Life Satisfaction, Mental Wellbeing and Social Participation Among Elderly Before and During COVID 19 Pandemic

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Abstract

Background: COVID-19 pandemic have enforced numerous restrictions on daily living including social distancing which had a negative effects on life satisfaction, social participation and mental wellbeing. **Aim of the study:** was to assess Life satisfaction, mental wellbeing and social participation among elderly before and during covid 19 pandemic. **Subjects and Method: Research design:** A comparative descriptive design was utilized. **Setting:** Study was conducted in a rural area selected randomly from Sharkia Governorate, Egypt. **Subjects:** A purposive sample composed of 300 elderly who fulfilled the study inclusion criteria. **Tools of data collection:** two tools were used to collect the study data: **Tool I :** A structured interview questionnaire to collect data on demographic characteristics, medical history. **Tool II:** Lifestyle Behaviours Questionnaire which consisted of 3 parts. part1: Short Life Satisfaction questionnaire.part2: The Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS). Part3: Social Participation questionnaire (SPQ). **Results:** Total life satisfaction mean score before covid 19 pandemic was 8.99±.12, compared to 5±2.31 during covid 19 pandemic, the total mean score of mental wellbeing among the studied elderly was 20.95±.52 before covid 19 pandemic compared to 9.63±4.23 during covid 19 pandemic, and the total mean score of social participation among the studied elderly was 16.21±2.15 before covid 19 pandemic compared to be 12.79±1.77 during covid 19 pandemic. **Conclusion:** covid 19 pandemic had a negative effect on the life satisfaction, mental wellbeing and social participation among elderly. **Recommendation:** health education program to the elderly about Life satisfaction, mental wellbeing and social participation.

Keywords

Covid 19, elderly, life satisfaction, mental wellbeing, social participation

Introduction

Population ageing is a global phenomenon. In 2019, there were approximately 703 million older adults worldwide; this number is expected to double by 2050 [1]. the number of elderly people (60 years and over) in Egypt reached 6.8 million, representing 6.7% of the total population. This percentage is expected to rise to 17.9% in 2052 [2].

The COVID-19 pandemic is a global outbreak of coronavirus, an infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) viruses, the first cases of novel coronavirus (nCoV) were first detected in China in December 2019, with the virus spreading rapidly to other countries across the world. This led WHO to declare a Public Health Emergency of International Concern on 30 January 2020, and to characterize the outbreak as a pandemic on 11 March 2020 [3]. Number of COVID 19 Cases worldwide is 655,145,228 million and number of Deaths is 6,662,518 million , and in Egypt number of cases is 515,645 and deaths is 24,613 [4]. Age is the strongest risk factor for severe COVID-19 outcomes [5]. The United States has lost nearly 1.1 million lives to COVID-19, of which about 790,000 are people ages 65 and older. People 65 and older account for 16% of the total US population but 75% of all COVID deaths to date [6].

Life satisfaction, meaning in life and hope are some of the most important factors that affect the individual's thoughts and feelings in situations of danger. [7]. Life satisfaction has been suggested as an important factor for successful ageing and also taken as an indicator of the efficacy in old age. he COVID-19

pandemic and related preventive measures were found to reduce life satisfaction in the general population. [8] .Mental wellbeing is defined as individuals being aware of their own abilities, being able to deal with stressful situations in life, being able to work productively and efficiently, and being beneficial to society. Consequences from social distancing and isolation measures instituted by governments around the world and the neurobiological consequences of the resulting stress and inflammation that may increase vulnerability to mental health issues. [9] . social participation and related activities help maintain healthy lives among the elderly in local communities. However, due to the coronavirus disease 2019 (COVID19) pandemic social participation activities for the elderly ceased in order to secure social distancing. [10]

The American nursing association said nurse leaders are the key to preventing and containing widespread of covid 19 pandemic [11]. Gerontological nurse Advice elderly to have hope that will result in an increase in positive effects and life satisfaction and encourage elderly to perform spirituality/religious practices and strategies related to COVID-19. [12] Nurse instruct elderly to avoid a distressing situation, avoid getting exposed to media coverage too much, to maintain a healthy relationship, get in touch with friends and family members on a regular interval using social media and start thinking positively. [13]. Encourage online social engagement [14]

Significance of the study:

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 [15]. There is insufficient research on the changes in life satisfaction, mental wellbeing and social participation among elderly before and during covid 19 pandemic globally and in Egypt. Consequently, the current study was conducted to assess Life satisfaction, mental wellbeing and social participation among elderly before and during covid 19 pandemic.

Aim of the study:
The aim of the study was:

The current study aimed to assess Life satisfaction, mental wellbeing and social participation among elderly before and during covid 19 pandemic.

Research Questions:

1.What is the level of life satisfaction among elderly before and during COVID19 Pandemic ؟
2. What is the level of mental wellbeing among elderly before and during COVID19 Pandemic؟
3. What is the level of social participation among elderly before and during COVID19 Pandemic ?

Subjects and methods:
Research design:

A comparative descriptive design was used

Study setting:

The current study was carried out in a rural area selected randomly from Sharkia Governorate. (Manshet Abd Elatif Waked). The village of Manshet Abd Elatif Waked is a rural large village in kafer Saker center and made up of 12 very small villages, with a population of elderly of 900.

