Knowledge and Quality of Life of Rural Older Adults during COVID-19 Pandemic

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Abstract

Background: The coronavirus (COVID-19) global pandemic negatively affected people's way of life regardless of age, sex, or ethnicity. This infectious disease is particularly lethal among the elderly, with even higher fatality rates among this age group. **Aim of the study:** Assess knowledge and quality of life of rural older adults during COVID-19 pandemic. **Subjects and Methods: Research design:** A descriptive design was utilized. **Setting:** The study was conducted in a rural area Shobera el nakhla selected randomly from Sharkia Governorate, Egypt. **Subjects:** Purposive sample composed of 300 older adults aged ≥60 years. **Tools of data collection:** Three tools were used to collect the study data. Tool I: A structured interview sheet. Tool II: knowledge of the studied older adults about Covid-19. Tool III: WHO Quality of life instrument short form (THE WHOQOL-BREF). **Results:** among the studied older adults, 68.7% had inadequate knowledge and 51.3% had poor quality of life. Statistically significant relations were found between quality of life and illiteracy, insufficient monthly income, and unmarried status. **Conclusion:** two-third of older adults had inadequate knowledge and more than half of studied older adults had poor quality of life during covid-19 pandemic. **Recommendation:** Healthcare Providers should be aware that older individuals were particularly vulnerable to the effects of covid-19 on quality of life and explore strategies to minimize their suffering during the COVID-19 pandemic.

Keywords
Covid-19, older adults, quality of life, rural area

Introduction

Population ageing is a global phenomenon. In 2019, there were 703 million persons aged 65 years or over in the global population. This number is projected to double to 1.5 billion in 2050(1). Until January 2019, Egypt elderly population had reached 6.5 million (3.5 million males and 3 million females) (٢)

World is moving through a very distressing stage by the spread of novel coronavirus (3). The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a novel virus in the coronavirus family, causing the coronavirus disease (COVID-19) (4). It was first discovered on November 17, 2019 in the city of Wuhan, mainland China, and then spread throughout the world. On March 11, 2020, COVID-19 was declared a pandemic by the World Health Organization (WHO) (5). Around October 2020, a second wave of the pandemic surfaced in several countries already heavily affected during the first wave. As of 13 January 2021, the number of COVID-19 new infections was 94.5 million worldwide, with 2.0 million as the cumulative number of deaths in the world (6). This infectious disease is particularly lethal among the elderly, with even higher fatality rates among this age group (7). Data from the Oxford COVID-19 Evidence Service (from the 25th March 2020) indicates a risk of mortality of 3.6% for people in their 60s, which increases to 8.0 and 14.8% for people in their 70s and 80s, respectively. To date, about 80% of COVID-19-related deaths have been of people aged over 60. According to data from the United States, from 10 to 27% people aged over 85 are at risk of death (8).

Knowledge of the COVID-19 disease has been acquired through several channels, with different social media platforms and the internet

dominating as the major sources of information of this novel disease. Studies have documented robust evidence that people who obtained their information through professional and scientific institutions or personnel have a positive attitude and higher confidence about the disease condition than those who obtained information from informal sources such as friends and relatives [9].

Quality of life (QoL) is the perceptions of individuals of their position in life in the context of the culture and value systems they live in and in relation to their objectives, expectations, standards, and concerns. QoL can be a comprehensive reflection of individuals' physical and mental health, and their ability to participate in society [10]. This disease's global reach and the application of classic forms of disease control through quarantine has reduced individuals' mobility. In conjunction with imposed isolation, these measures can have a dramatic effect on health-related quality of life and contribute to increased anxiety and depression [7].

Nurses have always played a key role in the care of patients, families, and communities, but during the Covid-19 pandemic this role was strained. The pandemic challenged nurses to provide care for patients during uncertainty while keeping patients, themselves, and their families safe [11]. Nurses have critical roles and responsibilities during the COVID-19 pandemic. They will continue to be at the front line of patient care in hospitals and actively involved with evaluation and monitoring in the community. A global pandemic needs strong nursing staff engagement in clinical management, awareness and knowledge exchange, and public safety [12].

