

The Relationship between COVID-19 associated Social Stigma and Health Seeking Behaviors among Older Adults

Reham Magdy Mohammed Abd Elsalam¹, Samia El Hussein Abd El Mageed El Kholy², Sahar Mohammed Abd El-Hamid El-Sakkar³

¹ Assistant Professor Gerontological Nursing, Faculty of Nursing, Alexandria University

² Assistant Professor Gerontological Nursing, Faculty of Nursing, Alexandria University

³ Clinical Instructor Community health Nursing, Faculty of Nursing, Damam University

Abstract: Some words (e.g., suspect case, isolation...) and languages used in discussions about COVID-19 might have a undesirable connotation for certain people, stimulating stigmatizing attitudes. COVID-19 social stigma can erode social cohesion and lead to older adults' social isolation. It has the potential to deter older individuals from seeking medical help right away and from adopting healthy habits. **Aim:** Determine the relationship between COVID-19 associated social stigma and health seeking behaviors among older adults. **Design:** the study followed a descriptive correlational research design. **Setting:** Farouk hospital outpatient clinics, affiliated to the Ministry of Health, Alexandria Governorate, Egypt. **Subjects:** Convenience sample of 170 older adults were recruited. **Tools:** Three tools were used for data collection: 1) Older adults' socio-demographic and health profile structured interview schedule, 2) COVID-19 associated social stigma among older adults structured interview schedule 3) Older adults' health seeking behaviors structured interview schedule. **Results:** the present study result revealed that the study subjects reported slightly low mean percent score of total COVID-19 associated social stigma, 45.77 ± 15.86 with the highest mean percent score of stigmatized attitude towards treatment of COVID-19, 55.40 ± 14.23 . At the same time, the study subjects reported considerable high mean percent score of total health seeking behaviors, 71.73 ± 9.22 . **Conclusion:** Despite the present study revealed no statistically significant correlation between total mean percent score of COVID-19 associated social stigma and total mean percent score of health seeking behaviors among older adults, social stigma specifically related to the treatment of COVID-19 was negatively correlated with health seeking behaviors. On the other hand, a significant positive correlation was found between social stigma toward COVID-19 patient and health seeking behaviors. **Recommendations:** Gerontological nurses should assist older adults in understanding the COVID-19 disease and taking effective and practical steps to protect themselves by seeking medical help. Gerontological nurses should also speak out against negative stereotypes and disseminate accurate information about the disease from credible, official sources.

Keywords: COVID-19; health seeking behaviors; older adults; social stigma.

Introduction

The COVID-19 pandemic has created a critical situation for public health around the world, particularly among the older adults. Efforts have been focused on ensuring adequate levels of preparation and response in order to effectively and efficiently combat the disease and manage the outbreak's consequences (Jones, 2020).

During outbreaks or pandemics, older adults' fears stem from apprehension about a disease with no known cause and a potentially fatal outcome, particularly when infection control techniques like quarantine and isolation are used to protect the community (Buheji et al., 2020). During the COVID-19 pandemic, imposing unfamiliar measures to protect public health, a lack of understanding of modes of transmission, and health resource shortages were among the many factors that contributed to public and older adults' fear and anxiety (Fischer et al., 2020). COVID-19 has a social stigma attached to it due to three key factors: it's a new disease with a lot of unknowns; persons are often afraid of the unknown; and it's easy to link that fear to "others." The public's confusion, anxiety, and fear are understandable. Unfortunately, these factors are also help to the spread of harmful stereotypes and stigmatized behaviors (Ren et al., 2020).

In the context of health, social stigma refers to the negative association that occurs between an individual or group of persons who share some characteristics and a

particular disease. Because of a perceived link with a disease, older adults may be stereotyped, labelled,

treated separately, discriminated against, and/or lose status during an outbreak (Shahrour et al., 2021; Qian et al., 2020; Singh & Subedi, 2020). Stigma has been linked to various infectious diseases in the past, resulting in discrimination against patient groups, with negative consequences for both individuals and society (Hampson et al., 2020).

COVID-19 patients, as well as their caregivers, family, friends, and communities, can be negatively impacted by unhealthful COVID-19 treatment. Stigma may also affect older adults who do not have the disease but share some of the same characteristics as this group. The current COVID-19 outbreak has resulted in social stigma and discrimination against people of certain backgrounds, as well as anyone suspected of coming into contact with the virus (Shahrour et al., 2021; Qian et al., 2020; Singh & Subedi, 2020).

In the case of COVID-19-related stigma among coronavirus patients, older adults were mostly afraid of infection, worried about social judgement, and blamed themselves or others for being a source of infection or for the negative consequences. During the COVID-19 pandemic, they were subjected to COVID-19-related stigmatization, primarily from their neighbors and others with whom they interacted in the community. Stereotyping, prejudice, social avoidance, and discriminatory attitudes are examples of stigmatizing behaviors (Dibartolo-Cordovano et al., 2020).

Several forms of stigma have been recorded worldwide during the current COVID-19 pandemic, mainly directed at persons of Asian descent, those with a travel history, healthcare professionals, and some countries refusing to bury the bodies of COVID-19 victims because they could be a source of infection. Those events signaled the start of a wave of stigma (Wang et al., 2020). Furthermore, according to Freeman et al. (2020), there is a link between belief in COVID-19 conspiracies and increased vaccine hesitancy and stigma. Older adults who thought the virus is bioengineered, for example, were less likely to follow public health guidelines (such as staying at home) and were less likely to accept a COVID-19 vaccine or treatment.

COVID-19 stigma may cause elders to hide their illness in order to avoid discrimination, prevent them from seeking medical help right away, and discourage them from adopting healthy habits. For older adults who are suspected of being infected, stigma continues to be a significant barrier to seek health care (Ghazavi-Khorasgani et al., 2020).

Any act taken by an older adult who believes they have a health problem with the goal of finding an appropriate remedy will be defined as health-seeking behavior of older adults. Individuals can seek out formal support services (e.g., from psychologists, clinicians, counsellors, or physicians) or informal support services (e.g., from family or friends) depending on their needs (Noorrizki et al., 2021). When seeking health care, it's critical to figure out how an older adult feels about COVID-19. Seeking help for COVID-19 symptoms as soon as they appear allows healthcare members to intervene on infected persons earlier, track those who had direct contact with cases, assess them and carry out preventive acts such as masks and quarantine if their test results were negative, or begin treatment and isolation if their test results were positive. As a result, seeking treatment for COVID-19 as soon as signs and symptoms appear can help to slow the pandemic's spread (Noorrizki et al., 2021).

