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A National Study on the Psychological Effects Experienced by Healthcare Staff During the COVID-19 Outbreak Pandemic in Iraq

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Abstract

Background: Since the outbreak of the Coronavirus 2019 (COVID-19) has been declared a pandemic, there are increasing reports of the prevalence of psychiatric symptoms observed among health care workers.

Aims: This study investigated the effects of COVID-19 on the mental health of Iraqi healthcare professionals.

Methods: This questionnaire was done after consulting with psychologists and it was approved by the scientific committee at the Al-Yarmouk University College/ Department of the Pharmacy/ Republic of Iraq. Healthcare staff from major hospitals and healthcare centers in the south, middle, and north of Iraq were invited to engage in this study by completing a self-administered questionnaire through social media between May 20 and July 30, 2020. Before registration, all subjects gave their informed consent through the internet. Two options (yes/no) were offered on

the informed consent page. Only those who answered yes were taken to the questionnaire page, and they were free to exit at any moment. Doctors, dentists, pharmacists, nurses, laboratory assistants, and volunteers were among the health care professionals who worked mostly in inpatient, outpatient, and emergency departments.

Results: This short study represented as a questionnaire through social media were statistically significant at ($P < 0.01$ or $P < 0.5$) which included the multi-factors affecting the mental health activity of the health worker.

Conclusion: The majority of the participants' responses were yes in this survey with a high percentage frequency compared to no or sometimes as a high percentage were few. The answers "yes" were represented by the many various factors affecting the psychological and mental state.

Keywords: Healthcare Professionals, The Mental Health of Healthcare Workers, An Outbreak of COVID-19 Pandemic in Iraq

Introduction

The novel coronavirus is a typical 2019 infection (COVID-19) that led to severe acute respiratory coronavirus syndrome (SARS-CoV-2; previously known as 2019-nCoV), which was first discovered in Wuhan City, Hubei Province, China, as a result of an outbreak of respiratory diseases induced by this virus [1]. The WHO was the first to know about this on December 31, 2019. The WHO announced a COVID-19 pandemic a global health crisis on January 30, 2020 [2, 3]. On February 24, 2020, the Iraqi Ministry of Health confirmed the first case of COVID-19 [4]. The disease quickly spread across China and other parts of the world, resulting in a global health crisis [2]. During the immediate aftermath of the infectious outbreak, the mental health of medical and nursing workers was seriously impacted [5]. Fear and anxiety emerged quickly and faded in the early days of the disease, but depression, psychophysiological symptoms, and posttraumatic stress symptoms appeared later and persisted for a long period, resulting in dramatic effects on medical workers [5, 6]. Isolation, high-risk jobs, and interaction with infected individuals are also common sources of trauma [5, 7]. These causes may have influenced Wuhan's medical and nursing staff, resulting in mental health issues [8]. The history of medical personnel reacting to SARS demonstrates that the implications for medical personnel's mental health have not only short-term but also long-term consequences, and that provides support and preparation are critical [7]. To protect mental health, medical professionals, effective and systematic steps must be taken quickly [9]. The Chinese government has taken several steps to relieve the strain on medical and nursing workers in China, including dispatching additional medical and nursing personnel to minimize work intensity, implementing stringent infection management, supplying personal protective equipment, and providing practical advice [8]. Medical personnel agree that such

interventions help protect their mental health based on past reactions to Middle East respiratory syndrome (MERS) [10]. Additionally, mental health professionals in Wuhan are taking steps to minimize the psychological effects of COVID-19 on medical and nursing personnel by forming psychological intervention teams and offering a variety of psychology resources, such as psychological brochures, counseling, and psychotherapy [11]. Simultaneously, awareness, coping strategies for psychological self-help is being disseminated through television news and online media. However, evidence-based mental health programs are preferable, and mental health care effectiveness must be assessed [12].

