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# Vulnerability and resilience of older adult toward stress during COVID- 19 pandemic in RAS Al-Khaimah, UAE

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***Abstract*---**In addition to heightened physical health risks, older persons may face mental health and social well-being potential risks as a result of coronavirus disease 2019 (COVID-19). The ability to adapt effectively to adversity, or resilience, may be a key aspect in successful aging. However, the measurement and correlates of resilience in the older adults have received insufficient attention. This study aims to assess the vulnerability and resilience of older adult toward stress during COVID-19 pandemic in RAS Al Khaimah, UAE. A cross-sectional descriptive study. The sample was recruited from two primary health care centers that introduce homecare services to older adults, namely Julphar and RAS Al- Khaimah health care centers. From the period of September 2021 to January 2022. 168 community-dwelling older adults registered in the mentioned primary health centers who were aged 60 years and older, were able to communicate, and who agreed to participate in the study. An electronic questionnaire for data collection, which was distributed to participants via publicly available online resources and the WhatsApp application. 69% of older individuals had high stress, compared to 31.0 % who experienced moderate stress during COVID-19, with a mean score of 70.60 9.12 and a mean score of 37.75 8.11 for the brief resilience scale, indicating that the older persons exhibited strong resilience. Educational level (B = 1.809) and employment position (B = 3.523) are both statistically significant predictors of resilience. Gender, job position, and income were shown to be statistically

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significant in connection to the Perceived Stress Scale (B = -0.311, -2.319, and 2.832, respectively). The findings indicate older people' resilience in terms of psychological coping and flexibility throughout COVID-19. Practitioners should strive to encourage older adults to engage in such proactive coping, and social policies should be designed to address the diverse needs of older adults.

***Keywords---***older adult, COVID-19, stress, psychological, resilience.

## Introduction

The coronavirus disease 2019 (COVID-19) pandemic has become a global public health crisis that results in a great variety of challenges for the world, and the rapidly escalating case load has overwhelmed health care systems (Servello & Evaristo, 2020; Wu & McGoogan, 2020). After the spread of the virus internationally, the WHO officially declared a pandemic for COVID-19 on March 11th, 2020, and many nations began to act to curb the spread of the virus. The United Arab Emirates (UAE), a federation of seven states on the eastern coast of the Arabian Peninsula, reported its first case on January 29th, 2020. New infections and deaths have appeared daily at the time of writing (February 7th, 2021). The United Arab of Emirates is reporting 323.402 cases with 301.081 recoveries and 914 deaths (MOHAP, 2021). Aging affects people physically, psychologically, and socially. Older people with multiple comorbid health conditions are the most vulnerable populations during the COVID-19 pandemic (Jordan et al., 2020; Logar, 2020; Niu et al., 2020), so the heavy psychological burden may result in excessive health risk for older adults. Resilience is a process that is changeable and interactive within contexts of biological, psychological, and environmental conditions.

Resilience can be changeable according to perceived stress, adapting mechanisms in physical, psychological, and specific situations that can be different from person to person. Furthermore, resilience is viewed as an adapting process using context-dependent resources to recover from suffering situations (Soonthornchaiya, 2020). As a consequence, the fear, stress, loneliness, and social isolation of older adults during the COVID-19 pandemic may undermine their resilience and further jeopardize their health and well-being as a consequence (Plagg et al., 2020). However, no research has been conducted to investigate the stress and resilience of older persons in the United Arab Emirates during the COVID-19 pandemic. Nurses caring for the elderly have a vital role in assessing the psychological status of older adults and guiding this vulnerable group to adapt to their stress through consultation, implementing relevant mental health interventions, and educational programs. Therefore, this study aims to assess stress and resilience among older adults during the COVID-19 pandemic in RAK Al-Khaimah, UAE.

## Method

A cross-sectional descriptive study was performed in the emirates of RAS Al-Khaimah, UAE. The sample was recruited from two primary health care centers

that introduce homecare services to older adults, namely Julphar and RAS Al-Khaimah health care centers. The Research Ethics Committee of RAK Medical and Health Science University and RAK REC approved the study.

