



A study to Assess the Psychological Impact of COVID-19 Pandemic among Older adults in Tirupati.

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ABSTRACT:

Background: The Novel Corona virus rapidly increased and transmitted on a large scale. COVID-19 significantly resulted in a large number of psychological consequences among older adults aged ≥ 60 .

Objectives:

- To assess the level of psychological impact of COVID-19 among older adults.
- To test the association between psychological impact of COVID-19 pandemic with selected demographic variables.
- To find out the correlation between the level of psychological impact with selected demographic variables.

Materials and Methods: A cross-sectional study conducted among 120 older adults using convenience sampling technique. Interview conducted with the COVID-19 precautionary measures and collected data on several aspects of participants sociodemographic, knowledge, psychological impact and mental health status by using IES-R, and DASS-21. Data computed by descriptive and inferential statistics.

Results: Out of 120 older adults, 115(95.8%) had severe impact, severe depression, 61(50.8%), 16(13.3%) had extremely severe anxiety, 36(30%) had severe anxiety, 24 (20%) had moderate stress. The Chi-Square showed significant association with education, religion, type of family, pension, illness, marital status and

the level of psychological impact at $p < 0.05$ level. Regression analysis showed that there was significant relationship with educational status, family income, age, gender, marital status, occupation, type of family and COVID -19 test results on level of depression, anxiety, and stress among older adults at $p < 0.05$ level.

Conclusions: The findings suggested that more attention needs to be paid for older adults to overcome psychological impact of COVID-19 pandemic by practicing the relaxation techniques, reminiscence therapy and tele counselling.

Key words: COVID-19, Anxiety, Depression, Stress, Pandemic.

1. Introduction: The novel Coronavirus (2019-nCoV, officially known as SARS-CoV-2 or COVID-19) was first reported in December 2019 in Wuhan, Hubei Province, China, from where it spread rapidly to over 198 countries. It was declared as a global pandemic by WHO on 12th March 2020. ^[1] Corona is a single stranded RNA virus that had its roots into the world from almost 60 years since its discovery in late 1960s. Corona viruses belong to the Corona viridae family in the Nidovirales order. Earlier, the allied viruses of the same family like the Severe acute respiratory syndrome coronavirus SARS-COV in 2003, Human corona virus HCOV NL63 in 2004 ^[2] HKU1 in 2005. ^[3] The world has seen outbreaks of epidemics and pandemic since prehistoric times. The COVID Pandemic, which is currently affecting the world. ^[4] One of the most distinctive characteristics of COVID-19 is that it can be transmitted from person to person with or without any symptoms such as fever, coughing, or sore throat. As a result, COVID-19 is an infectious disease that is more frightening than other viral infectious diseases in the past. ^[5] Isolation and quarantine refer to the separating of people who have been diagnosed and suspected of having an infectious disease, respectively. ^[6] COVID-19 pandemic has not only affected the people economically/ professionally but even mentally and emotionally as of the national policy of home quarantine. ^[7] COVID-19 has proven to be much more widespread with numbers of the affected surpassing SARS. According to the World Health Organization (WHO), a total of 8422 people worldwide were affected with SARS, with 916 deaths. Previous data on mass occurrences, like natural disasters, shows that large scale disruptive events are strongly associated with ill-effects on mental health. ^[8] A wide range of psychological disorders, including panic, fear, anxiety, depression, and frustration, gradually emerged. To date, various studies have reported the psychological impact of the COVID-19 pandemic on different populations. ^[9] In a large sample survey conducted nationwide recently, 35% of the public experienced psychological distress during the outbreak of COVID-19. The studies have shown that risk of depression and anxiety increases when people are in a state of long-term stress. ^[10]

