**Resilience and Well-Being among Health Care Workers in Jerusalem Governorate**

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**Abstract.** Objective: To investigate the level and the correlation between (resilience and psychological well-being) among health care workers during covid-19 in Jerusalem Governorate.

Methods: The adult resilience scale (ARM-R) and Ryff’s Psychological well-being scale were used to assess the level of resilience and the level of psychological well- being of 126 Palestinian HCWs, respectively.

Results: The level of well-being among health care workers during covid-19 in Jerusalem Governorate was high, as the mean of response for the total score was (3.65), whereas the level of resilience among (HCWs) was very high as the mean of response for the total score was (4.38). Resilience and psychological well-being among (HCWs) had statistically positive and significant correlation at (0.01), according to the value of Pearson correlation, which was (0.62).

Conclusion: This study investigated the level and the correlation between (resilience and psychological well-being) among health care workers during covid-19 in Jerusalem Governorate. The study found that the level of resilience among health care workers was very high, this could be attributed to the fact that (HCWs) workload demands and performance expectations are key sources of stress, which may have created the ability for (HCWs) to actively respond to stressful events and adapt to the job environment. The level of psychological well-being among (HCWs) was high, which could be attributed to the fact that (HCWs) were equipped with the necessary coping strategies and behaviors that helped them face the outbreak, which in turn reflected on their feelings of environmental mastery, personal growth, and their relationship with others. Finally, there were statistically positive and significant correlation at (α ≤ 0.01) between the resilience and psychological well-being among health care workers, which goes to show that (HCWs) had excess to positive affect and positive functioning, leading to higher levels of psychological well-being.

**Keywords:** Covid-19, well-being, resilience, healthcare, mental health.

1. Introduction

The nature of the healthcare profession is commonly regarded as highly demanding due to the various ‘normal’ conditions impacting human health, making it one of the most stressful professions in society . Medical personnel are put under enormous physical and psychological stresses due to the nature of illnesses they encounter . The demands for a quick response to the COVID-19 pandemic was stressful in and of itself yet working as a healthcare professional to combat such a deadly illness day after day brought ever increasing demands on their own health. In addition to being overwhelmed, dealing with medical equipment shortages and concerns of infecting family members brought increased stress levels. A recent study in China found that frontline nurses and healthcare workers were more likely to experience negative mental health outcomes .

Healthcare workers (HCWs) suffer great pressure and exhaustion as a result of job overload, negative emotions, loss of physical contact with their families’ due to the high threat of infection, and the fear of death . Frontline (HCWs) expressed the danger of transmission, the dread of passing the disease on to their families, their colleagues’ concerns which led to increased feelings of stress, and the ambiguity around COVID-19 since there was no treatment .

Cullen, Gulati, & Kelly found that the psychological implications of the pandemic on well-being were at first, given little attention. This left populations, particularly healthcare workers, prone to psychological problems. However, the significance of a physician's well-being in the face of the COVID-19 pandemic has been given greater attention by many members of the medical community .

During times of significant social upheaval, the significance of resilience is especially crucial, particularly for (HCWs) (McCann et al., 2013; Robertson et al., 2016). The conventional definitions of resilience include the ability to adjust to and maintain psychological balance in the face of adversity . For example, the dramatic increase in workload burdens that occurs during a pandemic, or the situational uncertainty that arises when public health recommendations appear to be constantly changing .

A study by Austin, & Gregory , aimed to determine how community pharmacies in Ontario (Canada) managed the COVID-19 outbreak, with a focus on figuring out what factors impact or predict individual practitioners' and workplaces' resilience, as well as personal resilience for pharmacists. According to this study, personal resilience was influenced by factors such as comfort with technology, early adoption of corporate and professional guidance in workplaces that prioritize task-focus over multitasking, along with workplace scheduling systems and practices.