Materials and Methods

This questionnaire was done after consulting with psychologists and it was approved by the scientific committee at the Al-Yarmouk University College/ Department of the Pharmacy/ Republic of Iraq. Healthcare staff from major hospitals and healthcare centers in the south, middle, and north of Iraq were invited to engage in this study by completing a self-administered questionnaire through social media between May 20 and July 30, 2020. Before registration, all subjects gave their informed consent through the internet. Two options (yes/no) were offered on

the informed consent page. Only those who answered yes were taken to the questionnaire page, and they were free to exit at any moment. Doctors, dentists, pharmacists, nurses, laboratory assistants, and volunteers were among the health care professionals who worked mostly in inpatient, outpatient, and emergency departments. This questionnaire gathered data on demographics, medical records, symptom incidence in the previous month, and the number of patients seen by the team daily.

The prevalence of physical symptoms in healthcare employees, and the links between physical symptoms and psychological effects such as depression, anxiety, stress, and post-traumatic stress disorder (PTSD), were analyzed.

Statistical Analysis

Version (23) of the Statistical Package for Social Sciences (SPSS) was used for data input and data processing. The data have been grouped and tabulated. Frequency data were analyzed using a chi-square independence test. A p-value of ≤ 0.05 was found to be significant.

Results

Out of the 264 healthcare workers who participated in this questionnaire through social media, the results were:

Table 1: Frequency Distribution of the categorical variables (n = 264)

| Gender distribution | Count | Percentage | Chi-Square for Goodness of Fit P-Value |
|-------------------------|------------|--------------|---|
| *Female | 180 | 68.2 | Chi ² value = 34.9091 P-Value < 0.00001 ** Degrees of freedom (df) = 1 |
| Male | 84 | 31.8 | |
| Marital Status | Count | Percentage | P-Value |
| Married * | 160.0 | 60.6 | Chi ² value = 11.879 P-Value = 0.00057 ** df = 1 |
| Single | 104.0 | 39.4 | |
| Have Children | Count | Percentage | P-Value |
| *No | 152.0 | 57.6 | Chi ² value = 6.061 P-Value = 0.014 * Degrees of freedom (df) = 1 |
| Yes | 112.0 | 42.4 | |
| Family members | Count | Percentage | P-Value |
| *2-3 | 176.0 | 66.7 | Chi ² value = 155.273 P-Value < 0.00001 ** df = 2 |
| 4-5 | 76.0 | 28.8 | |
| 6-7 | 12.0 | 4.5 | |
| Geographic distribution | Count | Percentage | P-Value |
| * Iraq/Baghdad Capital | 145 | 54.9 | Chi ² value = 65.886 P-Value < 0.00001 ** df = 2 |
| Iraq's North | 81 | 30.7 | |
| Iraq's South | 38 | 14.4 | |
| Working department | Count | Percentage | P-Value |
| *In patient | 168 | 63.6 | Chi ² value = 112.364 P-Value < 0.00001 ** df = 2 |
| out patient | 60 | 22.7 | |
| Emergency | 36 | 13.6 | |
| Job | Count | Percentage | P-Value |
| *physician | 200 | 75.8 | Chi ² value = 670.545 P-Value < 0.00001 ** df = 5 |
| Laboratory staff | 24 | 9.1 | |
| Pharmacist | 20 | 7.6 | |
| Dentist | 8 | 3.0 | |
| Volunteer | 8 | 3.0 | |
| Nurse | 4 | 1.5 | |
| Total | 264 | 100.0 | ** . P-Value is significant at the 0.01 level (2-tailed). * . P-Value is significant at the 0.05 level (2-tailed). df is the Degrees of freedom |

Table 1: Determine the frequency percentage distribution of categorical variables, and all of these variables were highly statistically significant results in (P < 0.01) with the high-frequency percentage for females, it was (68.2%). About (60.6%) of those who are married and have no children are frequent (57.6%). The total family members consisted of 2

to 3 members (66.7%), most of whom live in the capital, Baghdad (54.9%). The most prominent occupation in this study was inpatient hospital care with a frequency of (63.6%). Eventually, most participants in this study were physicians with a recurrence rate (75.8%).