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 by software Epi-info package, assuming a prevalence of covid 19 among elderly was 51.0% Singhal et al [16] from 900 elderly were residing in Mainsheet Abd Ellatief Wakied, level of confidence

95%, margin of error 5% and power of test were 80%. The sample size was 300 elderly patients.

Tools of data collection:

Two tools were used to collect necessary data:

Tool I: a structured interview questionnaire that was developed by the researchers based on the literature review. which consisted of two parts;

Part (1): It consisted of demographic characteristics of the elderly which includes age, gender, marital status, educational level, current occupation, crowding index, monthly income, the source of income, and living condition.

Part (2): to collect information about the medical history of the studied elderly. It involved questions about chronic diseases (e.g., hypertension, diabetes mellitus, renal diseases, respiratory system diseases, heart diseases, liver diseases and digestive system diseases) and covid 19 infection).

Tool II: Lifestyle Behaviours Questionnaire:

Which include 3 parts:

Part I: Short Life Satisfaction questionnaire:

It is a crisis-oriented short modified questionnaire to assess life satisfaction level among elderly before and during COVID19 Pandemic (Diener et al .[17]

Scoring system:

The answers were given on a three-point Likert scale; disagree scored "1", slightly agree scored "2", agree scored "3". The higher the score the more satisfaction with life. A total score was calculated by summing responses over all 3 items, with possible score ranging from 3 to 9, the mean of total satisfaction score was the cutoff point: 1-4 unsatisfied, 5-9 satisfied.

Part II: The Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS):

Is a short version of the Warwick–Edinburgh Mental Wellbeing Scale (sWEMWBS). to assess Mental Wellbeing among elderly before and during COVID19 Pandemic.

Scoring system:

The answers were given on a three-point Likert scale; never scored "1", sometimes scored "2", all times scored "3". The higher the score the more mental wellbeing. A total score was calculated by summing responses over all 7 items, with possible score ranging from 7 to 21, higher score 60% or more (>12.6) indicates the high mental wellbeing.

Part III : Social Participation questionnaire (SPQ):

Is a crisis-oriented short modified questionnaire to assess social participation before and during a lockdown period.

Scoring system :

The answers were given on a three-point likert scale; never scored "1", sometimes scored "2", all times scored "3". The higher the score the more social participation. A total score was calculated by summing responses over all 10 items, with possible score ranging from 10 to 30, higher score 60% or more (>18) indicates the high social participation.

Content validity& Reliability:

Once prepared, the tools were presented to a panel of 3 experts from the Community Health Nursing Department, Zagazig University, pulmonary medicine department, Zagazig University and community health nursing   Department, ain shams University. They assessed the tools for clarity, relevance, application, and comprehensiveness. This constituted the content validation of tools. All recommended modifications were applied. The reliability of tools was tested by measuring their internal consistency. It demonstrated a good level of reliability with Cronbach's Alpha. In the current study, Cronbach α of Short Life Satisfaction questionnaire was 0. 750, Cronbach α of Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS) was 0.956 and Cronbach α of Social Participation questionnaire (SPQ) was 0.543.

Fieldwork

Once the approval was granted to progress in the study, the researcher began planning a data collection time table. The fieldwork was carried out within the period of six months, starting from the beginning of May 2022 up to the end of October 2022. 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 20 to 30 minutes to answer. The researcher allocated three days per week Monday, Tuesday, and Wednesday) from 3.00 pm to 6.00 PM.

Pilot study:

A pilot study was carried out on 30 older adults from above mentioned setting (Mainsheet Abd ellatief wakied 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 and ethical considerations:

Firstly, the study proposal was approved by the Research Ethics Committee (REC) and Postgraduate Committee of the Faculty of Nursing at Zagazig University (M.D ZU.NUR/185/13/6/2022). Then 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 Manshet Abd Elatif Waked 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 23.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations and medians for quantitative variables. Cronbach alpha coefficient was calculated to assess the reliability of the developed scales through their internal consistency. The McNemar test was used to determine if there are differences on a dichotomous dependent variable. The Friedman test is the non-parametric alternative to the one-way ANOVA with repeated measures. It is used to test for differences between groups when the dependent variable being measured is ordinal. Quantitative continuous data were compared using the non-parametric Mann-Whitney or Kruskal-Wallis tests and paired t test. Qualitative categorical variables were compared using chi-square test. 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. Spearman rank correlation was used for assessment of the inter-relationships among quantitative variables and ranked ones. In order to identify the independent predictors of life style behaviors multiple linear regression analysis was used and analysis of variance for the full regression models was done. Statistical significance was considered at p-value <0.05.

Results:

Regarding the demographic characteristics and medical history of the elderly in the study sample, **Table 1** shows 74.7 % of them were aged between 60 and 69 years, mean age 65.59± 5.85 years. Besides, 52% were male and 71.3% were married. Among the studied elderly, 95.7 % lived with family. Moreover, 52.7% of the studied elderly were having less than or equal two chronic diseases with a mean number of diseases 1.08 ± 1.15 disease, and 70.3% of elderly were not infected with covid 19 and the infected conistitutes (29.7%), the

infected elderly had covid 19 from a year ago (48.3%)

Figure (1): demonstrates that, 64.3% of the studied elderly were illiterate, followed by intermediate education (14.3 %) then the elderly who able to read and write (8.0%).