It's critical for gerontological nurses to figure out what factors influence older adults' willingness to seek medical help for COVID-19. By recognizing these factors, healthcare leaders may be able to make recommendations and suggestions on how to encourage older adults to seek help and overcome barriers. Social stigma, negative attitudes against COVID-19 prevention measures, and testing discrimination if diagnosed with COVID-19 were all major barriers identified during the pandemic. As a result, gerontological nursing roles include correcting damaging language that can lead to stigma, sharing correct information about the virus, and speaking out against bad behaviors and discrimination. As a result, surveying for the dimensions of social stigma and its impact on health-seeking behaviors could help with early case detection and slow the spread of COVID-19 among older adults (Tomczyk et al., 2021).

Significant of the study

Access to healthcare and utilization of services are both considered critical factors in improving the general health and well-being of the elderly, particularly

during the COVID-19 pandemic. During the pandemic, however, stigma is affecting older people's access to healthcare and use of health services. The COVID-19 pandemic is likely to exacerbate poor health-seeking behavior, as delays in seeking care have been linked to increased morbidity, mortality, and poor health outcomes in older adults. Stopping the social stigma associated with COVID-19 is critical in order to make all communities and their members safer and healthier by encouraging appropriate health behaviors. Identifying the truths about COVID-19 and spread them with others in the communities can help to remove the stigma connected with it. (Peek et al., 2020; Abdulkareem et al., 2020).

Aim of the study

The present study aimed to determine the relationship between COVID-19 associated social stigma and health seeking behaviors among older adults.

Research objectives;

Assess the COVID-19 associated social stigma among older adults.

Assess the health seeking behaviors among older adults.

Explore the relationship between COVID-19 associated social stigma and health seeking behaviors among older adults.

Examine the correlates of COVID-19 associated social stigma and health seeking behaviors among older adults.

Research questions:

What is the degree of COVID-19 associated social stigma among older adults?

What is the level of health seeking behaviors among older adults?

What is the relationship between COVID-19 associated social stigma and health seeking behaviors among older adults?

What are the correlates of COVID-19 associated social stigma and health seeking behaviors among older adults?

Materials And Method

Materials

Design: The study followed a descriptive correlational research design.

Setting: The study was carried out at Farouk hospital outpatient clinics, affiliated to the Ministry of Health, Alexandria Governorate, Egypt. The hospital comprised several outpatient clinics that include different specialties such as; dentition, ophthalmology, and diabetic clinics. The clinics work from Saturday to Thursday from 8 a.m. to 12 p.m.

Subjects: a convenience sample of 170 older adults from the selected setting who aged 60 years and more, able to communicate effectively, and accepted to participate in the study were included.

The size of the study sample was calculated using the Epi info V. 7.0 program based on the following statistical parameters ; Population size: 280, expected frequency: 50%, acceptable error: 5%, confidence coefficient: 95%, minimum sample size = 163.

Tools:

In order to collect the necessary data, three tools were used.

Tool I: Older adults' socio-demographic characteristics and health profile structured interview schedule:

This tool was developed by the researchers to assess the older adults' socio-demographic characteristics and health profile data. It included two parts:

- **Part 1:** Socio-demographic data of the study subjects such as; age, sex, social status, educational level, occupation prior to retirement, monthly income, and living style.

- **Part 2:** health profile of the study subjects such as; health history of chronic illnesses and previous infection with COVID-19, or other family members' infection with it.

Tool II: COVID-19 associated social stigma among older adults structured interview schedule: This tool was developed by the researchers after reviewing the related literature (Fischer et al.,2020;) to assess the COVID-19 associated social stigma among older adults. It consisted of 37 items covering 3 dimensions of COVID-19 associated social stigma as follows;

1- Patient related social stigma (16 items) that included the discriminatory behaviors against older adults of COVID-19 and stigmatized attitude towards them. It included items such as being uncomfortable to eat, sit, work, or to visit.

2- Disease related social stigma (13 items) this domain focused on stigmatized attitude about COVID-19 disease itself. For example, it included items such as viewing the disease as a punishment from God for the individuals' bad behaviors.

3- Treatment related social stigma (8 items) which concerned with older adults' stigmatized attitude about the treatment and management of COVID-19.

Older adults indicated the extent to which they agree or disagree with each statement on a 3-point Likert scale, scoring from disagree (1), slightly agree (2), strongly agree (3). The researchers chose to use the 3-point Likert scale in order to facilitate the attainment of accurate answers from the older adults and void their dispersal. The total score summed and the higher the score, the severe the social stigma. Also, the total score classified into 3 categories as follows;

Mild degree of social stigma: score of 37 to 73.

Moderate degree of social stigma: score of 74 to 92.

Severe degree of social stigma: score of 93 to 111.

Tool III: Older adults' health seeking behaviors structured interview schedule:

This tool is a 17 items that developed by the researchers after reviewing the related literatures (Bretherton, 2021; Noorizki et al., 2021) to assess the health seeking behaviors among older adults. It required the older adult

to indicate the extent to which they agree or disagree with each health behaviors on a 3-point Likert scale, scoring from disagree (1), slightly agree (2), strongly agree (3). The score was reversed for the negative questions. The total score summed and the higher the score, the higher level of health seeking behaviors. Also, the total score classified into 3 categories as follows;

Low level of health seeking behaviors: score of 17 to 33.

Moderate level of health seeking behaviors: score of 34 to 42.

High level of health seeking behaviors: score of 43 to 51.

Method

1- Permissions were obtained from the responsible authorities (Faculty of Nursing, Ministry of health and the Head of selected setting) to carry out the study.

2- Tool I, older adults' socio-demographic characteristics and health profile structured interview schedule, was developed by the researchers to assess the older adults socio-demographic and health profile data.

3- Tool II, COVID-19 associated social stigma among older adults structured interview schedule and tool III, older adults' health seeking behaviors structured interview schedule tested for content validity by 5 experts in the related fields (3 professors of Gerontological Nursing and 2 professors of community health Nursing). Also, they were tested for reliability by the researchers using Cronbach coefficient alpha test ($r=0.83$, $r=0.80$ respectively).

5-A pilot study was carried out on 10% of the study sample (17 of older adults) selected from the study setting to assess the clarity and feasibility of the study tools. They were not included in the study sample.

Data collection:

6- Each study older adult who fulfilled the study inclusion criteria was interviewed individually in the waiting area to collect the necessary data.

7- For data collection, the study sample was classified equally in-between the different outpatient clinics that present at the selected setting (3 clinics), around 57 older adults were selected from each clinic.

8- The interview time ranged from 20 to 30 minutes for each study subject. The researchers could hold interview with 10 to 12 study subjects per day.