Significance of the study:

The virus SARS-CoV-2 causing COVID-19 represents one of the biggest challenges the globalized world has yet confronted. Elderly people face a significant risk in developing a severe illness if they contract the disease due to physiological changes which come with aging and more frequently, underlying health conditions in this age group. Recent epidemiological data from Wuhan suggests 5.1 times higher risk of dying in symptomatic elderly patients aged 60 years and above and overall, over 95% of these deaths occurred in those older than 60 years as recent WHO data [13].

The COVID-19 virus outbreak has profoundly altered the daily life of older adults, with specific recommendations and restrictions varying within and between countries. However, long-term effects of prolonged physical distancing will likely affect older adults, who are particularly vulnerable to social isolation. The direct and indirect psychological and social effects of the COVID-19 pandemic are pervasive and could affect individual well-being now and, in the future [14]. Research studies on quality of life of elderly during covid-19 pandemic are limited in Egypt. Consequently, the current study was conducted to assess knowledge and quality of Life of rural older adults during COVID-19 pandemic.

Aim of the study:

The current study aimed to assess knowledge and quality of life of rural older adults during COVID-19 pandemic in rural area.

Research Questions:

1. What is the knowledge of rural older adults about covid-19?
2. What is the quality of life of rural older adults during covid-19 pandemic and its associated factors?

Subjects and methods:

Research design:

A descriptive study design was used.

Study setting:

The current study was carried out in a rural area selected randomly from Sharkia Governorate (Shobera el nakhla). The village of Shobera El naklah is a rural large village in Blebeis district and made up of 20 very small villages, with a population of elderly of 1696.

Study subjects:

A purposive sample composed of 300 older adults aged 60 years or above, free from psychiatric disorders and dementia, and able to communicate was selected in the recruitment of this study.

Sample size calculation:

The sample size was calculated using EPI info software program 7. Assuming that the number of elderly people in a randomly selected rural area (Shobera el nakhla village) is 1696 according to village health records and the percent of elderly with affected psychological domain of QOL in a previous study is 36.6% [(1◦).] Sample was calculated to be 295 older adults with confidence level 95% and design effect 1. This was increased to 300 to account for a non-response rate.

Sampling Technique:

A Multistage cluster sampling technique was used in the recruitment of this study subjects as follows:

- First stage (selection of district): The study was conducted in Sharkia Governorate, which consists of 17 districts. The investigator used simple random sampling technique to pick up a random district, it was Belbeis district (consists of 50 villages).
- Second stage (selection of village): The investigator picked up one village from the 50 villages randomly (Shobra el nakhla village).
- Third stage (selection of older adult's people): The selected village was divided into 20 clusters, (nearly 85 elderly individuals are living in each cluster). Accordingly, 4 clusters were selected randomly.
- All the elderly individuals achieve the inclusion criteria were included in the study sample till reaching the calculated sample size (300).

Tools of data collection:

Three tools were used to collect necessary data. **Tool I: a structured interview questionnaire** that was developed by the researchers based on the literature review. It consisted of demographic characteristics of the older adults which includes age, gender, marital status, educational level, current occupation, crowding index, monthly income, the source of income, and living condition.

Tool II: knowledge of the studied elderly about Covid-19:

It is thirteen items questionnaire was developed to assess knowledge about Covid-19 Azlan et al. [(16)]. The participant's knowledge about covid-19's clinical presentation (items 1-4), transmission pathway (items 5-8), and prevention and control (items 9-13) were included in these items.

Scoring system: Participants were given ''true'', 'false'' or ''not sure'' response option to these items. A correct response to an item was assigned 1 point, while incorrect \ not sure was assigned 0 point. Total scores range from 0-13, with a higher score indicating satisfactory knowledge about Covid-19.

1-Scores ≥ 60 % (≥ 7.8): Satisfactory knowledge about covid-19.

2-Scores < 60 % (< 7.8): Unsatisfactory knowledge about covid-19.

Tool III: The WHO Quality of Life Instrument-Short Form (THE WHOQOL-BREF):

QOL was measured using the self-administered WHO Quality of Life Instrument-Short Form (WHOQOL-BREF) Skevington et al. [(17).] It comprised 26 items including domains and facets (or sub-domains). The first two items assessed the “overall rating of QoL (OQOL)” and subjective satisfaction with health. The other 24

items measured four domains, namely, physical health (seven items), psychological health (six items), social relations (three items), and environment (eight items). The participants marked a response using a 5-point Likert scale [ranging from 1 (very dissatisfied/very poor) to 5 (very satisfied/very good)]. The domain scores of the WHOQOL-Bref were computed according to the guideline of the WHO [18].