## Participants

The target population were community-dwelling older adults registered in the mentioned primary health centers who were aged 60 years and older, were able to communicate, and who agreed to participate in the study. Older adults diagnosed with severe medical/neurological disorders and who were not alert were excluded from the study. The samples included all the older adults who met the inclusion criteria in the mentioned settings, and they included 168 older adults (a consecutive sample).

## Measures

The researchers developed an electronic questionnaire for data collection, which was distributed to participants via publicly available online resources and the WhatsApp application. The questionnaire contained a cover page as participants were informed about the aim of the study, their rights to withdraw from the study at any time, and assured confidentiality. Additionally, a pilot sample (n = 17) was carried out before the data collection to ensure the clarity and applicability of the survey items. Data from the pilot sample was not used in any further analysis. The questionnaire was structured into four sections. Socio-demographic data such as age, gender, marital status, education level, income, living condition, history of chronic disease, and history of COVID-19 exposure.

Perceived Stress Scale (PSS): It was developed by Sheldon Cohen et al, (1983). It is the most widely used psychological instrument for measuring the perception of stress. It is a measure of the degree to which situations in one's life are regarded as stressful. PSS scores are obtained by reversing responses (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 & 4 = 0) to the four positively stated items (items 4, 5, 7, & 8) and then summing across all scale items. The Brief Resilience Scale (BRS): was developed by Smith et al. (2008) to assess a person's ability to bounce back or recover from stress. It contains six items. Items 1, 3, and 5 are positively worded, and items 2, 4, and 6 are negatively worded, so reverse coding items score them. The answers are scored on a 5-point Likert-scale from 1= (strongly disagree) to 5= (strongly agree). Total scores were the mean scores of all answers and ranged from 6 to 30. Higher scores indicate a better-developed ability to handle stress.

## Statistical analysis

The data was fed to the computer and analyses using the IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp) Qualitative data were described using numbers and percent. The Kolmogorov-Smirnov test was used to verify the normality of the distribution. Quantitative data was described using range (minimum and maximum), mean, standard deviation, and median. The significance of the obtained results was judged at the 5% level. The used tests were:

- Pearson coefficient: To correlate between two normally distributed quantitative variables
- Regression: To detect the most independent and affecting factor for affecting the Perceived Stress Scale (PSS) and Brief Resilience Scale (BRS)

**Results**

In the current study, 92.3% of the older adults were between the ages of 60 and 75 (young-old), with a mean age of 65.33 ± 5.24 years, 55.4% were female, 58.3% were married, and 51.2% had just an elementary education. Around 76.8% were not working, and more than half of the older adults (62.5%) said their income was enough. Most of the participants were leaving with their families, 62.5%. Table 2 shows that comorbidity was frequent in older people (92.3%), with hypertension accounting for approximately 44 percent of the participants. The majority of the older people in the study (88.1%) had positive COVID-19, but slightly more than half of them (53.3%) had one family member who was positive for COVID-19, and 76.8% did not have someone working in the medical sector. Table 3 shows that 69% of older adults had high stress level, compared to 31.0% who experienced moderate stress during COVID-19, with a mean of 70.60 ± 9.12 of all the items. For the outcome variable, the brief resilience scale, respondents had a mean score of 37.75 ± 8.11 for the 10-item scale (Table 4).

A multivariate linear regression analysis was used to assess if demographic characteristics, COVID-19-related variables, and perceived stress scale variables were connected to higher levels of self-reported resilience in the sample. The results show that educational level (B = 1.809) and work status (B = 3.523) are statistically significant. (Table 5). Gender, work status, and income were shown to be statistically significant (B = -0.311, -2.319, and 2.832) in the second multiple linear regression to find the variables that affect the Perceived Stress Scale. (Table 6)