9- Data collected by the researchers through attending the selected setting 3 days per week. Data collection needed 5 weeks to be completed.

10- The researchers followed the COVID-19 related precautions measures such as wearing face masks and keeping the appropriate social distance and encouraged the study subjects to do so.

14- For statistical analysis, SPSS version 20 was used and the level of significance was set as ≤ 0.05 level.

Ethical considerations:

An informed verbal consent was obtained from each study subjects included in the study after explanation of

the study purpose. Anonymity and privacy of the study subjects were maintained and confidentiality of the collected data was assured. The desire of the study subjects to withdraw from the study at any time was respected.

Statistical analysis:

After the data were entered into the computer, they were analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp). Qualitative data was described by number and percent. To verify the normality of distribution, Kolmogorov-Smirnov test was used. Mean and standard deviation were used to describe quantitative data. Significance of the obtained results was judged at the 5% level. Mann Whitney test, Kruskal Wallis test, and Pearson coefficient were used in the present study.

Results:

Table 1: illustrates the distribution of the study subjects according to their sociodemographic characteristics. The table shows that females study subjects constituted 52.9% of the study subjects. The study subjects' age ranged from 60 to 80 years with a mean age of 65.09 ± 4.12 . Study subjects who were married, able to read and write, and housewives presented by 58.9%, 32.3%, 44.1% respectively of the study sample. Regarding, current work status, 66.5% of the study subjects reported that they did not have current work. Monthly income was reported to be adequate by 94.1% of the study subjects. Also, the table illustrates that 58.9%, 84.1% of the study subjects lived in urban area and lived with their families respectively.

Table 2: indicates the distribution of the study subjects according to their health profile. The table shows that 55.8% of study subjects had history of covid-19 infection, 85.3% history of other family infection with covid-19. Also, the table indicates that hypertension prevails among 76.4% of the study subjects followed by osteoarthritis 29.4%, then diabetes mellitus 25.2%.

Table 3: shows the distribution of the study subjects according to covid-19 related social stigma. The table indicates that 62.9%, 58.8% of the study subjects showed agreement that they feel uncomfortable when they sit next to corona patient in transportation, or eating food with him or food he has prepared respectively. However, 84.7% and 87.1% of the study subjects reported disagreement that corona patient is a bad person or he did something wrong that deserve punishment respectively. Also, 68.2% of the study subjects did not think that corona patient becomes an outcast from those around him. The mean percent score of covid-19's patient related social stigma domain is 41.05 ± 20.26 . For illustration, the study subjects showed mild degree social stigma 54.7%, moderate degree stigma 39.4%, and severe degree stigma 5.9% against the corona virus patients.

Concerning stigma specifically against covid-19 disease, the table indicates that 44.7% of the study subjects agreed and 43.5% slightly agreed that corona disease is a calamity from God. Moreover, 50.0% of the

study subjects agreed and 47.1% slightly agreed that corona disease causes financial and economic loss to members and society. Whereas, 75.9%, 70.0% of the study subjects showed disagreement about that corona virus is a shameful disease or telling the others about being infected with coronavirus is a big fault respectively. The mean percent score of disease related social stigma domain was 45.66 ± 16.27 . Among the study subjects, 62.4% showed mild degree of social stigma, 30.6% moderate, and 7.1% severe degree of social stigma against the corona disease itself.

In relation to the covid-19 treatment related stigma, 55.3% of the study subjects agreed that corona treatment creates a public stigma against health workers such as doctors or nurses who involved in care of corona patient. Moreover, 45.9% of the study subject agreed and 52.4% slightly agreed that entering the isolation hospital and being away from the family is difficult and frightening experience. While, 47.6% of the study subjects disagreed that home isolation for corona patients causes problems with neighbors. The mean percent score of covid-19 treatment related stigma domain was 55.40 ± 14.23 . The study subjects showed mild 20.6%, moderate 65.9%, and severe degree 13.5% of social stigma against the corona virus treatment.

The table explains that the study subjects mainly show greater social stigma against the treatment of covid-19, 55.40 ± 14.23 , followed by social stigma against the disease itself 45.66 ± 16.27 , then social stigma against the corona virus patient, 41.05 ± 20.26 . In relation to the mean percent score of the total COVID-19 associated social stigma, the study subjects scored 45.77 ± 15.86 . Also, 63.5% showed mild, 31.8% moderate and 4.7% severe degree of covid-19 related social stigma in general.

Table 4: illustrates the distribution of the study subjects according to their health seeking behaviors. The table shows that the study subjects reported a high mean percent score of health seeking behaviors, 71.73 ± 9.22 indicating that they have high level of health seeking behaviors in general. For illustration, 68.8% of them showed moderate health seeking behaviors and 31.2% showed high level of health seeking behaviors. For example, 91.8% of them reported that they would go to the doctor as a first step if they thought that they had coronavirus. Furthermore, 85.9% and 84.1% of the study subjects agreed that they confident they will find solutions with the medical team if they suffer from coronavirus and they are well prepared to seek medical help if they have serious respiratory symptoms respectively. In the same context, 75.3% of the study subjects agreed that they take care of their health and value it very much.

Table 5: indicates the relationship between overall covid-19 associated social stigma and personal characteristics of the study subjects. The table shows that the highest mean scores of covid-19 associated social stigma were significantly associated with female sex 49.18 ± 11.18 and not having current work 50.92 ± 12.82 . The differences were highly statistically significant, $P < 0.001$. In the same context, highest mean scores of covid-19 associated social stigma were also significantly associated with certain factors such as, older age group

(75<85 years), 61.58 ± 13.51 , being married 62.46 ± 13.91 , unskilled work 56.76 ± 23.41 , inadequate monthly income 57.54 ± 14.37 , living alone 51.26 ± 14.70 , and not having history of covid-19 infection of the study subjects 50.46 ± 15.12 . The differences were statistically significant, $P=0.005$, $P=0.011$, $P=0.008$, $P=0.002$, $P=0.038$, $P=0.015$ respectively.

Table 6: shows the relationship between covid-19 health seeking behaviors and personal characteristics of the study subjects. The table shows that females study subjects reported higher mean score of health seeking behaviors 73.49 ± 7.78 than males 70.01 ± 10.20 with statistically significant difference, $U=2956.0$, $P=0.036$. Also, study subjects with higher levels of education, secondary and university levels, reported higher mean scores than others, 77.01 ± 4.71 , 73.38 ± 11.86 respectively. The difference was statistically significant, $H=11.236$, $P=0.024$. In the same context, study subjects who are housewives, those who have adequate monthly income and who have past history of other family members' infection with covid-19 scored the highest mean scores of health seeking behaviors as follows; 73.48 ± 8.69 , 72.15 ± 9.39 , 73.53 ± 10.19 respectively. The differences were statistically significant, $P=0.015$, $P=0.027$, $P=0.027$ respectively.