Table 2: Descriptive statistics of the continuous variables (n = 264)

| Age/ Year | Count | Percentage | Chi-Square for Goodness of Fit P-Value |
|---------------------------------------|------------|--------------|---|
| *20 - 30 | 156 | 59.1 | Chi ² value = 288.12 P-Value < 0.00001** df= 4 Average = 33 |
| 31 - 40 | 56 | 21.2 | |
| 41 - 50 | 40 | 15.2 | |
| 51 - 60 | 8 | 3.0 | |
| 61 - 70 | 4 | 1.5 | |
| Working hours per week | Count | Percentage | P-Value |
| 0 - 16 | 20 | 7.6 | Chi ² value = 144.91 P-Value < 0.00001* * df = 5 Average = 44.53 |
| 17 - 33 | 72 | 27.3 | |
| *34 - 50 | 104 | 39.4 | |
| 51 - 67 | 28 | 10.6 | |
| 68 - 84 | 22 | 8.3 | |
| 85 - 101 | 18 | 6.8 | |
| Hospital employment period in years | Count | Percentage | P-Value |
| 0 - 1.9 | 56 | 21.1 | Chi ² value = 98.6 P-Value < 0.00001* * df= 5 Average = 4.78 |
| *2 - 3.9 | 68 | 25.7 | |
| 4 - 5.9 | 67 | 25.3 | |
| 6 - 7.9 | 8 | 3.0 | |
| 8 - 9.9 | 5 | 1.9 | |
| 10 - 11.9 | 61 | 23.0 | |
| The number of patients seen every day | Count | Percentage | P-Value |
| *3 - 72 | 180 | 68.2 | Chi ² value = 404.98 P-Value < 0.00001* * df= 4 Average = 77.23 |
| 73 - 142 | 39 | 14.8 | |
| 143 - 212 | 37 | 14.0 | |
| 213 - 282 | 4 | 1.5 | |
| 283 - 352 | 4 | 1.5 | |
| Total | 264 | 100.0 | ** . P-Value is significant at the 0.01 level (2-tailed). * . P-Value is significant at the 0.05 level (2-tailed). df is the Degrees of freedom |

Table 2: Represents the proportion of recurrence, additionally, as the mean of continuous variables with a total count, were 264 samples, as, were extremely statistically important results in (P < 0.01). The mean age/year during this study was 44.5 with a high percentage frequency (59.1%) within the age group 20-30 years. the common operating hours per week was 44.5 hours with a high frequency (39.4%) in weekly working hours starting from

thirty-four to fifty hours. the common period of hospital employment was 4.7 years with a high-frequency percentage (25.7%) of the period vary from 2 to 4 years. Finally, the common numeral of hospitalized patients per day was 77.2 with a high proportion was (68.2%) which delineate the patient's count varies from three to seventy-two patients per day.

Table 3: Frequency Distribution of the Factors influencing one's psychological state (n = 264)

| Concerned about being infected with COVID-19? | Count | Percentage | Chi-Square for Goodness of Fit P-Value |
|--|-------|------------|--|
| *Yes | 224.0 | 84.8 | Chi ² value = 128.24 P-Value< 0.00001* * df = 1 |
| No | 40.0 | 15.1 | |
| Restless that your family may infect with COVID-19 as a consequence of your job? | Count | Percentage | P-Value |
| *Yes | 252.0 | 95.4 | Chi ² value = 218.18 P-Value< 0.00001* * df = 1 |
| No | 12.0 | 4.5 | |
| Disquieted regarding medical vehemence? | Count | Percentage | P-Value |
| *Yes | 208.0 | 78.7 | Chi ² value = 87.515 P-Value< 0.00001* * df = 1 |
| No | 56.0 | 21.2 | |
| Worried about co-workers on the front lines (direct contact with COVID-19 patients)? | Count | Percentage | P-Value |
| *Yes | 232.0 | 87.8 | Chi ² value = 151.52 P-Value< 0.00001* * df = 1 |
| No | 32.0 | 12.1 | |