Bozdağ, & Ergün investigated factors that influenced the psychological resilience of healthcare personnel in the areas of life satisfaction. Positive affect, sub-scales of perceived social support, participants' age, personal precautions against coronavirus, nutrition, and sleep quality were all significantly and positively correlated with psychological resilience, implying that an increase in psychological resilience leads to an increase in the variables and vice versa. On the other hand, psychological resilience has been shown to be significantly and negatively correlated with negative affect, a personal sense of risk as a health care worker, and anxiety about contracting the virus, indicating that a lower level of psychological resilience is associated with a higher level of variables, and vice versa. Moreover, healthcare workers' psychological resilience levels were shown to be higher as they got older, with doctors having the lowest levels of psychological resilience.

In addition, during COVID-19, a study by Croghan, and others was conducted to estimate health care workers' (HCWs) self-reported stress, resilience, and coping. It was discovered that MDs (medical doctors), NPs (nurse practitioners), and PAs (physician assistants) had the highest resilience scores, and nurses had the highest stress levels. According to the findings, (HCWs) indicated moderate-to-high self-reported stress levels that were within the normal range for resilience.

Moreover, during the COVID-19 pandemic, a study conducted in Hong Kong examined professional quality of life and resilience among emergency department (HCWs). The study found that (HCWs) in Hong Kong's emergency departments had an overall moderate level of professional quality of life, and those with a higher level of self-reported resilience having better compassion satisfaction and lower levels of secondary traumatic stress and burnout .

In a study that aimed to investigate levels of resilience in Italian healthcare professionals, results showed that higher depression scores among female health care professionals working in a COVID-19 free setting, predicted significantly lower resilience . Another study examined protective factors against perceived stress and burnout, as well as characteristics that might boost resilience in (HCWs). The study concluded that being of a young age, of the female gender, with greater COVID-19 exposure, and lower resilience were all contributing factors to predicting stress and burnout .

Marie et al., aimed to present an overview of theoretical perspectives and practical research expertise regarding resilience, particularly in the context of Palestinian resilience, and the associated Palestinian concept of 'Somoud,' which is interwoven with ideas of personal and collective resilience and steadfastness. It's also a socio-political word that refers to ways of surviving in a long-term adversity, resource shortages, and poor infrastructure.

Bradburn's (1969) landmark research on psychological wellbeing was an early effort to define well-being, signalling a shift away from psychiatric diagnosis and towards the study of ordinary people's psychological reactions in their everyday lives. Bradburn emphasized that psychological well-being was the variable that emerged as paramount. The distinction between positive and negative affect was the focus of Bradburn's research. His model estimated that a person will experience high psychological well-being if positive affect outweighs negative affect, and low well-being if negative affect exceeds positive affect. Ryff defined psychological well-being (PWB) as a set of psychological characteristics that lead to positive human functioning, that included several resilience-related aspects such as maturity, purpose in life, and self-efficacy .

The results of a study conducted in Turkey on psychological well-being, depression, and stress among healthcare workers and non-healthcare workers revealed that while psychological well-being scores among healthcare workers did not differ by gender, depression and stress scores were significantly higher in women. However, there was no difference in psychological well-being, depression, or stress scores among non-healthcare professionals, based on gender. Furthermore, substantial results were obtained for health-care professionals' marital status; single healthcare workers had significantly higher levels of depression and stress than married healthcare professionals .

The findings of a study by Bardhhaman others (2021) that sought to reveal the prevalence of mental health problems in a sample of doctors and nurses working in many health facilities in Oman, revealed a high prevalence of stress, anxiety, and poor psychological well-being, especially among females, young (HCWs), and those who interacted with COVID-19 patients who were known or suspected.

Also, a study aimed to investigate the effects of COVID-19 on the psychological well-being of physicians working at various health institutions in Oman, found that COVID-19 had an impact on physicians' mental health, particularly female and young physicians, according to the study, female physicians reported higher levels of stress than male physicians, with two out of three female physicians reporting a low level of psychological well-being compared to one in three male physicians. Older physicians reported higher levels of well-being and less stress than younger doctors. Physicians who were married reported less stress than those who were not, however, it appeared that physicians, regardless of their gender or contact with COVID-19 patients, had similar amounts of anxiety, the overall well-being of physicians was strongly affected by both stress and anxiety .