Figure (2): portrays that the studied elderly were having a dead person from covid 19 , their relatives (68.8%), neighbors (27.2%), and friends (7%).

Figure (3): clarifies that the total mean score of life satisfaction among the studied elderly was 8.99±.12 before covid 19 then it decreased to be 5±2.31 during covid 19.

Figure (4): portrays that the total mean score of mental wellbeing among the studied elderly was 20.95±.52 before covid 19 then decreased to be 9.63±4.23 during covid 19.

Figure(5): illustrates that the total mean score of social participation among the studied elderly was 16.21±2.15 before covid 19 then decreased to be 12.79±1.77 during covid 19.

Table (2): indicates a highly statistically significant positive correlation between mental wellbeing and life Satisfaction(.768).

Table (3): reveals a statistically significant negative correlation between unmarried marital status, having covid 19, number of diseases , number of medications and life satisfaction during covid 19 .Regarding mental wellbeing the table explains that it is negatively correlated with having covid 19. Regarding social participation is negatively correlated with elderly's age ,female gender, unmarried marital status ,not working, number of diseases and number of medications .On the other hand the statistically significant positive correlation was between educational level and social participation

Table (4): indicates that the only statistically significant negative predictor for life satisfaction score was having covid 19.The model explains 8.3% of variation in life satisfaction score.

Table (5): indicates that the only statistically significant positive predictor for mental wellbeing score wasn't having covid 19.The model explains 7.2% of variation in life satisfaction score.

Table (6): reveals that the independent positive predictor for social participation score was education level . On the other hand, age and female gender were an independent negative predictors. The model explains 16% of variation in social participation score.

Discussion:

Public health recommendations and governmental measures during the COVID-19 pandemic have enforced numerous restrictions on daily living including social distancing, isolation and home confinement. Although it is the most effective solution to slow the spread of infectious disease, home confinement can also have negative effects on social participation and life satisfaction. Ammar et al [18].

In term of age of the studied elderly the findings of this study indicated that the mean of age was 65.59± 5.85 years and their age ranged between 60-85 years. this might be due to the presence of a larger individuals' number of this age group in Egypt as confirmed by CAPMAS [2] which reported that the number of elderly people (60 years and over) in Egypt reached 6.8 million, representing 6.7% of the total population.The previous findings were in the same line with a study carried in India by Rashid et al. [18] who revealed that average age of the studied elderly was 68.2 ± 0.4. Likewise, Arthur et al [19] in Ghana, found that the target population for the study was who were 60 years and above.

Moreover, the current study findings revealed that slightly more than half of the study sample were male. This might be attributed to that the number of the elderly males' elderly at Manshet abd elatif waked was more than the elderly females number [2]. This finding goes in the same line with Sadeghi et al. [20] study conducted in the north of Iran, at Babol University of Medical Sciences (MUBABOL), which mentioned that more than half of their study subjects were male .

Also, the current study results showed that slightly less than three-quarters of the studied elderly were married and slightly less than two-thirds were illiterate. Married; this could be due to traditions, norms and customs in the Arabic World, which dictate that men and women's relationships should be formalized through marriage. Illiterate: this could be due to the fact that the studied elderly were living in rural areas where there was a lack of interest in education and they were preoccupied with farming. This result is confirmed by a study in Indonesia by Dewi, & Krisnatuti [21] who reported that most of the study sample was married. Similarly, Kulkarni et al. [22] in Gankal Village, Bangalore rural district (India), who found that the majority of the study participants were illiterates.

As regards occupation before retirement, less than half of them were house wife, in line with the female percentage from the study sample and also due to the majority of women in rural areas doesn't work . This result is confirmed by a study in southwest of Iran: by Boustani et al [23].

Also, the majority of the studied elderly were still living with their family; It might be due to that most of them were still married and living with their spouse's in addition to the fact that the most common type of family in rural areas is the extended family and there are strong relationships between elderly people and their progeny in rural areas.

The above mentioned result are in agreement with the results of the study carried out by Marzo et al. [24] an online survey in six countries: Bangladesh, Iran, Iraq, Malaysia, Palestine, and Sri Lanka, which reported that the studied sample were not working and more than two thirds of them were living with there family.

Concerning medical history, the current study discovered that about two thirds of the study samples were having chronic conditions, with a mean number of diseases 1.08 ± 1.15 and the most common comorbid diseases are hypertension and diabetes mellitus, Such results might be due to physiological changes in body systems as people get older, such as the cardiovascular, respiratory, and immunological systems. Also, comorbidities like hypertension and diabetes are common among the elderly.

The present finding is in agreement with the results of study carried out by Rivera-Hernandez et al. [26] in Brazil demonstrated that about half of older adults had hypertension and one- third had diabetes.

Concerning covid 19 history of the studied elderly, the results of the current study showed that slightly less than one third of the studied elderly were infected with covid 19 , and about half of them had covid 19 from a year ago .This may be due to that covid 19 was a pandemic and the elderly population was the most susceptible group. This result is in agreement with a study carried out in Egypt by Khalaf et al. [28] who reported that slightly less than one third of the elderly were infected with covid 19.