Content validity& Reliability:

The tools were revised by five experts in the field of gerontological nursing, community health nursing in Zagazig and Mansoura University. The panel reviewed the tools content for relevance, clarity, comprehensiveness, and understandability. The reliability of this tool was tested through measuring its internal consistency. Internal consistency of the tools was assessed by calculating Cronbach alpha coefficients. In the current study, Cronbach α of the knowledge scale was 0.904 and Cronbach α of The WHO Quality of Life Instrument-Short Form was 0.908

Fieldwork

Once permission was granted to proceed with the study, the researcher began planning a data collection time table. The fieldwork was carried out within the period of four months, starting from the beginning of August 2021 up to the end of November 2021. Each elderly was interviewed individually at the older adults' home with taking into account the preventive and precaution measures to be protected from COVID-19. The interview questionnaire took 30 -40 minutes to answer. The researcher allocated three days per week (Saturday, Friday and Wednesday) from 8.00 AM to 3.00 PM.

Pilot study:

A pilot study was carried out on 30 older adults from above mentioned setting (Shobra el nakhla village) representing 10% of the total study sample. The pilot study's goals were to see if the study tools were clear, practical, and useful. Also, to estimate the time required to complete the data gathering tools. The study's purpose was explained to all participants in detail. The pilot study is included in the studied sample since no changes to the data collection instruments were made after the pilot study was completed.

Administrative design and ethical considerations:

The administrative design implemented through submission of a formal letter containing aim of the study from Postgraduate department at Faculty of Nursing Zagazig University to the Shobra el nakhla village mayor. Verbal consent was obtained from the elderly after a description of the purpose of the study.

Statistical analysis:

Data entry and statistical analysis were done using SPSS 22.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. The Cronbach alpha coefficient was calculated to assess the reliability of the study tools through their internal consistency. Qualitative categorical variables were compared using a chi-square test (X^2). Whenever the expected values in one or more of the cells in a 2x2 tables was less than 5, Fisher exact test was used instead. The Spearman rank correlation was used for assessment of the interrelationships among quantitative variables and ranked ones. In order to identify the independent predictors of the knowledge and QOL scores, multiple linear regression analysis was used after testing for normality, and homoscedasticity, and analysis of variance for the full regression models were done. Statistical significance was considered at p-value <0.05.

Results:

Regarding the demographic characteristics of the older adults in the study sample, **Table 1** shows that`64.7% of the studied older adults their age ranged between 65 to less than 70 years and the mean of age was 68.48±3.88 years. Besides, 65.0 % were females and 81.7% were married. Among the studied elderly, 79.3% lived with their spouses with crowding index less than 2 / room (89.7%) and 88.7% of them not working. Moreover, their source of income was from pension (51.0%) and this income was insufficient (67.7%).

Considering the total knowledge levels among the studied older adults, **Figure 1** represents that higher percentage of older adults in the study sample had unsatisfactory knowledge about covid-19 (68.7%). While 31.3% of the studied elderly had satisfactory knowledge about covid-19.

Regarding to the QOL levels among the studied older adults during covid-19, **Figure 2** depicts that 51.3% of the studied older adults had poor QOL during covid-19 and 48.7% of them had good QOL during covid-19.

Table 2 represents that there were statistically significant relations between the older adults' knowledge about covid-19 and their demographic characteristics as age, gender, education, current working and monthly income at $p<0.05$. It was clear that higher percentage of the studied elderly with unsatisfactory knowledge about covid-19 were females, aged 80 years and more, unmarried, illiterate, not working and had insufficient income.

According to **Table 3** represents that there were statistically significant relations between the older adults QOL during covid-19 and their demographic characteristics as marital status, education, and income ($p=.001$, $p=.003$ and $p=.005$), respectively. It is clear that the higher percentage of the studied elderly with poor QOL during covid-19 were unmarried, illiterate, and had insufficient income.

According to **Table (4),** the older adults age, gender and current working status had statistically significant negative correlations with score of knowledge, while educational level and monthly income had statistically significant positive correlations with score of knowledge.