Ageing is a chronic condition of human life cycle and is accompanied by conditions such as cardiovascular disease, hypertension, diabetes mellitus, cancer, and/or mental illness. ^[11] It is a long-term result of accumulation of several kinds of molecular and cellular damage over time. This stage in the life cycle is marked by a gradual decline in physical and mental capacity, increased risk of disease and finally death. ^[12] Globally, the population is ageing rapidly, and it is estimated that older people or elderly, defined as those aged 60 years and over, will constitute 22% of the total world population by 2025. ^[13] Based on the death

certificates of data retrieved and coded by the CDC National Centre for Health Statistics, 78% of COVID-19 related deaths in the U.S. occurred among older adults age 65 and over. Older adults are the segment of the population most vulnerable in this pandemic. ^[14] Mental and neurological disorders account for 6.6% of the total disability (DALYs) for this age group. ^[15] Where studies indicate that people who have a high level of stress are more susceptible to infection, due to a defect in the regulation of hormonal secretion, and this reduces their immune response as a high level of cortisol hormone contributes to the inhibition of this response. Similarly, the Corona pandemic has also strained mental health, anxiety, fear and behavioural disorders. ^[16]

COVID-19 is changing older people's daily routines, the care and support they receive. Lack of physical contact with friends and family members. Older persons have a higher probability of severe symptoms, complications and death. Degenerative conditions are also risk factors associated with a higher probability of severe illness and death as a result of COVID-19. The COVID-19 disaster created a crisis among older adults that causes the Anxiety, Depression, Stress and PTSD etc. As the researcher observed that many older adults become panic and experienced lot of anxiety and fear of death during lockdown period. Because there was no complete treatment and related literature related to COVID -19. It spreads very faster and the death rate also high. The older people were most vulnerable and high risk. Along with this the older people also experienced hopelessness, helplessness and worthlessness. So many rumours, myths about this COVID-19 pandemic. Lack of awareness and knowledge also leads to mental distress. All these showed a severe psychological impact among older adults. So the researcher selected this study to assess knowledge regarding COVID-19 transmission, incubation period, prevention, treatment among older adults. It is therefore important that the researcher's interest in selecting this study to create opportunities to foster healthy ageing and preventive measures towards mental distress during the pandemic.

2. Methods:

2.1. Subjects

This Cross-sectional study was conducted among older adults in Nehru Nagar, Tirupati, Andhra Pradesh, South India by using convenience sampling technique. Samples of 120 older adults were selected by using the Daniel's formula. The study was initiated and approved by the Ethical Committee of College of Nursing, Sri Venkateswara Institute of Medial Sciences, Tirupati, Andhra Pradesh. Prior permission was taken from the Health officer, Municipal corporation & Medical Officer of U-PHC Nehru Nagar Tirupati to conduct the study. Pilot study was done on 12 older adults. Sample of 120 older adults (60-75) who are available and cooperative to participate in the time of study. Those who are currently tested positive for COVID- 19 and sample selected for pilot study were excluded. A brief introduction of self and the purpose of the study was explained; written and informed consent was obtained from all participants. The Data was collected from the respondents and took 30-45 minutes from each participant and maintained confidentiality. The respondents were thanked for their co-operation which they extended willingly. The data collection procedure completed in 4 weeks by following COVID-19 precautionary measures. Ethical considerations such as informed consent, anonymity, voluntariness, and option to withdraw at any point were followed.

2.2. Research tools:

The content validity of the tools was obtained from 11 experts. Internal consistency of the tool was established by split - half method using Spearman-Brown ^[17] for standard questionnaire $r = 0.88$ for Impact event scale, $r = 0.93$ for DASS-21 and the tool was found to be highly reliable.

Section-1: Demographic data, such as age, gender, religion, education, marital status, type of family, occupation, type of pension, family income, health Status, awareness about quarantine, COVID-19 test and results.

Section-2: Structured Knowledge questionnaire for assessing the knowledge among older adults related to COVID-19. A Structured Questionnaire consisting of 34 items on knowledge related to symptoms, transmission and prevention of COVID-19. Scoring was categorized as 9 or <9: Poor knowledge, 10-18: Minimal knowledge, 19-27: Knowledgeable, 28-36: Highly knowledgeable.

Section-3: It consists of 2 Standard scales classified as part A and B.

PART-A: IMPACT OF EVENTS SCALE-Revised (IES-R). The IES-R Scale was developed by Weiss, D.S (2007). Revised by J, P. Wilson, & M. Keane (Eds.). ^[18] Revised Impact of Event Scale consist of 22 questions. Scoring range of 1 to 88. Each question has four options with scoring 1-4. Those are a little bit (1), moderately (2), quite a bit (3), extremely (4). The score was categorized as mild (24-33), moderate (33-37), severe (37-88).