A cross-sectional study by identified a number of workplace factors that had a significant impact on the resilience and well-being of healthcare workers during the COVID-19 pandemic. The study found that having a lower level of resilience had a significant impact on (HCWs) well-being.

Furthermore, research has found that those with higher resilience are more likely to use more positive and adaptive coping mechanisms, resulting in a more positive psychological state “well-being” .

In a study of 224 middle and late adolescent respondents with an aim of investigating the relationships between the (Ryff's dimensions) of psychological well-being and resilience, the results revealed positive relationships between psychological well-being and resilience. Boys were also more likely than girls to have a positive self-image and accept various aspects of themselves. Boys were also more likely than girls to manage their surroundings and a wide variety of external activities. The research also found that adolescents who felt they were growing and developing as well as those who were content with who they are were more resilient. This finding demonstrated that psychological well-being predicts resilience .

Finally, a study by Mahamid, Dana & Priscilla (2021) investigated the relationship between stressful life events and psychological well-being in Palestinian adolescents, as well as the mediating role of resilience. The study found that people with high resilience are less likely to have their psychological well-being impacted by stressful life events. The findings imply that an individual’s level of resilience is significant in determining how well they would cope with stress.

1. Methods
	1. Study Design and Participants

A total of 126 Palestinian health care workers working in medical centers, hospitals, and emergency residing in Jerusalem Governorate who were likely to deal with COVID-19 patients, whether suspected or confirmed participated in the study during the period (10th Jan- 15thFeb. 2022). An online web-based questionnaire was developed using online software (Google forms). HCWs voluntarily participated and completed questionnaires anonymously.

 Participants inclusion and exclusion criteria:

1. Inclusion criteria:

Health care worker (physician or nurse), working in (hospitals, emergency departments, or medical centers), and working in Jerusalem Governorate.

1. Exclusion criteria:

Working in the west bank, or in the occupied regions of 1948, medical student.

* 1. Measures

Sociodemographic variables were collected, such as gender, age, marital status, workplace, and position, HCWs were divided into two categories according to their position: doctor (physician), and nurse, also they were divided into three work places: medical center, hospital, and emergency.

The adult Resilience Measure (ARM-R) was used to assess the level of resilience among health care workers (ARM-R) . This scale consisted of 28- items and the responses on it ranged from (1) “strongly disagree” to (5) “strongly agree as rated on a 5-point Likert scale. To interpret the results, means of 5- points Likert scale was utilized as the following: (1- 1.80) very low level, (1.81- 2.60) low level, (2.61- 3.40) moderate level, (3.41- 4.20) high level, and (4.21- 5) very high level.

Ryff’s Psychological well-being scale was used to assess the level of psychological well- being among health care workers . This scale consisted of 42 items and the responses on it were ranged from (1) “strongly disagree” to (5) “strongly agree as rated on a 5-point Likert scale for the positive items. In contrast, the responses were inverse for the negative items (3, 5, 10, 13, 14, 15, 16,17, 18, 19, 23, 26, 27, 30, 31, 32, 34, 36, 39, 41). To interpret the results, means of 5- points Likert scale was utilized as the following (1- 1.80) very low level, (1.81- 2.60) low level, (2.61- 3.40) moderate level, (3.41- 4.20) high level, and (4.21- 5) very high level, and the reliability and validity was confirmed for all the scales.

* 1. Procedures

The data was gathered from a sample of 126 health care workers in Jerusalem Governorate, Palestine during the covid-19 pandemic. The measures were administered to the participants during the period (10th Jan- 15th Feb. 2022). The purpose of the study was explained to the participants, and they were asked not to write their names or identifying information on any of the questionnaires, to ensure their anonymity and confidentiality. Completing the questionnaire package took approximately 40 minutes.