Regarding life satisfaction

The present study demonstrated that all the total mean score of life satisfaction among the studied elderly was 8.99±.12 before covid 19 then it decreased to be 5±2.31 during covid 19.This may be related to that the COVID-19 pandemic is accompanied by quarantine which lead to social

isolation, also this pandemic spreads state of frightening because of covid 19 effects as severity of the infection , consequences and death. Another plausible rationale might be that slightly less than one third of the studied elderly were infected with covid 19 suffered from its , consequences which make them so scared and unsatisfied with their life and two thirds of them had a close relative dead from covid 19.

In the same context, the results of a study was conducted by Özpınar et al. [29] in Turkey, the mean score of life satisfaction during covid 19 pandemic in older adults participating in the study was 12.99 ± 3.708, this mean is lower than the life satisfaction mean score of older adults determined in many studies conducted in Turkey during the pre-pandemic period by Tel et al. [30]. Furthermore, Anastasiou & Duquenne [31] in Greek who revealed that more than one-third of respondents declared not being satisfied with their life. Likewise, a study conducted by Ammar et al. [32] in Jordan, Saudi Arabia, Kuwait, Iraq, unisia, Egypt, Algeria, France and Germany.As showed that the total mean score of life satisfaction decreased significantly during covid 19 compared to before covid 19 (14.77 ± 4.32 before covid 19 to 12.42 ± 4.67 during covid 19).

On the contrary a study conducted by Bidzan-Bluma et al. [33] in o Germany and Poland rated that the elderly's life satisfaction during pandemic higher than young people with total mean score was (7.85 ± 1.72 for elderly versus 6.74 ± 2.25 for young people). Also, a study conducted by Arpacıoğlu et al. [34] in Turkey revealed that the mean scores of life satisfaction among the participants were 4.34 ± 1.59. This result indicated that the participants were slightly satisfied with their life. Possible explanations of such difference are the studied sample were'nt infected with covid 19 and hadn't have history of a person dead person from covid 19.

As elucidated from the current study findings, highly statistically significant relations between life satisfaction of the elderly and their characteristics as previous covid 19 infection , covid 19 consequences ,severity of covid 19 infection, number of chronic diseases and number of medication. The decreased life satisfaction score is related to their infection by covid 19, the severity of their condition , the consequences of their infection , the number of the medications they were taking . All these causes are confirmed by the relation in table (7) and the spearman's rank correlation table (13).Also, having history of covid 19 infection is negative predictor for life satisfaction score.

In the same vein, Zhang et al. [35] conducted a study in the China found that The severity of COVID-19 had a negative relationship with the life satisfaction. Moreover, a study conducted in China by Hu et al. [36] revealed that Respondents with chronic medical conditions indicated the lowest life satisfaction.

Regarding mental wellbeing The present study demonstrated that the total mean score of mental wellbeing among the studied elderly was $20.95 \pm .52$ before covid 19 pandemic compared to 9.63 ± 4.23 during covid 19 pandemic.This may be due to a reduction in the frequency of social contact. Most people have a strong need for social relationships in which they find solidarity, affection, and connectedness. This involves a close relative or friend with whom there is intensive contact. Staying at home alone, or mainly with members of the household, for a longer period of time is an extreme disruption of social life. A decrease in the frequency of social contact leads to a worsening of mental well-being.

Another plausible rationale, the studied elderly experience personal losses because of the pandemic. Due to COVID-19, people may experience bereavement, losing a beloved spouse, or a person belonging to their

social network. Feelings of loneliness and mental health problems are found to be the most serious consequences of bereavement (Perrig-Chiello et al., [37]. Other types of loss include social contact, connections through a person's business, and participation in social and public activities .

Third plausible rationale, the pandemic can be perceived at a societal level as a source of stress that has psychological consequences. Reports on hospitalizations and severe pressure on intensive care facilities, as well as on the large increase in the number of deaths, particularly among older people, have dominated the media .

In the same vein Xiao et al. [38] an online survey conducted on Caucasian , Asian , Hispanic or Latino, and African American found that approximately three-quarters of participants reported new mental health issues and decreased overall physical and mental well-being. Moreover, Faulkner et al. [39] conducted an online survey in the UK, Ireland, New Zealand and Australia reported poorer mental well-being during covid 19

As elucidated from the current study findings that mental well-being is low among elderly who was infected with covid 19. This may be due to they are facing stigma and discrimination from their own family members and the general population.

In the same vein a study conducted by Poudel & Subedi [40] in in Nepal founded that patients who are infected with COVID-19 are at a greater risk of developing mental health problems.

Regarding social participation By covid 19 pandemic the present study demonstrated that the total mean score of social participation among the studied elderly was 16.21±2.15 before covid 19 then decreased to be 12.79±1.77 during covid 19, except social contact by using technology, nearly two third of them had social contact through

technology all times (phone calls and the use of internet and social media) during covid 19 compared to before covid 19 only one quarter of them had used social contact through technology all times due to covid 19 quarantine

This may be due to government rules as a preventive measures for the management of the COVID-19 pandemic aimed to prevent covid 19 spread and to protect older adults because it was evident early in the pandemic that older adults were at a higher risk of morbidity and mortality from COVID-19 and to, Old people are constrained from visits with family members , restricted community participation , reduced the opportunities for social interaction.