PART-B: Depression, Anxiety, Stress Scale [DASS- 21] to assess the level of Depression, Anxiety and Stress developed by Lovibond, S.H. & Lovibond, P.F. (1995). ^[19] The Depression, Anxiety and Stress Scale - 21 Items (DASS-21) is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress during COVID outbreak. Total items of the questionnaire were 21. It contains 7 items, divided into subscales like depression, anxiety and stress respectively and consists of a score 1-21. And the responses for 1-21 questions are some degree (1), considerable degree (2), very much (3).

2.3. Statistical analysis: All the data were entered in a spreadsheet and were rechecked for accuracy for quality assurance. Data were analysed by using EZR software which is based on R. Descriptive Statistics Inferential Statistics were used for analysis. Appropriate statistical tests including Frequency and percentage distribution were used for demographic variables of these samples. Chi-square and Regression analysis were used, to find out the association the relationship of level of depression, anxiety, stress and PTSD with their demographic variables among older adults and the level of significance was $P < 0.05$ as standard.

3. Results:

General information

A total of 120 older adults participated, 52(43.3%), 40(33.3%) were 60-65 and 65-70 years respectively, 67(55.8%) were male, 53(44.2%) were female, 90(75.0%) belongs to Hindu religion, 35(29.2%) completed their primary school education, 81(67.5%) older adults married, 109(90.8%) were belongs to nuclear family, 45 (37.5%) were homemakers, 82(68.3%) were taking pension, 65(54.2%) were belongs to $\leq ₹10,000$,

67(55.8%) were of not having past history of illness, 101(84.2%) aware about quarantine, 94(78.3%) not tested for COVID-19, 19(15.8%) were negative, 7(5.8%) were positive.

3.1 Knowledge regarding COVID-19

Frequency and percentage distribution revealed that out of 120 older adults 50(41.7%) older adults knowledgeable and 61(50.8%) were highly knowledgeable regarding COVID-19. [Fig:1]

3.2 Psychological impact

Out of 120 older adults, 26 (21.7%) had severe depression, 61(50.8%) had moderate depression, 15 (12.5%) had extremely severe anxiety, 36 (30%) had severe anxiety, 24 (20%) had moderate stress, 41(34.2%) had mild stress and 95.8% had severe impact related to COVID-19 pandemic. [Fig: 2,3,4 and 5]

3.3 Association between psychological impact of COVID-19 pandemic with their selected socio-demographic variables:

Anxiety: In the present study there was statistical significant association between education (Illiterate) and level of anxiety at $<0.05(p = 0.021)$. [Table 6]

Depression: There was statistical significant association between religion (Hindu) & level of depression at $p < 0.05 (p = 0.047)$, between education (illiterate) and level of depression at $p < 0.05 (p = 0.002)$, between type of family (nuclear) and level of depression at $p < 0.05 (p = 0.028)$, between pension who are not taking and level of depression at $p < 0.05 (p = 0.053)$, between illness and level of depression at $p < 0.05(p = 0.13)$. [Table 7]

Stress: There was statistical significant association between education (illiterate) & level of stress) at $p < 0.05(p = 0.03)$. [Table 8]

Impact of COVID – 19 Pandemic: There is statistical significant association between marital status (married) & level of Impact of COVID – 19 at $p < 0.05(p=0.002)$. [Table 9]

3.4. Correlation between the level of depression, anxiety and stress with the selected demographic variables.

Regression analysis results showed that the older adults demographic variables had significant effects of depression, anxiety, stress and impact among older adults during COVID-19 pandemic. Regarding anxiety, the older adults who were not tested for COVID -19 shows statistical significance at $p < 0.05(p=0.0000000018)$. Regarding depression, the older adult's educational status, the older adults who completed intermediate shows statistical significance at $p < 0.05(p=0.028)$, and who completed post-graduation shows statistical significance at $p < 0.05(p=0.057)$, regarding family income, the older adults who earn ₹10,001- ₹30,000 shows statistical significance at $p < 0.05(p=0.033)$ and who were not tested for COVID-19 shows statistical significance at $p < 0.05 (p=0.00000000092)$. Regarding stress the older adults of 60-65 were shows statistical significance at $p < 0.05(p=0.038)$, females shows statistical significance at $p < 0.05(p=0.048)$, the older adults who completed high school education shows statistical significance at $p <$

