.527	9.00	1.00	9.00	1.000
Significance level	Kruskal—Wallis test	0.001		0.001		0.001	
	Generalized linear model	0.001		0.001		0.001	
Education level	Illiterate	13.58	1.443	8.50	1.087	8.33	0.887
	Primary school	14.52	2.118	9.61	1.796	9.50	1.652
	Middle school	15.365	1.825	10.11	1.017	10.23	1.340
	High school	18.14	2.753	10.97	2.380	11.67	2.040
	College +	20.35	2.144	13.44	2.091	12.764	1.954
Significance level	Kruskal—Wallis test	0.001		0.001		0.001	
	Generalized linear model	0.001		0.001		0.001	
Marital status	Married	16.07	3.160	10.56	2.259	10.66	2.137
	Single	16.00	0.000	8.80	1.788	9.80	0.447
	Divorced	16.78	2.323	10.52	1.743	9.57	0.837
	Separated	17.33	2.309	11.33	2.309	11.66	1.154
	Widowed/er	14.37	1.757	9.11	1.339	8.62	1.079
Significance level	Kruskal—Wallis test	0.009		0.002		0.001	
	Generalized linear model	0.039		0.007		0.001	
Underlying disease	Yes	15.81	2.967	10.32	2.152	10.23	1.936
	No	17.23	2.957	10.92	2.415	11.42	2.744
Significance level	Mann—Whitney	0.033		0.055		0.021	
	Generalized linear model	0.022		0.184		0.005	

M—mean; SD—stander deviation.

This information is comparable to previous studies from Egypt [1] and India [22], which found that (87 and 88.4%) of people, respectively, did not wear gloves. The Iraqis are pessimistic about the COVID-19 epidemic: 45.4% of respondents have little faith in the Iraqi government's ability to defeat the virus, and 45.5% believe the coronavirus pandemic will not be effectively contained [18].

Our survey showed that were high significant relationship among elderly knowledge, attitudes, and practices with regard to age, level of education, marital status and underlying disease at $p < 0.05$. Similarly, M. Maracy et al. [16] found in study conducted in Isfahan a significant relationship between level of education and knowledge score ($p < 0.001$), age; attitude, also, age and practice ($p < 0.05$). Another research

conducted in the Saudi Arabia found there was a statistically significant association between attitude about COVID-19 pandemic and age, marital status, educational level, place of living, and occupational status [6]. The older age elderly had a higher contribution to the MOH precautions to avoid the COVID-19 pandemic than the younger age group, which can be due to the greater fear of death.

CONCLUSIONS

The KAP of elderly people in Al-Amara city was identified in this study, which can assist health policymakers in planning health care to cope with the coronavirus pandemic crisis. Based on this, a useful tool was developed, and the impact of the disease on the elderly's KAP was assessed. An important point in the study's findings was increase in their level of awareness as their education levels progressed, reflecting a greater willingness to use social networks and mass media. The findings revealed that there is need for the healthcare system to work to enhance the elderlies' understanding of pandemic in order to improve their practice and behavior in the face of the COVID-19 crisis.

COMPLIANCE WITH ETHICAL STANDARDS

The authors declare that they have no conflicts of interest.

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants involved in the study.

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