In the same vein, Ammar et al. [32] conducted an international online survey on participations from Asia ,Africa, Europe, and others found that social participation before covid 19 was 44.15 ± 9.23 which decreased to be 25.6 ± 12.94 during covid 19 which indicates a negative effects of covid 19 on social participation. Also founded that the social contact score through digital technologies significantly increased (during the confinement period)with more individuals nearly quarter of them became socially connected through digital technology .

Our next notable finding was that a highly statistically significant relationship between social participationis negatively correlated with elderly's age ,female gender, unmarried marital status ,not working, number of diseases and number of medications. On the other hand the statistically significant positive correlation was between educational level and social participation.

In the same vein an survey conducted by Egeljić-Mihailović et al. [41] on Serbian older adults founded that significant predictors of social participation with age, and education .

Highly statistically significant positive correlation between mental

wellbeing mean score and life Satisfaction mean score.

In the same vein Lombardo et al. [42] in Canada founded that mental health status was highly associated with life satisfaction .People with poor self-rated mental health had a particularly low life satisfaction. Kackar & Sharma ([43]) in India founded that there is a positive correlation between mental health wellbeing and life Satisfaction among aged people.

Conclusion:

Covid 19 pandemic had a negative effect on the life satisfaction, mental wellbeing and social participation among elderly.

Recommendations:

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

- Plans, including proper multifaceted training programs and crisis management policies for such events, should be adopted to minimize the mental burdens on elderly.

- Supportive services aimed at assisting older adults to modify, reframe, and adapt their activities would be useful to reduce loneliness and social isolation .

- health education program to the elderly about Life satisfaction, mental wellbeing and social participation

Table (1): Demographic characteristics and medical history of the studied elderly (N=300)

| Demographic characteristics	(n=300)	
	Frequency	**Percent**
Age group: /year		
60-	224	74.7
70-	62	20.7
80-	14	4.6
Mean ± SD	**65.59± 5.85**	
(range)	**(60 – 85)**	
Gender:		
Male	156	52.0
Female	144	48.0
Marital status:		
Married	214	71.3
Widower	82	27.3
Divorced	4	1.4
Occupation before retiree:		
House wife	131	43.7
Crafts	30	10.0
Farmers	68	22.7
Tradesman	7	2.3
Employee	64	21.3
Living with whom:	13	4.3
Alone	287	95.7
With family		
Total no. of chronic diseases:		37.0
No chronic disease	111	52.7
≤ 2	158	10.3
> 2	31	
Mean ± SD	**1.08 ± 1.15**	
(range)	**(١– 8)**	
Had Covid 19:		
Yes	89	29.7
No	211	70.3
If yes time of getting covid 19:n=89		
Less than a year ago	15	16.9
A year ago	43	48.3
More than a year ago	31	34.8
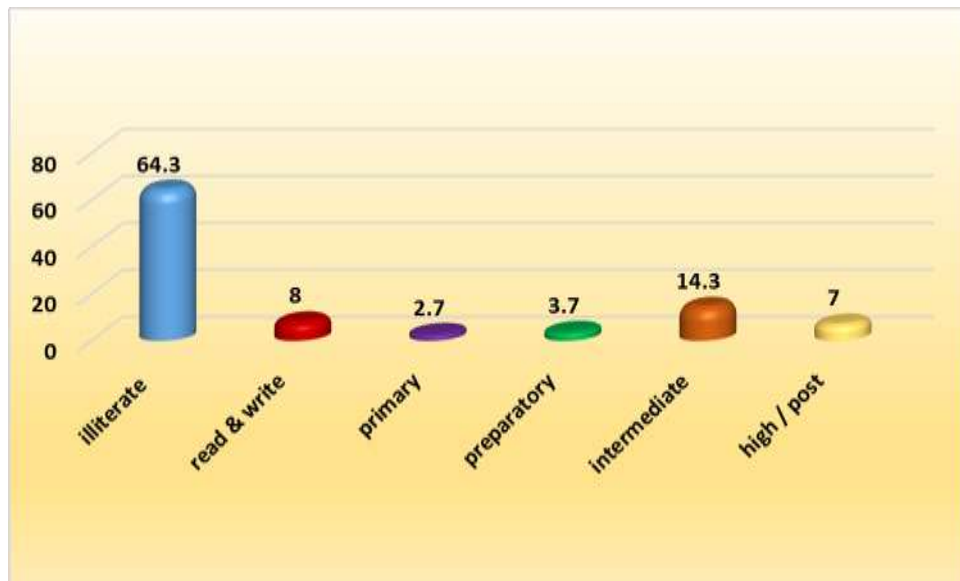
Figure (1): distribution of the studied elderly by level of education (n= 300).
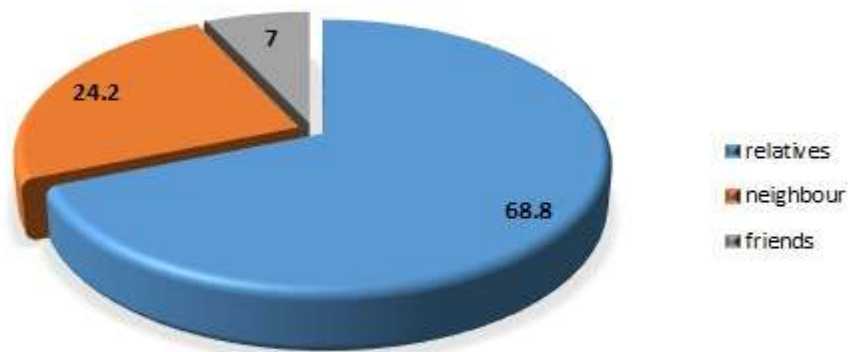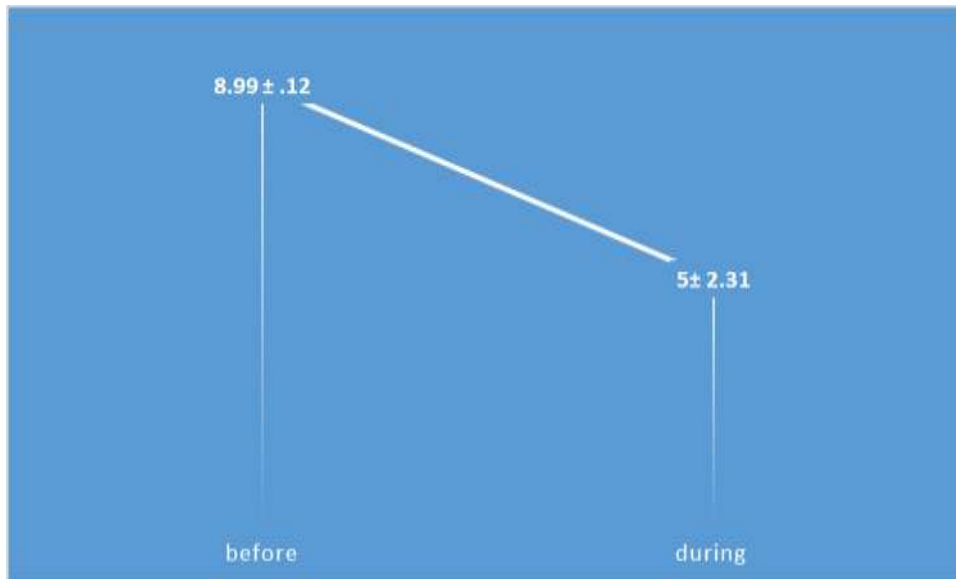