Table 7: indicates the relationship between covid-19 related social stigma and health seeking behaviors among the study subjects. The table demonstrates that there was a significant positive correlation between patient related social stigma and health seeking behaviors, $r=0.189$, $P=0.013$. This implies that the higher the social stigma against corona patients, the higher the level of health seeking behaviors. However, a significant negative correlation $r=-0.263$, $P=0.001$ was found between social stigma against the corona treatment and health seeking behaviors. This indicated that the greater social stigma against corona treatment the lower the level of health seeking behaviors.

Table (1): Distribution of the study subjects according to their sociodemographic characteristics

Sociodemographic characteristics	No(170)	%
Sex		
Male	80	47.1
Female	90	52.9
Age in years		
60<75	160	94.1
75<85	10	5.9
Min. – Max.	60.0 – 80.0	
Mean ± SD.	65.09 ± 4.12	
Median	65.0	
Social status		
Married	100	58.9
Widow	65	38.2
Divorced	5	2.9
Educational level		
Illiterate	32	18.8
Read and Write	55	32.3
Basic Education	50	29.4
Secondary	11	6.4
University	22	12.9
Occupation prior to retirement		
House Wife	75	44.1
Employee	63	37.1
Skilled Worker	29	17.1
Unskilled worker	3	1.7
Current work status		
No	113	66.5
Yes	57	33.5
Monthly income		
Adequate	160	94.1
Inadequate	10	5.9
Place of residence		
Urban	100	58.9
Rural	70	41.1
Living style		
Family	143	84.1
Alone	27	15.9

Table (2): Distribution of the study subjects according to their health profile

Health profile	No(170)	%
History of infection with COVID-19		
Yes	95	55.8
No	75	44.2
History of other family member's infection with COVID-19		
Yes	145	85.3
No	25	14.7
Chronis illnesses #		
Hypertension	130	76.4
Osteoarthritis	50	29.4
Diabetes Mellitus	43	25.2
Heart diseases	30	17.6
Respiratory disorders	28	16.4
Gastrointestinal disorders	18	10.5

More than one answer

Table (3): Distribution of the study subjects according to Covid-19 associated social stigma

Covid-19 associated social Stigma (n = 170)	Disagree		Slightly Agree		Agree	
	No.	%	No.	%	No.	%
1-Patient –Related Stigma						
1. I feel uncomfortable when sitting next to corona patient in transportation	1	0.6	62	36.5	107	62.9
2. I feel uncomfortable in eating food with corona patient or food he made.	5	2.9	65	38.2	100	58.8
3. I think corona patient will not be able to return to his full normal life easily	71	41.8	39	22.9	60	35.3
4. I feel uncomfortable if corona patient works with me or a family member	40	23.5	72	42.4	58	34.1
5. I think he's a bad person	144	84.7	16	9.4	10	5.9
6. I would refrain from visiting previously corona infected persons	67	39.4	58	34.1	45	26.5
7. Corona patient feels ashamed	87	51.2	68	40.0	15	8.8
8. I think the corona patient did something wrong that deserves punishment	148	87.1	13	7.6	9	5.3
9. A Corona patient must feel guilty because he can transmit the infection to his family	52	30.6	81	47.6	37	21.8
10. I think a corona patient is an unclean person	54	31.8	90	52.9	26	15.3
11. I think the corona patient is a careless person	78	45.9	87	51.2	5	2.9
12. I will be afraid if my neighbor gets Corona	64	37.6	89	52.4	17	10.0
13. If one of my neighbors is infected, I will avoid dealing with his family	36	21.2	90	52.9	44	25.9
14. I think that one of the reasons for the Corona patient's anxiety is that, if he tells some people around him, they will inform others.	43	25.3	66	38.8	61	35.9
15. Corona patients should be buried in special cemeteries only for them	113	66.5	37	21.8	20	11.8
16. I think a corona patient becomes an outcast from those around him	116	68.2	36	21.2	18	10.6
Mean % score 41.05 ± 20.26	Mild (54.7%), Moderate (39.4%), Severe (5.9%)					
2-Disease Related Stigma I think that						
17. The main cause of Corona disease is people's misbehavior	39	22.9	79	46.5	52	30.6
18. Corona disease is a calamity from God	20	11.8	74	43.5	76	44.7
19. Individuals who infected with Coronavirus must avoid telling others.	85	50.0	75	44.1	10	5.9
20. Telling others about being infected with Coronavirus is a big fault	119	70.0	43	25.3	8	4.7
21. Corona disease causes bad reactions from people towards the patient	43	25.3	111	65.3	16	9.4
22. Corona disease causes loss of family social relations	36	21.2	118	69.4	16	9.4
23. Corona patients should be careful in choosing whom they will inform about their infection	38	22.4	115	67.6	17	10.0
24. Coronavirus is considered a shameful disease	129	75.9	31	18.2	10	5.9
25. Corona disease causes loss of friendship with some people	76	44.7	77	45.3	17	10.0
26. Corona disease creates a state of fears within the family and neighborhoods	26	15.3	77	45.3	67	39.4
27. Corona disease will leave several bad health outcomes after recovery	43	25.3	73	42.9	54	31.8
28. Corona disease causes financial and economic loss to members and society	5	2.9	80	47.1	85	50.0
29. I hate to speak about Corona disease	31	18.2	69	40.6	70	41.2
Mean % score 45.66 ± 16.27	Mild (62.4%), Moderate (30.6%), Severe (7.1%)					
3- Treatment Related Stigma I think that						
30. Corona treatment requires staying in the hospital for long time	21	12.4	65	38.2	84	49.4
31. Home isolation for Corona patient causes problems with neighbors	81	47.6	75	44.1	14	8.2
32. Family members or friends may hesitate to serve a Corona patient during home isolation or provide assistance for him.	37	21.8	78	45.9	55	32.4
33. Corona treatment creates a public stigma against health care workers such as doctors or nurses who involved in care of corona patient.	40	23.5	36	21.2	94	55.3
34. If a place designated to treat corona patients is opened nearby, there will be objection from me or from people	43	25.3	73	42.9	54	31.8
35. Vaccines for Corona do not have a value or effect.	48	28.2	81	47.6	41	24.1
36. The results of the Corona treatment is not satisfactory	15	8.8	140	82.4	15	8.8
37. Entering the isolation hospital and being away from the family due to is difficult and frightening experience	3	1.8	89	52.4	78	45.9
Mean % score 55.40 ± 14.23	Mild (20.6%), Moderate (65.9%), Severe (13.5%)					
Overall Total Social Stigma Mean % score 45.77 ± 15.86	Mild (63.5%), Moderate (31.8%), Severe (4.7%)					