0.05($p=0.017$), the widow/widowers shows statistical significance at $p < 0.05(p=0.0038)$, regarding occupation the coolie were shows statistical significance at $p<0.05(p=0.046)$ and private employee were shows statistical significance at $p < 0.05(p=0.033)$. Regarding impact of COVID-19 the test result that who were not tested for COVID-19 shows statistical significance at $p < 0.05(p=0.0000065)$. [Table 6,7,8,9]

3.5. Association between knowledge and psychological impact with IES

Chi-Square shows that there was statistical significant association between impact of COVID-19 and level of depression($p<0.01$), anxiety($p=0.016$). among older adults at $p<0.05$ among older adults [Table 10]

3.6. **Correlation** shows statistical significance between level of knowledge regarding COVID-19 pandemic and study variables such as depression, anxiety, and impact of COVID-19 pandemic. These three factors show a close and positive relationship at $p<0.05$ level. [Table11]

3.6. Association and relationship between demographic variables and level of knowledge

Association between demographic variables and level of knowledge among older adults was shows statistical significance with awareness about quarantine at $p<0.05$ level ($p=0.014$). Correlation (Regression analysis) between demographic variables and level of knowledge among older adults was shows significance with gender ($p =0.021$), illiterates ($p=0.038$), type of family (joint family) ($p=0.026$) and occupation; businessmen($p=0.0083$) and older adults who were not doing job shows statistical significance ($p=0.03$) at $p < 0.05$ level. [Table 5]

Discussion:

This cross sectional study results suggested that public health emergencies can have severe psychological effects on older adults in Nehru Nagar, Tirupati. The main goal of this study was to evaluate the psychological condition of older adults during pandemic and factors influencing them. The present study findings were discussed with the findings of similar studies based on the objectives and hypotheses of the study.

The first objective was to assess the level of psychological impact of COVID-19 among older adults. In the present study revealed that the older adults had severe psychological impact. The results showed that 13.3 % had mild depression, 50.8% had moderate depression, 21.7% had severe depression, 16.7% had mild anxiety, 24.2% had moderate anxiety, 30% had severe anxiety, 12.5% had extremely severe anxiety, 34.2% had mild stress and 20% had moderate stress.

Abdulmajeed A Alkhamees ,Saleh A. Alrashed, et.al., (2020) conducted study on psychological impact and mental health status by using the and the Depression, Anxiety, and Stress Scale (DASS-21) among general public of Saudi Arabia. Of them, 28.3%,24%, and 22.3% reported moderate to severe depressive, anxiety, and stress symptoms, respectively and 23.6% reported moderate or severe psychological impact of the outbreak by using the Impact of Event Scale-Revised (IES-R).^[20] Rocío Rodríguez-Rey, Helena Garrido-Hernansaiz, et.al., (2020) reported 25% showed mild to severe levels of anxiety, 41% reported depressive

symptoms, and 41% felt stressed. ^[21] Doaa El Sayed Fadila, Fatma Magdy Ibrahim, et.al., (2021) reported that the prevalence of mild-to-moderate and severe peri-traumatic distress among older adults during the COVID-19 pandemic was 60.1% and 31%, respectively. ^[22]

The second and third objectives were to test the association and to find out the correlation between psychological impact of COVID-19 pandemic with their selected socio-demographic variables. In this study COVID-19 was significantly resulted in a large number of psychological consequences like anxiety, depression, post-traumatic stress disorder and stress. Also observed that there was statistically significant association and relationship between demographic variables, knowledge and psychological impact at level of $p < 0.05$. Correlations between these variables, and interactions of distress showed significance with few socio demographics like gender, education, age, females, coolly, marital status, family income and COVID-19 test status. Some studies stated that stress, anxiety, and depression were measured using the (DASS-21). These three factors show a close and positive relationship. ^[23] In the present study the older adults were highly knowledgeable regarding COVID-19 pandemic and logistic regression model had significant relationship between level of education and knowledge score at $p < 0.05$ level. The previous studies stated that there was no significant relationship between the older people age and their mean scores of knowledge ($p > 0.05$), but significant relationship between level of education and knowledge score ($p < 0.001$). ^[24]

This study also proved the same. The further recommendations can be

- Assess psychological impact among older adults and social media exposure during COVID-19 pandemic.
- Effectiveness of relaxation techniques (progressive muscle relaxation, deep breathing and guided imagery, laughter therapy and yoga) in promoting psychological health during COVID-19 pandemic.
- Effectiveness reminiscence of therapy, in combination with physical exercise in improving spiritual wellbeing of the elderly.