Figure (2): Having person dead from covid 19

Figure (3): Total life satisfaction mean score before and during covid 19

Figure (4): Total mental wellbeing mean score before and during covid 19.

Figure (5): Total social participation mean score before and during covid 19.

Table (2): Correlation between elderly' total mean score of life satisfaction, mental wellbeing, and social participation.

Scores	Total mean score		
	Life Satisfaction	Mental wellbeing	Social participation
Life Satisfaction			
Mental wellbeing	.768**		
Social participation	.006	-.003	

Table (3): Correlation between elderly' characteristics and their life satisfaction, mental wellbeing, and social participation during covid 19.

Items	Spearman's rank correlation coefficient		
	Life Satisfaction	Mental wellbeing	Social participation
Age	.033	.058	**-.122***
Gender [female]	-.060	-.105	**-.680****
Marital status[unmarried]	**-.125***	.064	**-.323****
Education level	-.042	.000	**.445****
Current work [not work]	-.028	-.048	**-.281****
Living with whom[family]	-.012	-.021	.080
Had covid 19 [yes]	**-.273****	**-.249****	.097
No. of diseases	**-.157****	-.092	**-.195****
No. of medication	**-.158****	-.013	**-.160****

Table (4): Best fitting multiple linear regression model for life satisfaction score during covid 19.

	Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.029	.107		18.883	.000**	1.818	2.241
	Had covid19 [yes]	-.299	.061	-.273	-4.907	.000**	-.419	-.179
R-square=0.083	Model ANOVA			F=26.88	p<0.001			

Table (5): Best fitting multiple linear regression model for mental wellbeing score during covid 19.

	Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	5.415	.910		5.952	.000	3.625	7.206
	Had covid19 [no]	2.473	.516	.267	4.792	.000	1.457	3.488
R-square=0.072	Model ANOVA			F=22.97	p<0.001			

Table (6): Best fitting multiple linear regression model for social participation score.

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	14.381	.474		30.331	**.000**	13.448	15.314
Age	-.432	.181	-.135	-2.389	**.018**	-.788	-.076
Gender [female]	-1.068	.214	-.302	-4.991	**.000**	-1.489	-.647
Education level	.187	.055	.189	3.370	**.001**	.078	.296
Marital status	.060	.118	.030	.509	.611	-.172	.292

R-square=0.16   Model ANOVA   F=14.51   p<0.001

References:

1. United Nations, Department of Economic and Social Affairs, Population Division (2020). World Population Ageing 2019 (ST/ESA/SER.A/444). Retrieved (April 23, 2023), from http://creativecommons.org/licenses/by/3.0/igo/
2. Central Agency for Public Mobilization and Statistics: Arab Republic of Egypt [CAPMAS]. (2022): Statistical year book. Population: Population Distribution by Selected Age Group, Sex and Governorate According to Final Result of 2022 population Census. Retrieved (April 8, 2023), from http://www.capmas.gov.eg/Admin/Pages%20Files/201899125451population.pdf
3. Cao, B., Wang, Y., Wen, D., Liu, W., Wang, J., Fan, G., ... & Wang, C. A trial of lopinavir–ritonavir in adults hospitalized with severe Covid-19. New England journal of medicine.(2020).. 382.‹1787-1799.
4. Worldometer,(2022). COVID-19 coronavirus pandemic. Retrived (March 30, 2022), from https://www.worldometers.info/coronavirus/#countries
5. Rosenthal, N., Cao, Z., Gundrum, J., Sianis, J., & Safo, S. Risk factors associated with in-hospital mortality in a US national sample of patients with COVID-19. JAMA network open, (2020); 3(12), e2029058-e2029058.
6. Kaiser Family Foundation (KFF): Deaths Among Older Adults Due to COVID-19 Jumped During the Summer of 2022 Before Falling Somewhat in September.retrieved (March 30, 2023), from : https://www.kff.org/coronavirus-covid-19/issue-brief/deaths-among-older-adults-due-to-covid-19-jumped-during-the-summer-of-2022-before-falling-somewhat-in-september/
7. Karataş, Z., Uzun, K., & Tagay, Ö. Relationships between the life satisfaction, meaning in life, hope and COVID-19 fear

for Turkish adults during the COVID-19 outbreak. Frontiers in Psychology, (2021). 12, 633384.

8. Choi EK, Kim IR, Nam SJ. Impact of Arpacıoğlu, S., Yalçın, M., Türkmenoğlu, F., Ünübol, B., & Çelebi Çakıroğlu, O. Mental health and factors related to life satisfaction in nursing home and community-dwelling older adults during COVID-19 pandemic in Turkey. Psychogeriatrics, (2021). 21(6), 881-891.

9. Freedman, A., & Nicolle, J. Social isolation and loneliness: The new geriatric giants: Approach for primary care. Canadian Family Physician, (2020). 66(3), 176-182.

10. Gupta, R., & Dhamija, R. K. Covid-19: social distancing or social isolation. (2020). BMJ, 369.

11. American Nurses Association (2020) Nurses Responding to Global Pandemics, retrived (March 30, 2023), from
https://onlinenursing.duq.edu/blog/nurses-responding-to-global-pandemics/

12. Rand, K. L., Shanahan, M. L., Fischer, I. C., & Fortney, S. K. Hope and optimism as predictors of academic performance and subjective well-being in college students. Learning and Individual differences, (2020). 81, 101906.

13. Kecmanovic, Science-Based Strategies to Cope with Coronavirus Anxiety. The Conversation, J. (2020). 3.

14. Marston, H. R., Musselwhite, C., & Hadley, R. A. COVID-19 vs Social Isolation: the impact technology can have on communities, social connections and citizens. The British Society of Gerontology. (2020).

15. Siette, J., Dodds, L., Seaman, K., Wuthrich, V., Johnco, C., Earl, J., et al. The impact of COVID-19 on the quality of life of older adults receiving community-based aged care. Australasian Journal on Ageing, (2021). 40(1), 84-89.

16. Singhal,S.,Kumar,P.,Singh,S.,Saha,S.&Dey,A,B Clinical features and outcomes of COVID-19 in older adults: a systematic review and meta-analysis. BMC Geriatrics; .(2021). 21(321):1-9.

17. Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. The Satisfaction with Life Scale. Journal of Personality Assessment, (1985). 49, 71-75.

18. Ammar, A., Chtourou, H., Boukhris, O., Trabelsi, K., Masmoudi, L., Brach, M., ... & Hoekelmann, A. Social participation and life satisfaction of peoples during the COVID-19 home confinement: The ECLB-COVID19 multicenter study. MedRxiv, (2020). 2020-05.

19. Arthur, P., Tawiah., J., & Turkson., R. Assessment of Dietary habits of the Aged in Nkawie in the Atwima Nwabiagya District of Ashanti Region: American Journal of Food Science and Health,(2020). 6(4), pp. 119-127.

20. Sadeghi, F., Pournajaf, A., Halaji, M., Chehrazi, M., Amiri, F. H., Amoli, S. S., ... & Yahyapour, Y. A large retrospective study of epidemiological characteristics of COVID-19 patients in the North of Iran: association between SARS-CoV-2 RT-PCR Ct values with demographic data. International journal of clinical practice, (2022).

21. Dewi, M. A., & Krisnatuti, D. Level of Stress, Self-Adjustment, and Quality of Life among Elderly Men in the Beginning of COVID-19 Pandemic. Department of Family and Consumer Sciences, Faculty of Human Ecology, IPB University, (2020). 41.

22. Kulkarni, S., Nakkeeran, G., DM, M. N. S., Govind, G. S., & Rani, H. L. Assessment of Awareness of Face Mask Use among the Rural Adult Population of South Karnataka, During The COVID-19 Pandemic. Medical Research Archives, (2023). 11(3).

23. Boustani, A., Torabizadeh, C., & Najafi Kalyani, M. Comparison of the Quality of Life and Depression in the Elderly with and without a History of COVID-19 Infection in Shiraz, Iran. Depression Research and Treatment, (2023).