Table 1
Distribution of the studied older adults according to socio-demographic data (n = 168)

| Socio-demographic data | No. | % |
|---|---|---|
| Age | | |
| 60-74 | 155 | 92.3 |
| 75-85 | 13 | 7.7 |
| Min. – Max. | 45.0 - 80.0 | |
| Mean ± SD. | 65.33 ± 5.24 | |
| Median | 65.0 | |
| Gender | | |
| Male | 75 | 44.6 |
| Female | 93 | 55.4 |
| Marital status | | |
| Married | 98 | 58.3 |
| Not married | 70 | 41.7 |
| Education level | | |

| | | |
|---|---|---|
| Read &Write | 86 | 51.2 |
| Primary education | 63 | 37.5 |
| Bachelor degree | 19 | 11.3 |
| **Working** | | |
| Yes | 39 | 23.2 |
| No | 129 | 76.8 |
| **Income** | | |
| Enough | 105 | 62.5 |
| Not enough | 28 | 16.7 |
| Enough and saved | 35 | 20.8 |
| **With whom you live** | | |
| Alone | 6 | 3.6 |
| Family | 130 | 77.4 |
| One of the children | 29 | 17.3 |
| Relatives | 3 | 1.8 |

SD: Standard deviation

Table 2
Distribution of the studied elderlies according to comorbidity
(n = 168)

| Clinical data | No. | % |
|---|---|---|
| 1- Do you have any chronic disease# | | |
| No | 13 | 7.7 |
| Respiratory disease | 21 | 12.5 |
| Cardiovascular disease | 39 | 23.2 |
| Hypertension | 74 | 44.0 |
| Renal Disease | 6 | 3.6 |
| DM | 70 | 41.7 |
| Orthopedic disease | 4 | 2.4 |
| Neuropsychiatry | 4 | 2.4 |
| Liver diseases | 2 | 1.2 |
| 1. Have you diagnosed with COVID -19 before | | |
| Yes | 20 | 11.9 |
| No | 148 | 88.1 |
| 2. Have any of your family or relatives diagnosed with COVID-19 | | |
| Yes | 89 | 53.0 |
| No | 79 | 47.0 |
| 3. Does any of your relatives work in the medical field | | |
| Yes | 39 | 23.2 |
| No | 129 | 76.8 |

#: More than one answer

Table 3
Descriptive analysis of the studied elderlies according to Perceived Stress Scale (PSS) (n = 168)

| Perceived Stress Scale (PSS) | No. | % |
|---|---|---|
| Mild (0–13) | 0 | 0.0 |
| Moderate (14-26) | 52 | 31.0 |
| High (27-40) | 116 | 69.0 |
| Total Score | | |
| Min. – Max. | 21.0 - 38.0 | |
| Mean ± SD. | 28.24 ± 3.65 | |
| Median | 28.0 | |
| Percent Score | | |
| Min. – Max. | 52.50 - 95.0 | |
| Mean ± SD. | 70.60 ± 9.12 | |
| Median | 70.0 | |

Table 4
Descriptive analysis of the studied elderlies according to Brief Resilience Scale (BRS)(n = 168)

| | Total Score | Percent Score |
|---|---|---|
| Brief Resilience Scale (BRS) | | |
| Min. – Max. | 11.0 - 21.0 | 20.83 - 62.50 |
| Mean ± SD. | 15.06 ± 1.95 | 37.75 ± 8.11 |
| Median | 15.0 | 37.50 |

SD: Standard deviation

Table 5
Multivariate Linear regression for the parameters affecting Brief Resilience Scale (BRS) (n = 168)

| | Univariate | | #Multivariate | |
|---|---|---|---|---|
| | p | B (95%C.I) | p | B (95%C.I) |
| Age | 0.249 | -0.138(-0.375–0.098) | | |
| Gender | 0.604 | -0.656(-3.148 – 1.836) | | |
| Marital status | 0.537 | -0.411(-1.724–0.902) | | |
| Education level | 0.048* | 1.809 (0.014–3.604) | 0.037* | 1.881 (0.113–3.649) |
| Work status | 0.017* | 3.523 (0.637–6.410) | 0.013* | 3.621 (0.762–6.480) |
| Income | 0.621 | 0.382(-1.143–1.907) | | |
| With whom you live | 0.566 | 0.722(-1.756 – | | |