Questioners were sent to (HCWs) using google forms via closed institutional groups using a variety of social media technologies (WhatsApp and Messenger). This method was used to contact as many (HCWs) as feasible in COVID-19-related quarantine situations, and to adhere to social distancing recommendations, and to take advantage of Palestinians' high percentage of internet use (Palestinian Central Bureau of Statistics, 2019). Finally, questionnaires were collected from health care workers working in Jerusalem governorate using different electronic platforms (Messenger, WhatsApp).

* 1. Statistical Analysis

To answer the study's questions and examine its hypotheses, the researcher used the Statistical Packages for Social Sciences (SPSS-26) program as follows:

Means and standard deviations to answer the first question, validate the study instruments using the "Pearson" correlation coefficients, reliability of study instruments using Cronbach's alpha equation to determine the differences in resilience and psychological well- being according to all independent variables, Scheffe post- hoc test was used the post comparisons between means.

1. Results
	1. Baseline Information

126 health care workers participated in this study, both male and female, females account for 58.7% of the participants, HCWs came from different work places (hospital, medical center, and emergency), 46% of the participants work in hospitals, also HCWs were divided into two categories according to their position: doctor (physician) (n = 81, 64.3%), and nurse (n = 45, 35.7%), most of the participants were 30 years old and under (n = 57, 45.2%) (Table 1).

**Table 1.** | Sociodemographic variables of HCWs.

|  |  |  |  |
| --- | --- | --- | --- |
| Independent variables | Levels of variable | frequency  | Percentage % |
| Gender | Male  | 52 | 41.3 |
| Female  | 74 | 58.7 |
| Age  | Under 30 years | 57 | 45.2 |
| 30- 39 years | 32 | 25.4 |
| 40- 49 years | 22 | 17.5 |
| 50 years and above | 15 | 11.9 |
| Marital status | Married | 63 | 50 |
| Single | 50 | 39.7 |
| Divorced and widowed | 13 | 10.3 |
| Work place | Medical center | 45 | 35.7 |
| Hospital  | 58 | 46 |
| Emergency  | 23 | 18.3 |
| Position | Doctor (physician) | 81 | 64.3 |
| Nurse  | 45 | 35.7 |
| Covid-19 infection | Yes (infected) | 75 | 59.5 |
| No (not infected) | 51 | 40.5 |

* 1. The level of (Resilience and psychological well-being) among health care workers

To answer to this question, means and standard deviations were calculated for the total score of each scale as presented in Table 2.

**Table 2.** | Means, standard deviations and the level of (Resilience, self-esteem, perceived social support and psychological well-being) among health care workers during covid-19 in Jerusalem Governorate (n= 126).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| N | Variables  | Mean | SD | Level  |
| 1 | Resilience  | 4.38 | 0.65 | Very high |
| 2 | psychological well-being | 3.65 | 0.49 | High |

The results shown in table 2 were as the following:

the level of resilience among health care workers during covid-19 in Jerusalem Governorate was very high, as the mean of response for the total score was (4.38).

the level of psychological well-being among health care workers during covid-19 in Jerusalem Governorate was high, as the mean of response for the total score was (3.65).

* 1. The relationship between Resilience and psychological well-being among health care workers

We tested the relationship between Resilience and psychological well-being among health care workers during covid-19 in Jerusalem Governorate, to answer this question Pearson correlation coefficient was used as shown in Table 3.

**Table 3.** | The relationship between Resilience and psychological well-being among health care workers during covid-19 in Jerusalem Governorate (n=126).

|  |  |  |  |
| --- | --- | --- | --- |
| Scales  | Resilience  |  | psychological well-being |
| Resilience  |   | 0.62\*\* |
| psychological well-being |  |  |  |  |

\*\* Significantly correlated at (α ≤ 0.01).

The results shown in table 3 indicated that:

There were statistically positive and significant relationships at (α ≤ 0.01) between resilience and psychological well-being among health care workers during covid-19 in Jerusalem Governorate, as the value of Pearson correlation was (0.62).