Concerning to the older adults' score of QOL, this score had statistically significant positive correlations with older adults' educational level and monthly income. Meanwhile, marital status had negative correlation with this score **(Table 4)**.

As to multiple linear regression model for knowledge about covid-19, **Table 5** shows that the education level, monthly income were statistically significant positive predictors for older adults' knowledge about covid-19.

Considering multiple linear regression model for older adults QOL during covid-19, **Table 6** reveals that marital status was statistically significant negative predictor for elderly's QOL during covid-19. Also, monthly income was statistically significant positive predictor for elderly's QOL during covid-19.

Discussion:

Concerning knowledge of older adults regarding covid-19, more than two third of the studied elderly had unsatisfactory knowledge and less than one-third had satisfactory knowledge level about covid-19. Possible explanations of such result are; Firstly, the older adults lived in rural areas and had no access to the internet, television, or other social media, resulting in a lack of information to keep them up to date on COVID-19. Secondly, Health information that can improve older people's understanding and practice is

becoming more widely available online, although it was unavailable to the elderly in rural areas. Thirdly, the older adults in rural areas were usually illiterate, with little access to and understanding of health information and health-promoting behaviors to prevent COVID-19. Lastly, in rural locations, the major routes to obtain information are through family, friends, and healthcare workers, which is not as timely as information obtained in urban areas. When health information was not given in a timely and efficient manner, the likelihood of putting it into practice was low.

Similar results have been found by Elashri et al. [19] who conducted a study in Egypt which reported that the majority of the studied elders had poor knowledge before implementation of COVID-19 Educational Bag? In the same line, a cross sectional study in Research with Humans of the Hospital Universitário Onofre Lopes (HUOL) linked to the Federal University of Rio Grande do Norte (UFRN) carried out by De Lima Filho et al. [20]found that the elderly participants did not have in-depth knowledge concerning COVID-19. Moreover, Nicholas et al. [21] carried out a study in the South West Region of Cameroon which reported that less half of participants had an intermediate knowledge and one-third of them had poor knowledge regarding COVID-19.

This finding is inconsistent with previous studies as, Chen et al. [22]. in China who concluded that mostly of the elderly had good knowledge. Also, Al-Hanawi et al. [23] carried out a cross-sectional study among the public in the Kingdom of Saudi Arabia who found that majority of study sample had good knowledge. The disparity in knowledge level percentages could be due to significant heterogeneity in culture and socioeconomic factors, as well as the fact that these studies were conducted in different age groups, whereas these countries are characterized by high health awareness and high socioeconomic status, both of which positively affect knowledge level.

Another possible explanation might be that the high level of knowledge among participants could be attributed to the fact that the majority of participants have a bachelor's degree or more, or it could be due to extensive media coverage across all media outlets, as well as the pandemic's impact on social life, which forces people to follow.

As elucidated from the current study findings, a statistically significant negative correlation between older adults' knowledge and age was found, as unsatisfactory knowledge level was associated with elderly aged 80 years and more. Possible explanations of Such result are; firstly; as people get older, their hearing and visual abilities deteriorate, making it difficult to read and interpret health instructions. Secondly; Aging-related cognitive decline may pose similar difficulties. These factors are thought to be a barrier to learning about COVID-19, resulting in a lack of knowledge. Lastly; the findings suggest that these older individuals' knowledge sources were poor, or that their capacity to retain information was inadequate.

In the same context, the results of an Egyptian survey conducted by Abdel hafiz et al. [24] showed that there were statistically significant association between lower knowledge and participants aged 50 to less than 60 and those ≥ 60 years compared to the younger age groups. As well, Kassa et al. [25] who carried cross-sectional study conducted in Dessie and Kombolcha City administrations, North-East Ethiopia found that inadequate knowledge was statistically significantly associated with age >65 years. Moreover, a study conducted by

Galle et al. [26] in Southern Italy reported that age was a statistically significant negative predictor related to knowledge about covid-19.

Concerning the relation between knowledge and educational level and monthly income, the results indicated that educational level and monthly income were statistically significant positive predictors for elderly's knowledge about covid-19. The explanation of such result is; Firstly; poverty may hinder elderly people's access to essential requirements such as education. Secondly; the process of learning and obtaining knowledge is referred to as education, People with a higher degree are better knowledgeable about COVID-19 than those with a lower degree of education. Lastly; Because of their positive influence on attitudes toward adopting preventive behaviors, educational level and monthly income were the stronger predictors of COVID-19 related knowledge.