Conclusions:

Majority of the participants experienced moderate to severe psychological impact. The findings suggested that more attention needs to be paid to older adult to construct psychological interventions and public mental health strategies. The older adults were vulnerable for infections and more prone to get morbidity heightened. The comorbidities act as predisposing factors and also triggers the problem. The older adults need to be enlightened regarding the strategies to overcome the depression, anxiety, stress and Post-traumatic stress disorder. The relaxation techniques like deep breathing exercises, yoga, progressive muscle relaxation, meditation, guided imagery, physical exercises, massages, music therapy, humour and laughter therapy and reminiscence therapy helps to overcome anxiety, depression and stress during COVID-19 pandemic. The other strategies like treatments and vaccination, rehabilitation, tele-counselling, providing awareness on preventive measures of COVID-19, virtual connecting, conducting research on psychological consequences, and developing and utilising suitable interventions, supporting care homes more effectively and to provide

best health and social care for older people. The government should collaborate to resolve this problem in order to provide high quality, timely crisis-oriented psychological services to older adults.

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Conflicts of interest:

- There are no conflicts of interest.

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Fig1:Graphical representation of Knowledge regarding COVID-19

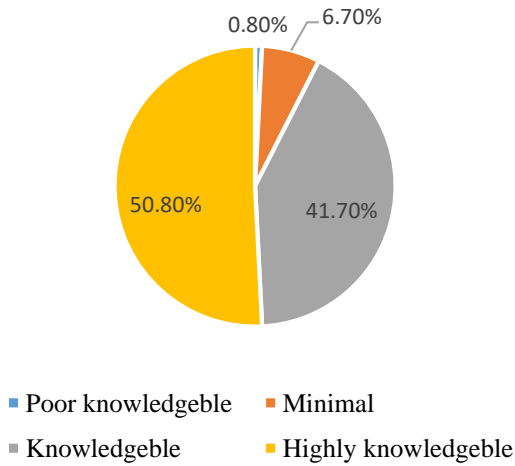


Fig 2:Graphical representation of Impact of COVID-19

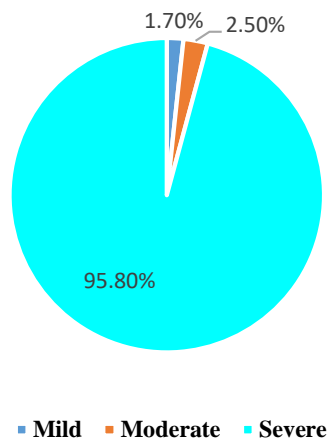


Fig 3: Graphical representation of Depression

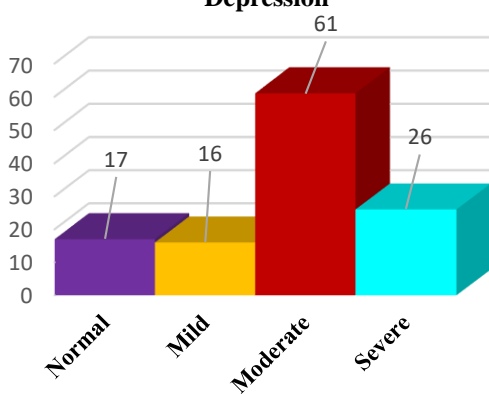


Fig 4: Graphical representation of Anxiety

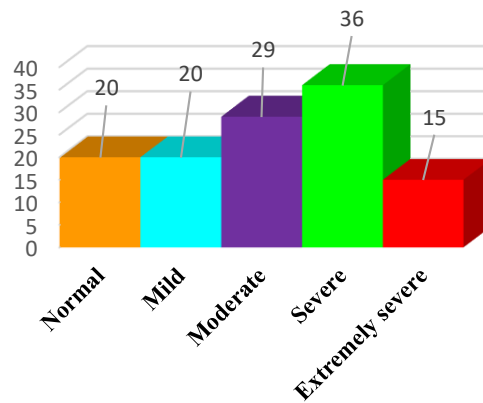


Fig 5:Graphical representation of Stress

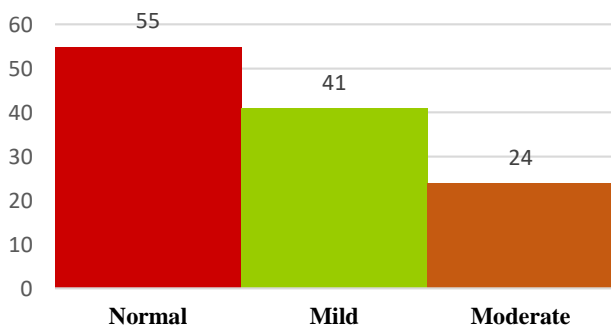