**Table 4.** | Summary of simple linear regression (R²) results to determine the most important effects between resilience, self-esteem, perceived social support and psychological well-being (n=126).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Scales  | Resilience  |  |  |  Psychological well-being  |
| Resilience  |  |  |  | 0.386\* |
| psychological well-being |  |  |  |  |

\*\* Significant effect at (α ≤ 0.05).

1. DISCUSSION AND CONCLUSION

This study included some practical implications related to resilience and well-being, other implications may be viable to psychology, the implications of this study are important; because they consider resilience and well-being by explaining them theoretically and exploring the factors affecting them or analyzing components that shape them.

Explaining and analyzing these variables may be significant for (HCWs) because of their important role as COVID-19 frontline responders, hence, to adapt to the job environment, taking charge of the stressful situation, and to gain excess to positive affect and positive functioning. In response, medical facilities should provide special mental health services for (HCWs) during covid-19, also it is important for preventative medicine to be enhanced by clarifying covid-19 guidelines.

Our study investigated the level and the relationship between (resilience and psychological well-being) among health care workers during covid-19 in Jerusalem Governorate. The study found that the level of resilience among health care workers during covid-19 in Jerusalem Governorate was very high, this could be attributed to the fact that (HCWs) workload demands and performance expectations are key sources of stress, which may have created the ability for (HCWs) in Jerusalem Governorate to actively respond to stressful events, adapt to the job environment, and taking charge of the situation, also being obligated to fulfill tasks even under difficult conditions such as the COVID-19 outbreak, by being equipped with the necessary adaptive coping behaviors that involve acceptance rather than avoidance. The level of psychological well-being among (HCWs) was high, which could be attributed to the fact that (HCWs) in Jerusalem governorate were equipped with the necessary coping strategies and behaviors that helped them face the outbreak, which made them a reliable source of protection in the eyes of the community who heavily relied on them, which in turn reflected on their feelings of environmental mastery, personal growth, and their relationship with others. These results are in accordance with which found that MD (medical doctors), NP (nurse practitioners), had the highest resilience scores among (HCWs), also with studies demonstrating that resilience is attributed to social and ideological commitment, along with successful coping.

The results of the second question revealed that there were statistically positive and significant relationships at (α ≤ 0.01) between the resilience and psychological well-being among health care workers during covid-19 in Jerusalem Governorate, as the values of Pearson correlation was (0.62). This result is in accordance with which found that several factors significantly increased the likelihood of at-risk well-being. These included having a lower level of resilience, using support resources, feeling the organization lacked understanding of the emotional support needs of health care workers during the pandemic, this result could indicate that (HCWs) during COVID-19 in Jerusalem had the subjective feeling of being socially supported by their families, friends and the community as a hole, which reflected on their ability to endure and face the pandemic with resilience, and in order not to fail the community that realized that they were the only ones capable of defeating the pandemic, this dynamic context nourished their response system and led to successful adaptation, which boosted their self-esteem, by feeling they were are capable of controlling the pandemic, thus adding value to their work and accomplishments, therefore, they had excess to positive affect and positive functioning, leading to higher levels of psychological well-being.

1. CONCLUSION

Our study indicated that resilience and psychological well-being among HCWs had statistically positive and significant relationship, the study also found that the level of resilience among HCWs was very high, and that the level of psychological well-being among HCWs was high. We hope the results will be helpful for psychological professionals in developing specific policies and mental health advice or services for HCWs, and that covid-19 preventative medicine be enhanced by clarifying covid-19 guidelines.

1. ETHICS STATEMENT

Participants confidentiality and privacy was kept safely, as the study questionnaires did not demand any personal information from the participants as they were not asked to write their names or identifying information on any of the questionnaires to ensure their anonymity and confidentiality, questioners were sent to (HCWs) using google forms, participants were randomly selected, and google forms were sent to (HCWs) via closed institutional groups using a variety of social media technologies (WhatsApp and Messenger), and the participants' personal information (such as name, email, or phone number) was not recorded in their replies in Google Forms.

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