| Disturbed around the latest grassroots prevention and control strategy? | Count | Percentage | P-Value |
|--|--------------|-------------------|--|
| *Yes | 240.0 | 90.9 | Chi ² value = 176.73 P-Value< 0.00001* * df = 1 |
| No | 24.0 | 9.1 | |
| Experience tension as a result of everyday job in a hospital or healthcare unit? | Count | Percentage | P-Value |
| *Yes | 224.0 | 84.8 | Chi ² value = 315.64 P-Value< 0.00001* * df = 2 |
| No | 24.0 | 9.1 | |
| Some times | 16.0 | 6.1 | |
| Feeling more nervous and anxious than usual? | Count | Percentage | P-Value |
| *Yes | 224.0 | 84.8 | Chi ² value = 316.73 P-Value< 0.00001* * df = 2 |
| No | 28.0 | 10.6 | |
| Some times | 12.0 | 4.5 | |
| Restless on the effect of Covid-19 on your work and income? | Count | Percentage | P-Value |
| *Yes | 196.0 | 74.2 | Chi ² value = 62.06 P-Value< 0.00001* * df = 1 |
| No | 68.0 | 25.7 | |
| Infected with Covid-19? | Count | Percentage | P-Value |
| Yes | 80.0 | 30.30 | Chi ² value = 40.97 P-Value< 0.00001* * df = 1 |
| *No | 184.0 | 69.69 | |
| Some of the family members infected with Covid-19 as a result of their contacting you | Count | Percentage | P-Value |
| Yes | 40.0 | 15.1 | Chi ² value = 128.24 P-Value< 0.00001* * df = 1 |
| *No | 224.0 | 84.8 | |
| Easily becoming irritated or frustrated for no apparent reason | Count | Percentage | P-Value |
| *Yes | 156.0 | 59.1 | Chi ² value = 86.18 P-Value < 0.00001** df = 2 |
| No | 36.0 | 13.6 | |
| Some times | 72.0 | 27.2 | |
| Felt afraid as something awful might happen? | Count | Percentage | P-Value |
| *Yes | 148.0 | 56.1 | Chi ² value = 81.82 P-Value < 0.00001** df = 2 |
| No | 28.0 | 10.6 | |
| Some times | 88.0 | 33.3 | |
| Losing interest or enjoyment in previously enjoyed hobbies? | Count | Percentage | P-Value |
| *Yes | 144.0 | 54.5 | Chi ² value = 82.91 P-Value< 0.00001** df = 2 |
| No | 24.0 | 9.1 | |
| Some times | 96.0 | 36.3 | |
| Have insomnia? | Count | Percentage | P-Value |
| *Yes | 124.0 | 46.9 | Chi ² value = 22.18 P-Value= 0.00002** df = 2 |
| No | 68.0 | 25.7 | |
| Some times | 72.0 | 27.2 | |
| Have a poor appetite? | Count | Percentage | P-Value |
| Yes | 72.0 | 27.2 | Chi ² value = 10.18 P-Value= 0.0062** df = 2 |
| *No | 112.0 | 42.4 | |
| Some times | 80.0 | 30.3 | |
| Having adequate rest after completing routine work at the hospital or health care unit? | Count | Percentage | P-Value |
| *Yes | 96.0 | 36.3 | Chi ² value = 1.45 P-Value= 0.483 df = 2 |
| No | 88.0 | 33.3 | |
| Some times | 80.0 | 30.3 | |
| Have trouble focusing on items like reading a newspaper, watching television, or doing your daily work? | Count | Percentage | P-Value |
| *Yes | 104.0 | 39.3 | Chi ² value = 4.36 P-Value = 0.11 df = 2 |
| No | 80.0 | 30.3 | |
| Some times | 80.0 | 30.3 | |
| Felt down, depressed, or hopeless? | Count | Percentage | P-Value |
| *Yes | 128.0 | 48.5 | Chi ² value = 28.73 P-Value< 0.00001** df = 2 |
| No | 60.0 | 22.7 | |
| Some times | 76.0 | 28.8 | |
| Troubled relating to insufficient safety measures? | Count | Percentage | P-Value |
| *Yes | 232.0 | 87.8 | Chi ² value = 151.52 P-Value< 0.00001* * df = 1 |
| No | 32.0 | 12.1 | |
| Experience a lack of basic medical systems daily while working in a hospital or health care Centre? | Count | Percentage | P-Value |
| *Yes | 136 | 51.5 | Chi ² value = 75.64 P-Value< 0.00001** df = 2 |
| No | 24 | 9.1 | |
| Some times | 104 | 39.4 | |
| Have a full PPE at a hospital or a healthcare Centre? | Count | Percentage | P-Value |