Table 1: Association and relationship between demographic variables and level of knowledge among older adults regarding COVID-19 pandemic. n=120

Variables	Knowledge				P* value	Adjusted odds ratio 95% CI (LL, UL)	P**value
	Poor knowledge	Minimal knowledge	Knowledgeable	Highly knowledgeable			
Gender							
Female	1 (100.0%)	6 (75.0%)	25 (50.0%)	21 (34.4%)	0.061	42.30 (1.75-1020.00)	0.021**
Education							
Primary school	0 (0%)	3 (37.5%)	13 (26.0%)	19 (31.1%)	0.2	0.21 (0.05-0.92)	0.038**
Type of family							
Joint	0 (0%)	0 (0%)	2 (4.0%)	8 (13.1%)	0.549	0.07 (0.01-0.97)	0.047**
Occupation							
Retired	0 (0%)	0 (0.0%)	10 (20.0%)	10 (16.4%)		60.90 (1.62-2290.00)	0.026**
Business	0 (0%)	0 (0.0%)	5 (10.0%)	3 (4.9%)		130.00 (3.50-4800.00)	0.0083**
Not applicable	0 (0%)	1 (12.5%)	3 (6.0%)	8 (13.1%)	0.957	42.40 (1.45-1240.00)	0.03**
Quarantine							
No	1 (100.0%)	1 (12.5%)	12 (24.0%)	5 (8.2%)		-	-
Yes	0 (0%)	7 (87.5%)	38 (76.0%)	56 (91.8%)	0.014*	0.23 (0.04-1.26)	0.09

*: Association using chi square, **: Association using Logistic regression, '-': Reference value

Table 2: Association and relationship between demographic variables and level of anxiety among older adults regarding COVID-19 pandemic. n=120

Variables	Anxiety					P* value	Adjusted odds ratio 95% CI (LL, UL)	P**value
	Normal	Mild	Moderate	Severe	Extremely severe			
Education								
Illiterate	2 (10.0%)	3 (15.0%)	5 (17.2%)	10 (27.8%)	3 (20.0%)		-	-
Primary school	4 (20.0%)	4 (20.0%)	9 (31.0%)	11 (30.6%)	7 (46.7%)		0.87 (0.13-5.81)	0.88
High school	3 (15.0%)	2 (10.0%)	7 (24.1%)	10 (27.8%)	3 (20.0%)	0.021*	2.75 (0.24-31.70)	0.42
Intermediate	0 (0.0%)	3 (15.0%)	3 (10.3%)	3 (8.3%)	1 (6.7%)		0.85 (0.01-62.60)	0.94
Graduate	9 (45.0%)	4 (20.0%)	4 (13.8%)	2 (5.6%)	1 (6.7%)		8.35 (0.17-404.00)	0.28
Post graduate	2 (10.0%)	4 (20.0%)	1 (3.4%)	0 (0.0%)	0 (0.0%)		89 (0.0-Inf)	1
COVID-19 Test result								
Not done	14 (70.0%)	15 (75.0%)	21 (72.4%)	30 (83.3%)	14 (93.3%)	0.311	5.71 (3.24 - 10.10)	0.0000000018**