These findings are in agreement with prior study carried out by Mondal et al. [27] in USA where the educational level and income were statistically significant related to knowledge about covid-19. Another study in Indonesia conducted by Sulistyawati et al. [28] reported that education was statistically significantly associated to knowledge about covid-19. Moreover, A cross-sectional study conducted by Lee et al. [29] in South Korea clarified that education was statistically significantly associated to knowledge about covid-19.

Regarding relation between knowledge about covid-19 and the gender of studied older adults, results of the current study indicated that unsatisfactory knowledge level about covid-19 significantly higher among females' elderly. Such results might be attributed to the fact that females do more extraordinary activities than males, such as cooking, washing, and preparing for daily home consumption. Therefore, they might have less time to read and scale up their knowledge. In the same vein, Saeed et al. [30] carried out a cross-sectional study in Mosul-Iraq reported that gender was statistically significantly associated with knowledge about covid-19. Also, a bi-national survey conducted by Hager et al. [31] in Africa found that there was a statistically significant association between gender and knowledge about covid-19.

Regarding quality of life of the older adults during Covid-19, half of the studied elderly had poor quality of life. Possible explanations of such result are; Firstly, During the Covid-19 epidemic, the negative consequences of social isolation on elderly people's physical and psychological well-being were amplified due to more strict physical limitations and isolation as part of the main preventive efforts.

Also, the older adults' participation in social activities has been limited due to social distance regulations, which have influenced their connections with friends and family. Furthermore, the closure of mosques during the lockdown limited religious activities. Secondly, the elderly is the most vulnerable group to COVID-19, and fear of infection is linked to a lower quality of life. During the COVID-19 epidemic, fear and stress are prevalent stressors. Excessive stress can disturb the psychological and physiological systems, resulting in tiredness, poor performance, and problems with emotion management. Stress disturbs the immune response, gastrointestinal function, and endocrine system. Lastly, the impacts of psychological stress on other systems may have an impact on physical health. Psychological stress, for example, has been shown to alter vagal tone, increasing the risk of cardiovascular disease.

This finding is consistent with a study in Australia carried out by siette et al. [14] found that older adults' quality of life decreased during the pandemic compared to the prior year. likewise, across sectional study conducted by Nguyen et al. [32] in Vietnam reported that higher percentage of study sample had poor quality of life. In the same stream, a study conducted in Japan by Matsuoka & Sumida [33] reported that less half of the elderly had poor quality of life.

On the contrary, wang et al. [34] conducted a study in China reported that two-third of the study sample had normal good quality of life with the highest mean scores were for the environmental domain and social relationship, while the lowest mean scores were for physical domain. Moreover, Bidzan-Bluma et al. [8]. carried out a study in German, reported that older people rated their quality of life higher than did young. Possible explanation for such results might be that the higher levels of quality of life in older adults are influenced by a variety of factors, including socioeconomic position, overall health, and the capacity to continue an active and independent lifestyle.

Another plausible explanation might be that "successful ageing" is viewed positively by older people when it is related to the absence of sickness and the experience of positive reinforcements in the areas of exercise, money, social life, and family relationships. The happy ageing process is aided by creative and social activities that maintain a sense of belonging to a social group. In elderly adults, a better appraisal of quality of life, well-being, and life satisfaction was linked to a lower level of anxiety.

Turning to relation between income with quality of life, the current study revealed that lower personal income was positively related to poorer quality of life. There are several explanations for this relationship, the elderly people with lower incomes have less understanding of illness prevention and healthier habits, so they are less likely to gain the benefits of a healthy lifestyle, in additions to lower socioeconomic status is associated with less access to basic services and needs for the elderly in health care, transportation, education, and locating safe and age-friendly living places, which may impact QOL in the physical health, psychological health, social relationships, and environmental domains.

In the same context, Samadarshi et al. [35] in Nepal reported that older adults with high sufficient income had 3.90 times higher QOL than those with low sufficient income. In addition, a study in Dutch, conducted by Gobbens & Remmen. [36]. summarized that income was statistically significant positive associated with quality of life. Lower monthly income was significantly associated with decreased quality of life, compared with high monthly income.