| | | | | |
|---|---|---|---|---|
| | | 3.199) | | |
| Have you diagnosed with COVID -19 before | 0.318 | 1.937 (-1.880– 5.754) | | |
| Have any of your family or relatives diagnosed with COVID-19 | 0.770 | -0.369(-2.852– 2.115) | | |
| Does any of your relatives work in the medical field | 0.473 | -1.068 (-4.000– 1.864) | | |
| Perceived Stress Scale (PSS) | 0.577 | -0.039 (-0.175– 0.098) | | |

B: Unstandardized Coefficients Beta: Standardized CoefficientsC.I: Confidence interval LL: Lower limit UL: Upper Limit
F,p: f and p values for the model $R^2$: Coefficient of determination
*: Statistically significant at $p \leq 0.05$

Table 6
Multivariate Linear regression for the parameters affecting Perceived Stress Scale (PSS) (n = 168)

| | Univariate | | #Multivariate | |
|---|---|---|---|---|
| | p | B (95%C.I) | p | B (95%C.I) |
| Age | 0.837 | 0.292(-2.510– 3.095) | | |
| Gender | 0.037* | -0.280(-0.543– -0.017) | 0.017* | -0.311(-0.565– -0.056) |
| Marital status | 0.227 | 0.904(-0.567– 2.375) | | |
| Education level | 0.205 | 1.308 (-0.724– 3.339) | | |
| Work status | 0.046* | -3.315 (-6.576– -0.054) | 0.152 | -2.319 (-5.496– 0.859) |
| Income | 0.001* | 2.857 (1.198– 4.516) | 0.001* | 2.832 (1.175– 4.488) |
| With whom you live | 0.401 | -1.185 (-3.966- 1.596) | | |
| Have you diagnosed with COVID -19 before | 0.426 | -1.736 (-6.031– 2.558) | | |
| Have any of your family or relatives diagnosed with COVID-19 | 0.327 | 1.385 (-1.398– 4.169) | | |
| Does any of your relatives work in the medical field | 0.559 | -0.978 (-4.275– 2.319) | | |

B: Unstandardized Coefficients Beta: Standardized Coefficients
C.I: Confidence interval LL: Lower limit UL: Upper Limit
F,p: f and p values for the model $R^2$: Coefficient of determination
*: Statistically significant at $p \leq 0.05$

**Discussion**

The Coronavirus Disease-2019 (COVID-19) pandemic has caused several problems for older adults (Wister et al., 2022). Previous research has demonstrated that the coronavirus disease 2019 (COVID-19) pandemic is a highly exceptional stressor that influences individuals and communities ( Heidi et

al.,2021).Older people may be especially concerned because 95.5% of COVID-19 deaths involved people aged 50 and above (The Centers for Disease Control and Prevention (CDC), 2021). This study examined the vulnerability and resilience of Older Adult toward stress in the United Arab Emirates during the COVID-19 Pandemic.

The main findings of this study revealed that 69 % of older adults had high stress, while 31.0% experienced moderate stress during COVID-19, with a mean of 70.60 ±9.12, which is consistent with prior studies studying stress associated with COVID-19 (Daly and Robinson, 2021; Umucu, 2020; Vannini et al.,2022; Heidi, 2021 ). Furthermore, women experienced more stress than males. These findings are consistent with a previous study that found women to be more stressed than males during the COVID-19 outbreak in China. In addition, women overall perceive more stress than men. These findings are in line with a previous study reporting increased stress in women as compared to men during the COVID-19 outbreak in China (Hou et al., 2020), in USA both (Vannini et al, 2022) and ( Heidi et al., 2021). At the time of the study, only 11.9% of the participants had been diagnosed with COVID-19 at the time of the study, despite the fact that more than half of them (53%) had at least one family member who had COVID-19.