24. Marzo, R. R., Khanal, P., Ahmad, A., Rathore, F. A., Chauhan, S., Singh, A., ... & Su, T. T. Quality of life of the elderly during the COVID-19 pandemic in Asian countries: a cross-sectional study across six countries. Life, (2022). 12(3), 365.

25. Bandeira, G. F. D. S., Moreira, R. D. S., & Silva, V. D. L. Nutritional status of elderly assisted in primary care and their relationship with social determinants of health. Revista de Nutrição, (2019). 32.

26. Rivera-Hernandez, M., Ferdows, N. B., & Kumar, A. The impact of the COVID-19 epidemic on older adults in rural and urban areas in Mexico. The Journals of Gerontology: Series B, (2021). 76(7), e268-e274.

27. Ayaz-Alkaya, S., & Dülger, H. Fear of coronavirus and health literacy levels of older adults during the COVID-19 pandemic. Geriatric Nursing, (2022). 43, 45-50.

28. Khalaf, O. O., Abdalgeleel, S. A., & Mostafa, N. Fear of COVID-19 infection and its relation to depressive and anxiety symptoms among elderly population: online survey. Middle East Current Psychiatry, (2022). 29(1), 7.

29. Özpınar, S., Bayçelebi, S., Demir, Y., & Yazıcıoğlu, B.How did the COVID-19 pandemic affect older adults? Investigation in terms of disability, state–trait anxiety and life satisfaction: Samsun, Turkey example. Psychogeriatrics, (2022). 22(2), 202-209.

30. Tel, H., Koç, M., & Tel Aydın, H. Determination of loneliness, life satisfaction and death anxiety in elderly living at home. IBAD J Soc Sci, (2020). 1(10), 1-10.

31. Anastasiou, E., & Duquenne, M. N. First-wave COVID-19 pandemic in Greece: The role of demographic, social, and geographical factors in life satisfaction during lockdown. Social Sciences, (2021). 10(6), 186.

32. Ammar, A., Chtourou, H., Boukhris, O., Trabelsi, K., Masmoudi, L., Brach, M., ... & ECLB-COVID19 Consortium. COVID-19 home confinement negatively impacts social participation and life satisfaction: a worldwide multicenter study. International journal of environmental research and public health, (2020). 17(17), 6237.

33. Bidzan-Bluma, I., Bidzan, M., Jurek, P., Bidzan, L., Knietzsch, J., Stueck, M., & Bidzan, M. A Polish and German population study of quality of life, well-being, and life satisfaction in older adults during the COVID-19 pandemic. Frontiers in psychiatry, (2020). 11, 585813.

34. Arpacıoğlu, S., Yalçın, M., Türkmenoğlu, F., Ünübol, B., & Çelebi Çakıroğlu, O. Mental health and factors related to life satisfaction in nursing home and community-dwelling older adults during COVID-19 pandemic in Turkey. Psychogeriatrics, (2021). 21(6), 881-891.

35. Zhang, S. X., Wang, Y., Rauch, A., & Wei, F. Unprecedented disruption of lives and work: Health, distress and life satisfaction of working adults in China one month into the COVID-19 outbreak. Psychiatry research, (2020). 288, 112958.

36. Hu, S. X., Lei, W. I., Chao, K. K., Hall, B. J., & Chung, S. F. Common chronic health problems and life satisfaction among Macau elderly people. International Journal of Nursing Sciences, (2016). 3(4), 367-370.

37. Perrig-Chiello, P., Spahni, S., Höpflinger, F., & Carr, D. Cohort and gender differences in psychosocial adjustment to later-life widowhood. Journals of Gerontology Series B: Psychological Sciences and Social Sciences, (2016). 71(4), 765-774.

38. Xiao, Y., Becerik-Gerber, B., Lucas, G., & Roll, S. C. Impacts of working from home during COVID-19 pandemic on physical and mental well-being of office workstation users. Journal of occupational and environmental medicine, (2021). 63(3), 181.

39. Faulkner, J., O'Brien, W. J., McGrane, B., Wadsworth, D., Batten, J., Askew, C. D., ... & Lambrick, D. Physical activity, mental health and well-being of adults during initial COVID-19 containment strategies: A multi-country cross-sectional analysis. Journal of science and medicine in sport, (2021). 24(4), 320-326.

40. Poudel, K., & Subedi, P. Impact of COVID-19 pandemic on socioeconomic and mental health aspects in Nepal. International Journal of Social Psychiatry, (2020). 66(8), 748-755.

41. Egeljić-Mihailović, N., Brkić-Jovanović, N., Krstić, T., Simin, D., & Milutinović, D. Social participation and depressive symptoms among older adults during the Covid-19 pandemic in Serbia: a cross-sectional study. Geriatric Nursing, (2022). 44, 8-14.

42. Lombardo, P., Jones, W., Wang, L., Shen, X., & Goldner, E. M. The fundamental association between mental health and life satisfaction: results from successive waves of a Canadian national survey. BMC public health, (2018). 18(1), 1-9.

43. Kackar,A., &Sharma,H. Mental health Wellbeing and Life Satisfaction in old age. International Journal of Social Science and Humanities Research, (2019). 7(2),1183-1188.