As educational level is one of the health determinants and an important influencing factor of quality of life among geriatric populations. The current study results revealed that the education level was statistically significant independent positive predictor of elderly quality of life score. Possible explanations for such results might be attributed to the fact that education is one of the best predictors of longevity and influences the quality of life of the elderly through that education improves QOL by providing intellectual development and social adaptation and helps the elderly be aware of chronic illnesses and have a successful ageing process. Indeed, Better education may lead to more work options, higher earnings, and higher living standards, all of which contribute to higher QOL ratings in the psychological health and environmental domains. One further possible explanation, an educated individual has the ability to make decisions on their own. Education encourages people to learn about important aspects of their environment

and societal ideals, allowing them to form significant external linkages with the community, which may lead to improved social relationships. on the other hand, Illiteracy is frequently linked to low socioeconomic position, which has a detrimental impact on one's quality of life.

In the same vein, purba et al. [37] in Indonesia reported that increased education was independently associated with better quality of life. Furthermore, Moudi et al. [38] conducted case–control study among elderly people in Qaen (Southern Khorasan province), Iran found that primary education and diploma opposed to the illiterate were significantly related to higher QOL score.

The current study explicated that the marital status was statistically significant independent negative predictor for quality of life. Such a result might be attributed to that Those who are married or in a stable long-term relationship are healthier and happier in life, less likely to suffer from anxiety or depression, and have higher psychological and emotional well-being than those who are single or divorced. In other words, it has been proven that marriage improves one's quality of life.

Another possible explanation might be that the marital protection effect refers to the notion that married people benefit from additional family assistance, such as psychological and health behavior support. The protective role of marriage in the uptake of preventive behavior during a pandemic is important since married people are motivated to behave appropriately by their partners.

These findings are in accordance with a study conducted by Samadarshi et al. [35]. in Nepal concluded that married older adults had 1.68 times higher quality of life than those who were unmarried. Furthermore, a study conducted by Devraj & D'mello. [39]. in Mangalore, Karnataka found that statistical significance between marital status and quality of life. All of these results suggest that people who live in rural regions and who are not married should receive more attention in terms of health education and promotion, and their social, psychological, and physiological features should be considered.

Conclusion:

The current study finding revealed that two-third of older adults had inadequate knowledge and half of them had poor quality of life. Also, the elderly age, gender and current working status had statistically significant negative correlations with score of knowledge, while educational level and monthly income had statistically significant positive correlations with score of knowledge. significant predictors of older adults' quality of life during covid-19 were marital status, educational level and monthly income. Moreover, the elderly's quality of life was statistically significantly positively correlated with educational level and monthly income. Meanwhile, marital status was statistically significantly negatively correlated with elderly's quality of life.

Recommendations:

In view of the study findings, the following recommendations are proposed:

- Healthcare providers should be aware that older individuals were particularly vulnerable to the effects of covid-19 on quality of life and explore strategies to minimize their suffering during the COVID-19 pandemic.
- attention should focus on strategies to mitigate the negative effects of distancing measures on older people's quality of life, especially in those with lower functionality and chronic conditions.

Table (1): Demographic characteristics of the older adults in the study sample (n=300)

Demographic characteristics	Frequency	Percent
Age:		
60-69	194	64.7
70-79	77	25.7
80+	29	9.7
Mean±SD	**68.48 ± 7.88**	
Rang	**(60 – 98)**	
Gender:		
Male	105	35.0
Female	195	65.0
Marital status:		
Married	245	81.7
Unmarried (Widowed, divorced, single)	55	18.3
Current occupation:		
Working	34	11.3
Not Working	266	88.7
Crowding index:		
<2	269	89.7
2+	31	10.3
Monthly Income:		
Insufficient	203	67.7
Sufficient	97	32.3
Source of income:		
Pension	153	51.0
Family assistances	44	14.7
Still working	33	11.0
Property income	18	6.0
Other [social affairs pension – husband pension]	52	17.3
Living with whom:		
Alone	4	1.3
Spouse	238	79.3
Sons	58	19.3