Table (4): Distribution of the study subjects according to their health seeking behaviors

Health seeking behaviors (n = 170)	Disagree		Slightly Agree		Agree	
	No.	%	No.	%	No.	%
1. If I think I have the Corona virus, my first step is to go to the doctor	0	0.0	14	8.2	156	91.8
2. If I suffer from Corona disease, I am confident that I will find a solution with the medical team	0	0.0	24	14.1	146	85.9
3. I intend to conduct a periodic medical examination to control the chronic diseases that I suffer from to avoid Corona infection	26	15.3	52	30.6	92	54.1
4. If I suffer from Corona disease, it is not right for me to deal alone and I should seek medical help and supervision.	5	2.9	49	28.8	116	68.2
5. If I suffer from Corona disease, the time and expenses required to treat corona will be a problem for me	22	12.9	118	69.4	30	17.6
6. If I suffer from Corona disease, I must deal with the situation myself at first, and obtaining medical advice is the last resort.	19	11.2	24	14.1	127	74.7
7. I am fully prepared to seek medical help if I have serious respiratory symptoms	6	3.5	21	12.4	143	84.1
8. If I suffer from Corona disease, I am never embarrassed if my friends or health team members know that I suffer from corona	1	0.6	59	34.7	110	64.7
9. I will feel guilty for myself if I can't take care of my health	3	1.8	42	24.7	125	73.5
10. I take care of my health and I value it very much	5	2.9	37	21.8	128	75.3
11. If I suffer from Corona disease, I am not afraid of treatment or isolation in the hospital if necessary	25	14.7	67	39.4	78	45.9
12. If I suffer from Corona disease, I will not hide from my family	17	10.0	33	19.4	120	70.6
13. I never depend on others, such as family members, to receive health care	53	31.2	61	35.9	56	32.9
14. I'm ready to take the necessary Corona vaccine to protect myself	14	8.2	96	56.5	60	35.3
15. I follow the media to know the disease developments and its treatment	10	5.9	78	45.9	82	48.2
16. I would like to get a medical examination if I worry about myself	0	0.0	74	43.5	96	56.5
17. Corona virus is not like a health problem that can be solved with time without medical intervention	53	31.2	37	21.8	80	47.1
Levels of health seeking behaviors	No.		%			
Low level of health seeking (17–33)	0		0.0			
Moderate level of health seeking (34–42)	117		68.8			
High level of health seeking (43–51)	53		31.2			
Overall Total health seeking behaviors Mean % score	71.73 ± 9.22					

Table (5): Relation between Overall Covid-19 associated social stigma and personal characteristics of the study subjects (n = 170)

Personal characteristics	Overall social stigma	Test of sig.	P
	Mean \pm SD.		
Sex			
Female	49.18 \pm 11.18	U=2557.0*	<0.001*
Male	42.44 \pm 18.85		
Age in years			
60 <75	45.09 \pm 15.63	U=213.50*	0.005*
75 < 85	61.58 \pm 13. 51		
Social status			
Married	62.46 \pm 13.91	H=9.093*	0.011*
Widow	45.39 \pm 15.17		
Divorced	44.57 \pm 15.68		
Educational level			
Illiterate	49.12 \pm 17.77	H=3.534	0.473
Read and Write	46.12 \pm 14.43		
Basic Education	45.95 \pm 15.64		
Secondary	38.08 \pm 19.27		
University	45.30 \pm 16.34		
Occupation prior to retirement			
Unskilled worker	56.76 \pm 23.41	H=11.957*	0.008*
House Wife	49.85 \pm 11.58		
Employee	43.80 \pm 16.77		
Skilled Worker	41.34 \pm 18.54		
Current work status			
No	50.92 \pm 12.82	U=1448.50*	<0.001*
Yes	35.56 \pm 16.45		
Monthly income			
Inadequate	57.54 \pm 14.37	U=808.0*	0.002*
Adequate	44.29 \pm 15.45		
Place of residence			
Rural	46.70 \pm 16.41	U=3120.0	0.163
Urban	45.04 \pm 15.46		
Living style			
Alone	51.26 \pm 14.70	U=1644.0*	0.038*
Family	44.55 \pm 15.90		
History of infection with COVID-19			
No	50.46 \pm 15.12	U=2736.50*	0.015*
Yes	42.49 \pm 15.60		
History of other family member infection			
No	51.13 \pm 21.66	U=1653.0	0.066
Yes	44.62 \pm 14.15		

U: Mann Whitney test

H: H for Kruskal Wallis test

*: Statistically significant at $p \leq 0.05$

Table (6): Relation between Overall health seeking behaviors and personal characteristics of the study subjects (n = 170)

Personal characteristics	Overall health seeking behaviors	Test of sig.	p
	Mean ± SD.		
Sex			
Female	73.49 ± 7.78	U= 2956.0*	0.036*
Male	70.01 ± 10.20		
Age			
60 < 75	71.58 ± 9.17	U= 372.50	0.111
75 < 85	75.21 ± 10.45		
Social status			
Divorced	76.14 ± 6.48	H= 2.343	0.310
Married	71.87 ± 9.51		
Widow	70.70 ± 8.92		
Educational level			
Illiterate	72.94 ± 3.60	H= 11.236*	0.024*
Read and Write	71.81 ± 9.75		
Basic education	69.67 ± 9.64		
Secondary education	77.01 ± 4.71		
University	73.38 ± 11.86		
Occupation prior to retirement			
House Wife	73.48 ± 8.69	H= 10.476*	0.015*
Skilled Worker	72.79 ± 7.40		
Employee	70.31 ± 9.96		
Unskilled worker	58.82 ± 5.09		
Current work status			
No	72.72 ± 9.20	U= 2771.50	0.128
Yes	69.76 ± 9.03		
Monthly income			
Adequate	72.15 ± 9.39	U= 998.50*	0.027*
Inadequate	68.42 ± 7.13		
Place of residence			
Rural	72.63 ± 9.98	U= 3269.0	0.344
Urban	71.02 ± 8.57		
Living style			
Family	71.90 ± 8.95	U= 2091.0	0.792
Alone	70.97 ± 10.49		
History of infection with COVID-19			
No	73.36 ± 7.87	U= 3328.0	0.576
Yes	70.59 ± 9.95		
History of other family member infection			
Yes	73.53 ± 10.19	U= 1572.0*	0.027*
No	70.97 ± 9.04		

U: Mann Whitney test

H: H for Kruskal Wallis test

*: Statistically significant at $p \leq 0.05$

Table (7): Correlation between Covid-19 associated social stigma and health seeking behaviors among the study subjects

Social stigma	Health seeking behaviors	
	R	P
1-Patient –Related Stigma	0.189*	0.013*
2-Disease Related Stigma	-0.033	0.667
3- Treatment Related Stigma	-0.263*	0.001*
Overall Social Stigma	0.042	0.590

r: Pearson coefficient

*: Statistically significant at $p \leq 0.05$

Discussion:

Covid-19 is a classic example of a disease with medical as well as social implications. Several factors contribute to people's reluctance to seek medical help, the most important of which is the disease's social stigma (Asadi-Aliabadi et al.,2020). The aim of this study was to determine the relationship between COVID-19 associated social stigma and health seeking behaviors among older adults.