*: Association using chi square, **: Association using Logistic regression, '-': Reference value

Table 3: Association and relationship between demographic variables and level of depression among older adults regarding COVID-19 pandemic. n=120

Variables	Depression				P * value	Adjusted odds ratio 95% CI (LL, UL)	P**value
	Normal	Mild	Moderate	Severe			
Religion							
Hindu	16 (94.1%)	12 (75.0%)	46 (75.4%)	16 (61.5%)	0.047*	-	-
Muslim	0 (0.0%)	1 (6.2%)	11 (18.0%)	3 (11.5%)		33.40 (0.33-33)	0.14
Christian	1 (5.9%)	3 (18.8%)	4 (6.6%)	7 (26.9%)		0.09 (0.00-1.92)	0.12
Education							
Illiterate	2 (11.8%)	3 (18.8%)	14 (23.0%)	4 (15.4%)	0.002*	-	-
Primary school	3 (17.6%)	2 (12.5%)	18 (29.5%)	12 (46.2%)		5.06 (0.12-211.00)	0.39
High school	2 (11.8%)	1 (6.2%)	15 (24.6%)	7 (26.9%)		0.05 (0.00-9.07)	0.26
Intermediate	0 (0.0%)	4 (25.0%)	5 (8.2%)	1 (3.8%)		0.00 (0.00-0.40)	0.028**
Graduate	8 (47.1%)	3 (18.8%)	7 (11.5%)	2 (7.7%)		0.07 (0.00-43.80)	0.42
Post graduate	2 (11.8%)	3 (18.8%)	2 (3.3%)	0 (0.0%)	0.00 (0.00-1.270)	0.057**	
Type of family							
Nuclear	13 (76.5%)	13 (81.2%)	58 (95.1%)	25 (96.2%)	0.028*	-	-
Joint	4 (23.5%)	3 (18.8%)	3 (4.9%)	0 (0.0%)		0.12 (0.00-16.40)	0.39
living alone	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (3.8%)		65 (0.00-Inf)	1
Family income							
₹10,001 - ₹ 30,000	4 (23.5%)	2 (12.5%)	15 (24.6%)	6 (23.1%)	0.07	81 (2.05-31)	0.033**
Illness							
No	12 (70.6%)	6 (37.5%)	40 (65.6%)	9 (34.6%)	0.013*	-	-
Yes	5 (29.4%)	10 (62.5%)	21 (34.4%)	17 (65.4%)		0.06 (0.00-2.26)	0.13
COVID-19 Test result							
Not done	11 (64.7%)	13 (81.2%)	48(78.7%)	22 (34.6%)	0.395	6.23 (3.47 -11.20)	0.00000000092*

*: Association using chi square, **:Association using Logistic regression, '-': Reference value

Table 4: Association and relationship between demographic variables and level of stress among older**adults regarding COVID-19 pandemic.****n=120**

Variables	Stress			P* value	Adjusted odds ratio 95% CI (LL, UL)	P**value
	Normal	Mild	Moderate			
Age in years				0.708		
60-65	27 (4.1%)	18 (43.9%)	7 (29.2%)		30.50 (1.20-771.00)	0.038**
Gender				0.673		
Female	24 (43.6%)	20 (48.8%)	9 (37.5%)		0.09 (0.01-0.98)	0.048**
Education				0.003*		
Illiterate	7 (12.7%)	12 (29.3%)	4 (16.7%)		-	-
Primary school	11 (20.0%)	15 (36.6%)	9 (37.5%)		2.59 (0.63-10.60)	0.18
High school	12 (21.8%)	5 (12.2%)	8 (33.3%)		11.10 (1.53-80.00)	0.017**
Intermediate	3 (5.5%)	5 (12.2%)	2 (8.3%)		4.21 (0.44-40.70)	0.21
Graduate	15 (27.3%)	4 (9.8%)	1 (4.2%)		2.89 (0.30-28.20)	0.36
Post graduate	7 (12.7%)	0 (0.0%)	0 (0.0%)	22 (0.00-Inf)	0.99	
Marital status				0.386		
Widow /Widower	15 (27.3%)	8 (19.5%)	10 (41.7%)		10.90(2.16-54.70)	0.0038**
Occupation				0.341		
Coolie	3 (5.5%)	5 (12.2%)	1 (4.2%)		0.08 (0.01-0.96)	0.046**
Private employee	7 (12.7%)	7 (17.1%)	7 (29.2%)		0.06 (0.00-0.79)	0.033**