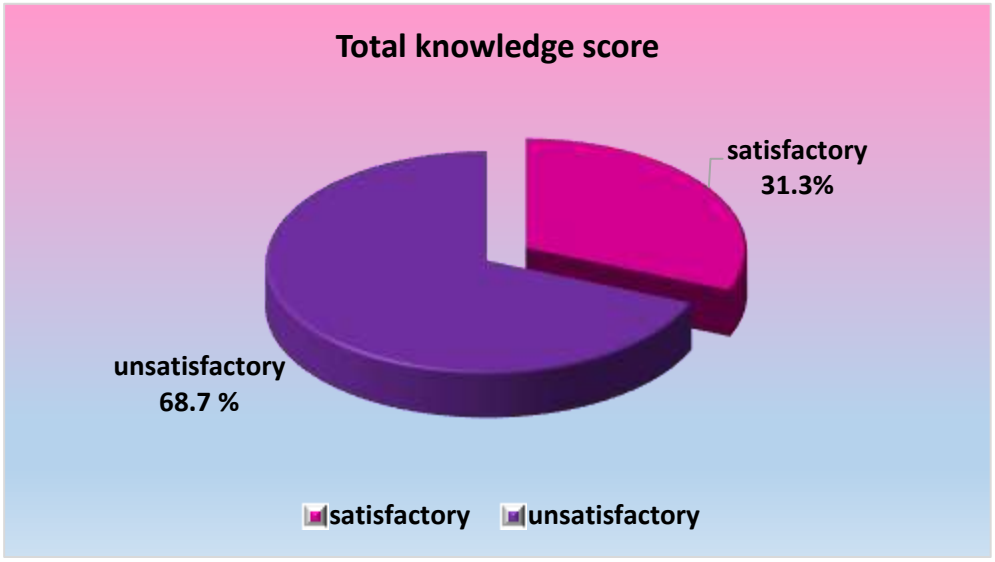

Figure 1: Total knowledge levels among the studied older adults (n=300)

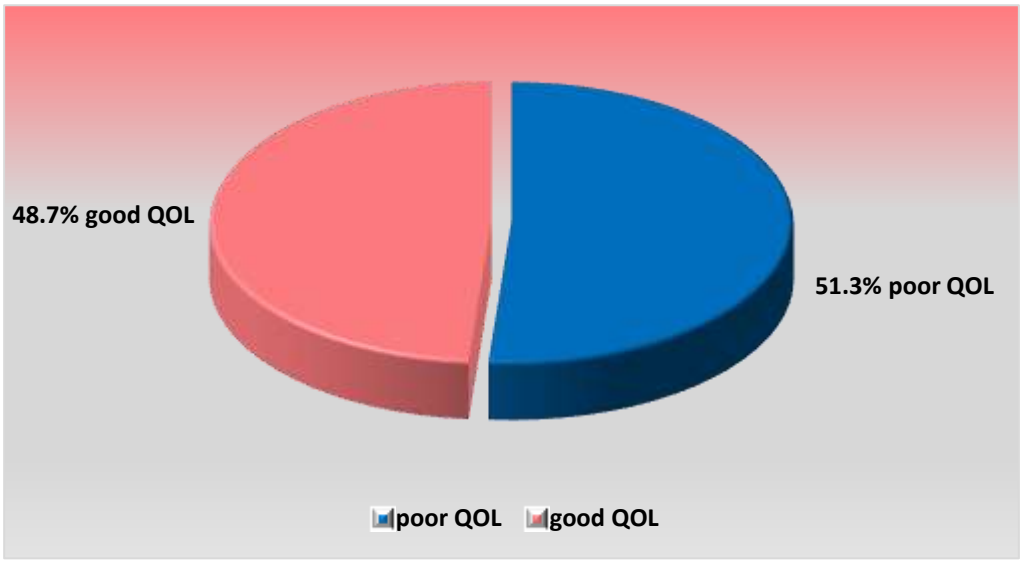

Figure 2: QOL levels among the studied older adults during covid-19 (n=300)

Table (2): Relation between older adults' knowledge about covid-19 and their demographic characteristics (n=300)