In terms of the distribution of the investigated older adults based on comorbidity, it is clear that comorbidity is common in the elderly (92.3%). According to a study conducted by Alonzi et al (2020) & Mitra et al., (2020), those with multimorbidity are especially vulnerable to larger obstacles during the pandemic because multimorbidity negatively impacts older adults on numerous levels, including physiological, functional, psychological, and social ones. Furthermore, Vannini et al., (2021) discovered that there was an aggravation of mental health adversity among multimorbid older individuals during the COVID outbreak due to physical distancing mitigation strategies as well as a general impact on life.

In relation to the resilience of older adults to stress during the COVID 19 pandemic, respondents got a mean score of 37.75± 8.11, indicating high levels of resilience. Our findings of high resilience in this group are consistent with previous studies that have reported high resilience in the range of 14–35 % in older people (MacLeod et al., 2016; Vannini et al., 2022), which said that the mean resilience was 29.5± 5.9, matching to high levels. These findings emphasize the older person's resilience in terms of psychological coping and flexibility during this crisis (Lind et al., 2020).

A multivariate linear regression analysis was conducted to determine if demographic factors, COVID-19-related variables, and perceived stress scale variables were related to higher levels of self-reported resilience in the sample. The findings indicate that educational level (B = 1.809) and work status (B = 3.523) are statistically significant. It is similar to the Di Crosta et al. (2020) study, which found that poorer education status is closely associated with the higher onset of stress due to the COVID epidemic. Furthermore, the results support Qiu et al. (2020) who stated that distress during COVID-19 is related to educational level. This finding may explain why education plays a key role in stress resilience during the COVID pandemic, as it relates to perceived and actual awareness of COVID-19.

Physical function, reliance, and social engagement are all influenced by one's work situation. Physical dysfunction predicted low resilience among those with substantial social support, which is consistent with earlier research indicating that significant social networks might enhance resilience. Among those who have contributed to this work are Lamond et al. (2018). Meanwhile, physical qualities associated with high resilience include independence in activities of daily living (ADLs), being physically active in employment, and being physically fit (Childs & De Wit, 2014). Achieving the best outcomes linked to high resilience may necessitate taking into account the specific difficulties of later life.

A multivariate linear regression for the parameters affecting the perceived stress scale revealed that gender, work status, and income were shown to be statistically significant (B =-0.311, -2.319, 2.832) respectively. This finding is consistent with Kimhi et al. (2020) and Fadila et al. (2021) in Egypt, who discovered that women reported a higher level of sense of danger and distress symptoms than men. These findings may reflect, to some extent, cultural norms in Arab countries, in which women are more likely to express and communicate their emotions, such as fear and anxiety. Men are typically less emotional, and they hide their emotions as part of their manhood (Fadila & Ebeid, 2018). It has also been established that women appear to take on more caring responsibilities (Sharma et al., 2016). Balancing job and/or household responsibilities under extremely stressful conditions can be deemed an at-risk group (González-Sanguino et al., 2020). More emphasis should be placed on the mental health of older adult women in this regard. Thibaut (2020) mentioned that people with low income were more likely to report greater distress and psychiatric symptoms. It is also consistent with prior research that looked at demographic factors as predictors of resilience and stress (Masten, 2002; Kimhi et al., 2016; Martini 2020). In summary, there appears to be a link between demographic variables and the resilience of older adults to stress during the COVID-19 epidemic in the United Arab Emirates.

## Conclusion

Our findings imply that resilience is crucial for coping with stress during the COVID-19 pandemic, adding to the ongoing debate about the urgent need to augment resilience and explore measures to improve it. The painful experiences of the COVID-19 pandemic will force the world to reconsider its future plans, and resilience should play an important role in the scheme of healthy aging for the well-being of older adults.

## Limitation

The key limitation of this study is that it was cross-sectional and did not contain an intervention, so we were unable to establish causality, direction, and duration of coping effects. Furthermore, the data findings cannot be generalized. Future research should look at patterns of resilience across time in a wider range of samples.

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