The present study result showed that study subjects reported relatively low mean percent score of social stigma in general. In other words, nearly two thirds of them reported mild degree of social stigma against covid-19 (table 3). This may be due to the fact that older adult may exposed to various psychosocial changes and experienced a lot of stressors in their life. Despite these changes and stressors negatively impacted on them; older adults may have protective skills and power that may serve as resources to buffer against the negative life stressors. Acceptance, experience and satisfaction are the mechanisms that may play a big role in how older adults view the pandemic and how to react to it. Also, health policies put older adults in place of priority to protect them and mass media posted valid information about covid-19 and its preventive measures. All these factors may limit the stigmatized attitude towards COVID-19 among older adults. This result is in line with the studies conducted by Wu & McGoogan (2020); Zhou et al.(2020), who found that COVID-19 pandemic may have declared the start of a new era of care for the elderly, stating that the use of telecommunication technology and more home-based programs helped older adults cope with the epidemic. As a result, older adults' perceptions of COVID-19 may shift. On the contrary, Jordan et al. (2020) discovered that COVID-19-related deaths are disproportionately common in older adults due to underlying health conditions, making them more vulnerable to such viruses. As a result, it's unsurprising that any infected person is viewed as a threat, particularly by older adults, potentially increasing their sense of social stigma.

According to the present study finding, the study subjects reported a high mean percent score of health seeking behaviors in general and more than two third of them reported moderate health seeking behaviors

(table 4). This can be justified by the fact that, pathological changes that occur in old age like frailty, chronic illnesses, limited functions, and psychological distress may cause study subjects to seek health information and medical interventions to address their ailments and maintain better health status and wellbeing. Indeed, the widespread and effect of covid-19 pandemic may increase the studied subjects' inclination to seek health care to protect themselves. This result is congruent with the study conducted by Bastani et al. (2021) which revealed that during the COVID-19 pandemic, digital health services were identified as major issues that influenced and facilitated older adults' seeking of healthcare. On the contrary, Arthur-Holmes et al. (2020) found that many older adults changed their health-seeking behaviour by staying at home and relying on informal healthcare, such as traditional therapies and over-the-counter medicines for self-treatment or immune system boosting. In addition, according to a study conducted by Schuster et al. (2021), older adults reported cancelling or avoiding medical care during the first months of the pandemic because they were afraid of contracting infection from clinics.

The present study result revealed that females study subjects reported significantly greater social stigma than males (table 5). This perhaps because females study subjects may suffer more because of covid-19. This is evident from their increased responsibilities towards protecting themselves and their families through providing suitable home environment, food, and health care for others. In addition, when they heard about number of deaths and infected cases, that mostly touched their feelings, they may look negatively at the disease. Females usually react emotionally with stressors. This result is agreed with what reported by Bhattacharya et al (2021) in their study, that fear of the unknown has engulfed humankind throughout history. Humans have a tendency to distance themselves from the unknown, especially in the aftermath of the COVID-19 pandemic. Females are more likely than males to experience fear.

With reference to age, study subjects of older age reported higher social stigma against covid-19 than those who at younger age as the present study result revealed, table (5). This can be illustrated by what always repeated at formal and informal media that older

adults at greater risk to be infected and had higher death rates due to covid-19. Hearing that by the elders may cause them to be anxious and view this pandemic as a threat to their life, and causative factor for death. They connected it with negative outcomes and viewing pandemic in a negative way. This result is congruent with a study performed by Bagcchi (2020) which found a positive significant association between social stigma and advanced age. In the same context, (Chopra & Arora, 2020) COVID-19, he claimed, is exacerbating entrenched ageism, such as age-based discrimination and stigmatisation of the elderly. The emergence of remarks and hate speech directed at older people in public discourse and on social media as expressions of inter-generational resentment is concerning. In contrast, Nursalam et al. (2021) discovered that older adults had low social stigma against COVID-19 because most of the elderly had resigned and were waiting for death. They spiritually prepared themselves for God and the end of the world.

In the same context, the present study result showed those who lived alone reported higher social stigma against covid-19 than others (table 5). This can be interpreted that these study subjects may lose the necessary support to deal with this pandemic. They may be afraid of infection, where they will not find someone to take care of them. Perhaps, they are afraid of death alone due to covid-19. So, they may have greater social stigma against this virus than others. This result is compatible with a study carried out by Yuan et al. (2021) which found that COVID-19-related social stigma is commonly experienced among those who live alone.

The present study result indicates that studied subjects who were unskilled workers, had a lower level of education either illiterate or read & write, had no current job, as well as those who reported that their monthly income was inadequate, they all reported higher social stigma than others (table 5). This can be justified by the fact that low educational levels and low monthly income may limit the study subjects' chance to get the correct information about the disease and how to deal with it, which makes them stigmatize the disease with wrong things about it. They also may think about the financial burden they will face if they get the disease. This result is consistent with a study conducted by Huang et al. (2021) which found that The prevalence of social stigma was higher among older adults with low and middle-income than among those with high-income, with a statistically significant difference. Individuals with lower educational levels exhibited a similar trend in the prevalence of social stigma when compared to those with higher educational levels.

According to the present study result, study subjects who did not have past history of covid-19 infection or other family members' infection reported greater stigma against covid-19 than others (table 5). This can be interpreted by that those study subjects may did not have the actual experience of the disease course or its treatment, which might help them to correct false ideas about the disease. In addition, spreading of false news and rumors in social media may support any

negative ideas and views of the disease. This result is in line with study done by Germain & Yong (2020) which revealed that the news of insufficient equipment for the care of COVID-19 patients, such as intensive care unit (ICU) beds, bed-side oxygen supply, pulse oximeters, and ventilators, adds to the stigma associated with COVID-19.