Demographic characteristics	Knowledge about covid-19				X^2 test	p-value
	Unsatisfactory (n=206)		Satisfactory (n=94)			
	No.	%	No.	%		
Age:						
60-69	127	65.5	67	34.5		
70-79	53	68.8	24	31.2	6.86	**.032***
80+	26	89.7	3	10.3		
Gender:						
Male	57	54.3	48	45.7	15.53	**.000***
Female	149	76.4	46	23.6		
Marital status:						
Married	163	66.5	82	33.5	2.83	.092
Unmarried	43	78.2	12	21.8		
Education:						
Illiterate	144	85.2	25	14.8		
Read/write	28	73.3	10	26.3		
Basic	17	42.5	23	57.5	67.66	**.000***
Intermediate	4	33.3	8	66.7		
University / Postgraduate	13	31.7	28	68.3		
Current working:						
Working	14	41.2	20	58.8	13.47	**.000***
Not working	192	72.2	74	27.8		
Crowding index:						
<2	187	69.5	82	30.5	.874	.350
2+	19	61.3	12	38.7		
Monthly Income:						
Sufficient	49	50.5	48	49.5	23.15	**.000***
Insufficient	157	77.3	46	22.7		
Living with whom:						
Alone	2	50.0	2	50.0		
Spouse	160	67.2	78	32.8	4.99	.172
Sons	44	75.9	14	24.1		

Table (3): Relation between older adults' QOL during covid-19 and their demographic characteristics (n=300).

Demographic characteristics	QOl during covid-19				X^2 test	p-value
	Poor (n=154)		Good (n=146)			
	No.	%	No.	%		
Age:						
60-69	94	48.5	100	51.5	4.26	.119
70-79	40	51.9	37	48.1		
80+	20	69.0	9	31.0		
Gender:						
Male	53	50.5	52	49.5	Fisher	.904
Female	101	51.8	94	48.2		
Marital status:						
Married	115	46.9	130	53.1	10.33	**.001***
Unmarried	39	70.9	16	29.1		
Education:						
Illiterate	100	59.2	69	40.8		
Read/write	20	52.6	18	47.4		
Basic	16	40.0	24	60.0	16.32	**.003***
Intermediate	7	58.3	5	41.7		
University / Postgraduate	11	26.8	30	73.2		
Current work:						
Working	15	44.1	19	55.9	.799	.371
Not working	139	52.3	127	47.7		
Crowding index:						
<2	141	52.4	128	47.6	1.22	.269
2+	13	41.9	18	58.1		
Monthly Income:						
Sufficient	37	38.1	60	61.9	10.57	**.005***
Insufficient	117	57.6	86	42.4		
Living with whom:						
Alone	3	75.0	1	25.0		
Spouse	114	47.9	124	52.1	6.159	.104
Sons	37	63.8	21	36.2		

(*) Statistically significant at p<0.05

Table (4): Correlation matrix of knowledge, QOL and personal characteristics of the studied older adults

Personal Characteristics	Spearman's rank correlation coefficient	
	Knowledge	QOL
Age	**-.115***	-.094
Gender (female sex)	**-.228****	-.013
Marital status (unmarried)	-.097	**-.186****
Education	**.456****	**.206****
Current work (not working)	**-.212****	-.052
Income	**.273****	**.184****

(*) Statistically significant at p<0.05 (**) statistically significant at p<0.01

Table (5): Best fitting multiple linear regression model for older adults' knowledge score about covid-19

Items	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	1.117	.209		5.339	**.000**	.705	1.529
Age	.011	.035	.016	.310	.757	-.059	.081
Gender	-.057	.048	-.059	-1.206	.229	-.151	.036
Marital status	-.054	.030	-.088	-1.780	.076	-.113	.006
Education level	.055	.019	.171	2.913	**.004**	.018	.092
Current job	-.105	.071	-.072	-1.477	.141	-.245	.035
Crowding index	-.075	.070	-.050	-1.071	.285	-.214	.063
Monthly income	.114	.048	.117	2.397	**.017**	.020	.208

R-square=0.40 Model ANOVA: F=21.73, p<0.001 Statistically significant at p<0.05

Table (6): Best fitting multiple linear regression model for older adults' QOL score during covid-19

Items	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
(Constant)	1.205	.225		5.360	**.000**	.763	1.648
Marital status	-.129	.037	-.196	-3.449	**.001**	-.203	-.055
Education level	.036	.024	.105	1.502	.134	-.011	.084
Current job	.063	.091	.040	.692	.489	-.116	.241
Monthly income	.154	.061	.146	2.516	**.012**	.033	.274

R-square=0.13 Model ANOVA: F=6.32, p<0.001 Statistically significant at p<0.05

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