| | | | |
|--|--------------|-------------------|---|
| Yes | 60 | 22.7 | Chi ² value = 13.46 P-Value= 0.0012** df = 2 |
| No | 100 | 37.9 | |
| *Some times | 104 | 39.4 | |
| Used personal protection devices outside the house or at work? | Count | Percentage | P-Value |
| *Yes | 208.0 | 78.8 | Chi ² value = 245.82 P-Value< 0.00001** df = 2 |
| No | 32.0 | 12.1 | |
| Some times | 24.0 | 9.1 | |
| Have frequently used sterilization agents at work or at home? | Count | Percentage | P-Value |
| *Yes | 212.0 | 80.3 | Chi ² value = 262.18 P-Value< 0.00001** df = 2 |
| No | 24.0 | 9.1 | |
| Some times | 28.0 | 10.6 | |
| Noticed that society respects or supports various medical care employees? | Count | Percentage | P-Value |
| Yes | 40 | 15.2 | Chi ² value = 62.55 P-Value< 0.00001** df = 2 |
| No | 80 | 30.3 | |
| *Some times | 144 | 54.5 | |
| Maintaining your mental health by doing things you enjoy | Count | Percentage | P-Value |
| *Yes | 184.0 | 69.7 | Chi ² value = 157.091 P-Value< 0.00001** df = 2 |
| No | 40.0 | 15.2 | |
| Some times | 40.0 | 15.2 | |
| Happy with your daily routine work? | Count | Percentage | P-Value |
| Yes | 72 | 27.3 | Chi ² value = 7.64 P-Value= 0.022* df = 2 |
| No | 84 | 31.8 | |
| *Some times | 108 | 40.9 | |
| Total | 264 | 100.0 | ** . P-Value is significant at the 0.01 level (2-tailed). * . P-Value is significant at the 0.05 level (2-tailed). df is the Degrees of freedom |

Table 3: Represents the frequency distribution of the numerous factors influencing the psychological state of health care workers. All results were statistically significant at (P < 0.01 or P < 0.5) except for factors including rest after routine work and difficulty concentrating during the daily activity were not statistically significant at (P 0.05). In this questionnaire study (table 3), most of the questions answers for subscribers through social media were yes with a high percentage frequency compared to no or sometimes as a high percentage were few. The yes answers were being in: Concerned about being infected with COVID-19 with frequency percentage was (84.8%), restless about family that may infect with COVID-19 as a consequence of job with frequency percentage was (95.4%), disquieted regarding medical vehemence with frequency percentage was (78.7%), worry about co-workers on the front lines (direct contact with COVID-19 patients) with frequency percentage was (87.8%), disturb around the latest grassroots prevention and control strategy with frequency percentage was (90.9%), tension as a result of everyday job in a hospital or healthcare unit with frequency percentage was (84.8%), feeling more nervous and anxious than usual with frequency percentage was (84.8%), restless from the effects Covid-19 on work and income with frequency percentage was (74.2%), easily become irritated or frustrated for no apparent reason with frequency percentage was (59.1%), feeling afraid as something awful might happen with frequency percentage was (56.1%), loss of interest or enjoyment in previously enjoyed hobbies with frequency percentage was (54.5%), having insomnia with frequency percentage was (46.9%), feeling (down, depressed, or hopeless) with frequency percentage was (48.5%), troubles relating to insufficient safety measures with frequency percentage was (87.8%), a lack of basic medical systems while daily working in a hospital or health care Centre with frequency percentage was (51.5%), uses personal protection devices outside the house or at work with frequency