The present study result showed that females and housewives studied subjects reported significant higher mean score of health seeking behaviors than males (table 6). This may be due to the role of females study subjects in caring for all family members from earlier years to old age. So, maintaining her health is essential to fulfill her role towards elderly husband, children, and grandchildren. This result is congruent with the study performed by Rodgers & Zveglic (2021) which showed that women were more likely than men to report illnesses or problems, and they were also more likely to seek treatment. The difference was significant both in terms of meaning and statistical significance. On the contrary, according to a study by Pham et al. (2020), males seek healthcare more frequently than females, possibly because females find it more difficult to access health care and thus neglect their health.

Concerning educational level, study subjects with higher educational levels and those who had adequate monthly income reported higher mean scores of health seeking behaviors according to the present study result (table 6). This can be interpreted that the study subjects with higher levels of education may have the necessary knowledge and awareness to make appropriate practices and decision concerning their health. Also, the availability of a sufficient monthly income can support their decisions in order to seek the necessary health care services at the appropriate times especially in times like the pandemic. In addition, during this pandemic period most doctors' clinics used electronic application to book an appointment with a physician. So, only the educated person will be able to use this technology and to deal with it. This result is compatible with study conducted by Assari & Bazargan (2020) which revealed that education considered an important factor for seeking healthcare and maintaining health.

Study subjects who did not have past history of infection with covid-19 reported higher mean scores of health seeking behaviors according to the present study result, (table 6). This result may seem to be logic that study subjects who had high level of health seeking behaviors may have the awareness and abilities to protect themselves and their family members. Also, older adults who didn't pass the experience of covid-19 infection may have sort of fear and anxiety about the health crisis and deterioration of the disease. So, they become keener for seeking healthcare than before to protect themselves. This result is in line with the study carried out by Ahn et al. (2020) which found that current COVID-19 pandemic has provided empirical evidence of its effects on changing unhealthy behaviors and increasing healthcare seeking among older adults. In contrast, a study conducted by Asnakew et al. (2020)

found that older adults with a history of COVID-19 infection were more willing to seek medical help because of their experience with disease symptoms and fear of health deterioration.

The present study also indicated a positive correlation between social stigma against COVID-19 patient and health seeking behaviors among the study subjects (table 7). This can be illustrated by that study subjects who had stigmatized attitude towards the patients with covid-19 may seek medical help and consultation in order to avoid being in the same place or situation of covid-19 patients. For illustration they do not like to be seen by others around them as they see infected patients with COVID-19. This result is consistent with a study performed by Dwinantoaji & Sumarni (2020) which revealed that COVID-19 has declared a public health and infectious disease emergency. As a result, older adults see it as a threat and a stigma, and they are motivated to seek appropriate healthcare.

In the same context, the present study showed a negative significant correlation between the stigma against treatment of Covid-19 and health seeking behaviors among the study subjects (table7). This can be interpreted by that study subjects who had social stigma about COVID-19 treatment may have negative stereotypes about it and did not see any benefits of treatment for the covid-19 patient's or seeking medical interventions. As a result they may go to doctors very late. This result is consistent with a study conducted by Asadi-Aliabadi et al.(2020) which found that social stigma against COVID-19 can harm the patients and their relatives because it can be a barrier for effective treatment and seeking health care. In addition, social stigma against COVID-19 could make it difficult to identify and monitor patients, having a significant negative impact on the epidemic's control and management.

Conclusion

Based on the findings of the present study, it is possible to conclude that study participants had a slightly low mean percent score of COVID-19 associated social stigma in general. The most stigmatized attitude among the study subjects was towards the treatment of COVID-19, while the lowest one was towards the COVID-19 patient. The COVID-19 associated social stigma among the study subjects was significantly associated with their personal characteristics such as: female sex, older age, being married, unskilled work, having no current work, inadequate monthly income, living alone, and no history of COVID-19 infection.

Concerning the study subjects' health seeking behaviors, it is possible to conclude that study participants had high mean percent score of health seeking behaviors in general, which is significantly associated with their personal characteristics such as: female sex, high educational level, being housewives, adequate monthly income, and history of other family members' infection with COVID-19.

According to the present study results, social stigma against patients with COVID-19 was significantly and positively correlated with health seeking behaviors among the study subjects. This implies that study subjects who had a more stigmatized attitude towards COVID-19 patients greatly sought health care. In contrast, social stigma against COVID-19's treatment was significantly and negatively correlated with health seeking behaviors among the study subjects. This implies that study subjects who had more stigmatized attitude towards COVID-19's treatment asked less for health care.

Recommendations

Based on the results of the present study, the following recommendations are suggested:

Gerontological nurses should help older adults to understand the nature of COVID-19 disease, its presentations, ways of transmission, and treatment options.

Gerontological nurses should encourage older adults to take effective and practical steps to keep themselves safe by seeking medical help.

Gerontological nurses should speak out against social stigma and negative stereotypes and disseminate accurate information about the disease from credible, official sources.

It's crucial for gerontological nurses to assess COVID-19 associated social stigma and its correlates among older adults to control these variables to enhance positive health behaviors toward COVID-19.

Gerontological nurses should assess health-seeking behaviors and their correlates among older adults to control these factors for early identification of COVID-19 geriatric patients and to provide proper, effective, and on-time management for them.

The further researches in this field could be:

Effect of nursing educational program on the practices of older adults with stigmatized attitude towards COVID-19.

Health seeking behaviors among older adults post COVID-19 infection versus before it.

Experience of older adults with COVID-19 infection: a qualitative research study.

References

- Abdulkareem, S.A., Augustijn, E.W., Filatova, T., Musial, K., & Mustafa, Y.T. (2020).** Risk perception and behavioral change during epidemics. *Public Health Journal*, 2(3),15-28.

Ahn, S., Kim, K., & Koh, J. (2020). Changes in healthcare utilization, spending, and perceived health during COVID-19. *British Medical Journal*, 2 (3),27-38.

Arthur-Holmes, F., Akaadom, M., Agyemang-Duah, W., Abrefa Busia, K., & Peprah, P. (2020). Healthcare Concerns of Older Adults during the COVID-19 Outbreak in Low- and Middle-Income Countries: Lessons for Health Policy and Social Work. *Journal of gerontological social work*, 63(6), 717–23.

Asadi-Aliabadi, M., Tehrani-Banihashemi, A., & Moradi-Lakeh, M. (2020). Stigma in COVID-19: A barrier to seek medical care and family support. *Medical journal*, 34, 98- 112.

Asnakew, Z., Asrese, K., & Andualem, M. (2020).Community risk perception and compliance with preventive measures for COVID-19 pandemic. *Risk Management Health Policy Journal*,13(2), 87-97.