*: Association using chi square, ** :Association using Logistic regression, ‘-’: Reference value

Table 5: Association and relationship between demographic variables and level of IES (Impact of event) among older adults regarding COVID-19 pandemic. **n=120**

Variables	IES			P* value	Adjusted odds ratio 95% CI (LL, UL)	P**value
	Mild	Moderate	Severe			
Marital status				0.002*		
Married	1 (50.0%)	3 (100.0%)	77 (67.0%)		-	-
Un married	1 (50.0%)	0 (0.0%)	2 (1.7%)		0.00 (0.00-Inf)	1
Divorced	0 (0.0%)	0 (0.0%)	3 (2.6%)		0.00 (0.00-Inf)	1
Widow /Widower	0 (0.0%)	0 (0.0%)	33 (28.7%)		0.00 (0.00-Inf)	1
COVID-19 Test result				0.088		
Not done	1 (50.0%)	2 (66.7%)	91 (79.1%)		93.00 (13.00 -667.00)	0.0000065**

*: Association using chi square, ** :Association using Logistic regression, ‘-’: Reference value

Table 6: Association and relationship between knowledge and psychological impact, IES among older adult regarding COVID-19. n=120

Variables	IES			P* value	Adjusted odds ratio 95% CI (LL, UL)	P**value
	Mild	Moderate	Severe			
Depression				<0.001*		
Normal	1 (50.0%)	3 (100.0%)	13 (11.3%)		0.00 (0.000 - Inf)	1
Mild	1 (50.0%)	0 (0.0%)	15 (13.0%)		-	-
Moderate	0 (0.0%)	0 (0.0%)	61 (53.0%)		19 (0.00 - Inf)	1
Severe	0 (0.0%)	0 (0.0%)	26 (22.6%)		52 (0.00 - Inf)	1
Anxiety				0.016*		
Normal	1 (50.0%)	3 (100.0%)	16 (13.9%)		0.00 (0.000 - Inf)	1
Mild	0 (0.0%)	0 (0.0%)	20 (17.4%)		0.61 (0.00 - Inf)	1
Moderate	1 (50.0%)	0 (0.0%)	28 (24.3%)		0.00 (0.000 - Inf)	1
Severe	0 (0.0%)	0 (0.0%)	36 (31.3%)		4.18 (0.00 -Inf)	1
Extremely severe	0 (0.0%)	0 (0.0%)	15 (13.0%)	-	-	

*: Association using chi square, **: Association using Logistic regression, '-': Reference value

Table 7: Association and relationship between level of knowledge, psychological impact and IES (Impact of events) among older adults regarding COVID-19. n=120

Variables	Knowledge				P* value	Adjusted odds ratio 95% CI (LL, UL)	P**value	
	Poor knowledge	Minimal Knowledge	Knowledgeable	Highly knowledgeable				
Depression					0.736			
Severe	0 (0.0%)	0 (0.0%)	6 (12.0%)	20 (32.8%)		0.068	0.03 (0.00 - 0.27)	0.0016**
Anxiety								
Normal	0 (0.0%)	3 (37.5%)	5 (10.0%)	12 (19.7%)			0.04 (0.00 - 0.61)	0.021**
Mild	0 (0.0%)	7 (14.0%)	9 (18.0%)	9 (14.8%)			0.08 (0.1 -0.88)	0.039**
Moderate	0 (0.0%)	2 (25.0%)	13 (26.0%)	14 (23.0%)			0.11 (0.01 - 1.09)	0.059**
Severe	1 (100.0%)	1 (12.5%)	16 (32.0%)	18 (29.5%)			0.22 (0.03 - 1.46)	0.12
Extremely severe	0 (0.0%)	0 (0.0%)	7 (14.0%)	8 (13.1%)		-	-	

*: Association using chi square, **: Association using Logistic regression, '-': Reference value