percentage was (78.8%), use frequently sterilization agents at work or at home with frequency percentage was (80.3%), finally keeping the mental health by doing things that enjoy like (eating healthily, drinking water sensibly, caring for family, doing meditation or yoga or sport, doing something that interested in, keeping in touch with family and loved ones, using social media, being active, accepting the situation in any way and trying to sleep an early night) with frequency percentage was (69.7%). While in this questionnaire the answers no with a high percentage rate were being in some of the following questions: Infection with Covid-19, infection of the family members with Covid-19 as a result of their connection and a poor appetite. Ultimately, the answers sometimes at a high percentage rate were being in some of the following questions: Having a full PPE at a hospital or a healthcare Centre, the society respecting or supporting various medical care employees and the happiness with daily routine work.

Discussion

This short study represented as a questionnaire through social media were statistically significant at (P < 0.01 or P < 0.5) which included the multi-factors affecting the mental health activity of the health worker represented in table 3: disquiet, nervous and disturbing due to the COVID-19 infection, family infection, medical vehemence, worry about co-workers on the front lines (direct contact with COVID-19 patients) and the latest grassroots prevention and control strategy, these findings agree with previous studies [13]. Tension as a result of everyday job in a hospital or healthcare unit, these results are compatible with earlier studies focused on the effects of tension at work on performance [14]. Feeling more nervous and anxious than usual, these findings are consistent with previous studies concentrated on the nervousness and anxiety [16]. Restless from the effects of Covid-19 on work and income, these findings are consistent with previous studies on

socioeconomic impacts during the pandemic of Covid- 19 [16]. Easily become irritated or frustrated for no apparent reason, feeling afraid as something awful might happen [17]. loss of interest or enjoyment in previously enjoyed hobbies, these results match with earlier studies concerning the symptoms of depression during the pandemic [18, 19]. Sleep disturbance, such findings led to previous studies about the impact of Covid- 19 on the sleep [20, 21, 22]. Feeling (down, depressed, or hopeless), these results correspond with previous studies regarding the effects of Covid- 19 pandemic on mental health [24]. Troubles relating to insufficient safety measures such findings correlate with previous studies on preventive measure practices for the COVID-19 in the health care system [25]. lack of basic medical systems while daily working in a hospital or health care Centre, these results match previous studies about defect of health systems to face the challenges of Covid- 19 Pandemic [26, 27]. Uses personal protection devices outside the house or at work, these findings correspond to previous studies on using of protections devices during Covid- 19 outbreak [28, 29]. Frequent using of sterilization agents at work or at home, such results are consistent with previous studies of using of disinfecting agents during Covid- 19 pandemic [30, 31]. keeping the mental health by doing things that enjoy like (eating healthily, drinking water sensibly, caring for family, doing meditation or yoga or sport, doing something that interested in, keeping in touch with family and loved ones, using social media, being active, accepting the situation in any way and trying to sleep an early night), these results fit in with previous studies about maintaining the wellbeing [32].

Conclusion

This questionnaire showed that most of the participant's answers were yes with a high percentage frequency compared to no or sometimes as a high percentage were few. The answers "yes" were represented by the many various factors affecting the psychological and mental state of health care workers that cause depression, stress, nervousness with anxiety, trouble focusing, frustration, and insomnia. While regarding the maintaining of mental health through doing an interesting activity, the answers were yes with a high-frequency (69.7%) percentage and highly significant statistic.

Recommendations

COVID-19 at present time is a worldwide pandemic, causing physical, emotional, and psychological damage to healthcare workers around the world. Health personnel's mental welfare should be given special consideration. Under a strong disease prevention and control strategy, the community mental health care structure, online mental health service, and other interventions can play a key role in reducing psychological consequences.

Mental health activity

- Eating healthy
- Drinking water sensibly
- Caring for Family
- Doing meditation or yoga or sport
- Doing something interested in
- Keeping in touch with family and loved ones
- Using social media
- Keeping active

- Accepting the situation in any way
- Sleeping an early night

Declaration of Important Conflict of Interest

The authors' attitude in this study, they have no known competing financial interests or personal ties that may have influenced the work presented in this project.

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