Assari, S., & Bazargan, M. (2020). Minorities' diminished returns of educational attainment on hospitalization risk: National health interview survey (NHIS). *Hospital Practice Research*, 4(3),86-91.

Bagcchi, S. (2020). Stigma during the COVID-19 pandemic. *The Lancet Infectious Diseases Journal*, 20(7), 782-90.

Bastani, P., Mohammadpour, M.,& Samadbeik, M.(2021). Factors influencing access and utilization of health services among older people during the COVID – 19 pandemic: a scoping review. *Public Health Journal*, 2 (2),45-60.

Bhattacharya, P., Banerjee, D., & Rao, T.S. (2021).The “Untold” Side of COVID-19: Social Stigma and Its Consequences in India. *Indian Journal of Psychological Medicine*,42(4),82-86

Bretherton, S. J. (2021). The Influence of Social Support, Help-Seeking Attitudes and Help-Seeking Intentions on Older Adults use Health Services. *The International Journal of Aging and Human Development*, 2,25-38.

Buheji, M., Jahrami, H., & Dhahi, A. (2020). Minimizing stress exposure during pandemics similar to COVID-19.

Psychology and Behavioral Science International Journal, 10, 9-16.

Chopra, K. K., & Arora, V. K. (2020). Covid-19 and social stigma: Role of scientific community. *Public Health Journal*, 67(3), 284-85.

Dibartolo-cordovano, R., Lopez, J.M., Torres, C., & Thakur, K.T.(2020). A survey of the knowledge, attitudes and practices on Covid-19. *Public Health Journal*,18, 98-120.

Dwinantoaji, H., & Sumarni, D. W. (2020). Human security, social stigma, and global health: the COVID-19 pandemic. *Journal of the Medical Sciences*, 52(3), 1028-45.

Fischer, L.S., Mansergh, G., Lynch, J., & Santibanez, S. (2020). Addressing Disease-Related Stigma during Infectious Disease Outbreaks. *Disaster Medical Public Health Journal*, 13(5),989-94.

Freeman, S.,Roberto, K. J., Johnson, A. F., & Rauhaus, B. M. (2020). Stigmatization and prejudice during the COVID-19 pandemic. *Global Health Journal*, 2(3), 64-78.

Germain, S., & Yong, A. (2020). COVID-19 highlighting inequalities in access to healthcare. *Family Health Journal*,28(3),1-10.

Ghazavi Khorasgani, Z., Rizi, H., & Mokarian, F. (2020) Health information-seeking behavior of Covid-19 patients. *Journal Education Health Promotion*,7, 138-50.

Hampson, M.E., Watt, B.D.,& Hicks, R.E.(2020). Impacts of stigma and discrimination in the workplace on people with covid-19. *British Medical Journal*, 2, 28-37.

Huang, X.L., Yan, W., & Yuan, K.(2021). A systematic review and meta-analysis on the prevalence of stigma in infectious diseases, including COVID-19. *Psychiatry Journal*, 2 (4),87-100.

Jones, D.S. (2020). History in a crisis—Lessons for Covid-19. *Nursing England Journal*,3(2), 81-87.

Jordan, E., Peymane, A., & Cheng, K. (2020). Covid-19: Risk Factors for Severe Disease and Death. *British Medical Journal*, 3, 68-76.

- Noorrizki, R. D., Suhanti, I. Y., & Pambudi, K. S. (2021).** Disobeying Government Rules: A Descriptive Study of Intention to Apply Health Protocol during Covid-19. *Social Sciences Journal*,3(4), 215–23
- Nursalam, N., Sukartini, T., Priyantini, D., Mafula, D., & Efendi, F. (2021).** Risk Factors For Psychological Impact And Social Stigma Among People Facing Covid-19. *American Medicine Journal*,11(6), 1022-28.
- Peek, N., Sujan, M., & Scott, P. (2020).** Digital health and care in pandemic times: impact of COVID-19. *Health and Care Informatics Journal*, 2, 27-42.
- Pham, T., Nguyen, N., Chieu To, S. B., & Latkin, C. A. (2020).** Sex Differences in Quality of Life and Health Services Utilization among Elderly People. *International journal of environmental research and public health*, 16, 69-82.
- Qian, X., Ren, R., Wang, Y., Guo, Y., Fang, J., & Wu, Z.D. (2020).** Fighting against the common enemy of COVID-19: a practice of building a community with a shared future for mankind. *Infectious Diseases of Poverty Journal*, 9(2),1-6.
- Ren, S.Y., Gao, R.D., & Chen, Y.L. (2020).** Fear and stigma can be more harmful than the severe acute respiratory syndrome coronavirus 2 in controlling the corona virus disease 2019 epidemic. *World Journal Clinic Cases*, 8,652–67.
- Rodgers, Y., & Zveglich, J. r. (2021).** Gender Differences in Access to Health Care among the Elderly. *Gerontological Nursing Journal*, 38 (2), 59-92.
- Schuster, N.A., de Breij, S., & Schaap, L.A. (2021).** Older adults report cancellation or avoidance of medical care during the COVID-19 pandemic. *Europe Geriatric Medicine*, 12, 1075–83.
- Shahrour, G., Jaradat, D., & Dardas, L. A. (2021).** Barriers related to COVID-19 testing intention. *Public Health Nursing Journal*,3(2),42-60.
- Singh, R., & Subedi, M. (2020).** COVID-19 and stigma: Social discrimination towards older adult and COVID-19 recovered patients. *Asian Journal Psychiatric*, 5(3), 22-31.
- Tomczyk, S., Rahn, M., & Schmidt, S. (2021).** Social Stigma: Association Between Compliance With Behavioral Recommendations, Risk Perception, and Stigmatizing Attitudes During the COVID-19 Outbreak. *Psychology Journal*, 2, 67-81.
- Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., & McIntyre, R.S. (2020).** A longitudinal study behavior of general population during the COVID-19. *Brain Behavior Immunity Journal*, 8(7),40-48.
- Wu, Z., & McGoogan, J. (2020).** Characteristics of and Important Lessons from the Coronavirus Disease (COVID-19) Outbreak. *Journal American Association*,23(13),39-42.
- Yuan, Y., Zhao, Y.J., & Zhang, Q.E. (2021).** COVID-19-related stigma and its sociodemographic correlates. *Global Health Journal*, 17, 54-62.
- Zhou, F., Yu, T., Ronghui, D., Guohui, F., Ying, L., Zhibo, L., & Jie, X. (2020).** Clinical Course and Risk Factors for Mortality of Adult older Inpatients with COVID-19. *Nursing Research Journal*,3(2), 56-68.