A comparative analysis of stress, anxiety, and social well-being of working mothers and stay-at-home mothers during the covid pandemic

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Abstract:

BACKGROUND: The role of mental health is crucial in maintaining the dynamism and productivity of any given society. In contemporary times, a significant proportion of the workforce is comprised of women and mothers. Working in healthcare facilities, where exposure to pathogenic agents is an everyday nuisance, can have detrimental effects on mothers' stress and anxiety levels. Furthermore, such exposure can also endanger the health of both the family and society. Conversely, the employment of mothers could positively impact their social well-being. The primary objective of this study is to assess and compare the stress, anxiety, and social well-being scores of mothers employed in healthcare facilities and stay-at-home mothers during the COVID pandemic.

MATERIALS AND METHODS: This study is a cross-sectional analysis of 246 mothers, equally divided into two groups: Mothers who work in health centers and stay-at-home mothers (123 individuals in each group). The study was conducted from 2021 to 2022, a multistage sampling method was utilized and two questionnaires were administered: The DASS 21 (21 questions) and the social well-being questionnaire (48 questions). The data were analyzed using SPSS 18, and descriptive and analytical tests (Independent Samples T-Test, Mann-Whitney) were employed.

RESULTS: The mean age was 35.7 ± 7.1 for working mothers and 34.3 ± 6.3 for stay-at-home mothers. The average stress score for employed mothers was 5.72 ± 4.7, and for stay-at-home mothers, it was 7.16 ± 4.3, which indicates a statistically significant difference in stress levels between the two groups ($P = 0.04$). However, the two groups had no significant difference in the mean anxiety score ($P = 0.08$). The mean score for social well-being was 165.5 ± 18.4 for working mothers and 162.17 ± 21.2 for stay-at-home mothers. This difference was not statistically significant ($P = 0.18$). Except for the social acceptance dimension ($P = 0.003$), no statistically significant differences were observed in the social well-being dimension between the two groups.

CONCLUSION: The social acceptance of working mothers appears to be greater than that of stay-at-home mothers. Higher social acceptance suggests that they hold a more positive outlook on people and are at ease in social situations, which may have helped to alleviate their stress and anxiety.

Keywords:

Social well-being, stay-at-home mother, stress, working mother

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Introduction

Mental health plays a crucial role in maintaining the dynamism and efficiency of any given society, and it is considered a key indicator of social well-being.[1] Good mental health can result in happiness and contentment, while its absence can cause feelings of unease, tension, hopelessness, and concern.[2] According to a WHO report, a quarter of the population experiences one or more neuroses at some point in their lives.[3] Research conducted in

Iran indicates that approximately 20% of the populace is experiencing mental health issues.[4] The state of mental health is subject to various factors, including contracting illnesses.[5] The advent of the current century has witnessed the emergence of several novel corona-like diseases, including Covid-19.[6] In recent times, extensive and prolonged quarantine measures, financial instability, anxiety about contracting the virus, and uncertainty about the future followed by the COVID-19 pandemic have resulted in detrimental impacts on mental health; all of these have created an unprecedented need for research in this area.[7] During pandemics, medical personnel frequently experience prevalent negative emotions of stress.[8] Recent in-depth research on individuals at risk of contracting the Coronavirus, such as healthcare workers, has produced specific data concerning negative feelings: the spread of stress 73.4%, depression 50.7%, stress 44.7%, and insomnia 73.4%.[9] Previous research has shown a clear correlation between epidemic illnesses and suicide, post-traumatic stress disorder (PTSD), and anxiety.[10,11] According to an investigation conducted by Lai *et al*.[12] (2020) on healthcare personnel, it has been determined that a significant proportion of the participants show symptoms of anxiety, stress, insomnia, and mental distress. In addition, most participants had experienced considerable clinical distress and anxiety during the spread of infectious diseases.[13] Another study also indicated that stress, anxiety, and depression are more prevalent among women than men during COVID-19.[14] Experiencing loss in individuals' social health is yet another adverse effect of the COVID-19 pandemic in recent years. The term *social well-being* refers to a person's capacity to fulfill their social responsibilities,[15] their recognition and assessment of their abilities within a particular society, and the quality of their social interactions.[16]

As a constituent of overall health, social well-being holds a significant and far-reaching position in conjunction with mental health; It involves social acceptance, social actualization, social integration, social contribution, and social coherence.[17] The study by Haery *et al*. (2015) titled "Factors Influencing the Social Health of Employees of the Ministry of Health and Medical Education in Iran" revealed that most participants obtained an average score concerning their social well-being. However, 17.8% of the participants scored even lower in this regard. In the meanwhile, the results of another study conducted by Fallahzadeh *et al*.[18] (2013), which aimed to compare depression, anxiety, and stress among employed housewives in Shiraz, demonstrated a higher level of stress among housewives compared to employed women. Moreover, in a separate study, it was concluded that although there is a significant correlation among the state of social well-being, gender, education, and residential neighborhood ($P < 0.05$), there is no significant

relationship among the age group, marital status, and job title.[19] The findings of yet another study by Omidi *et al*.[20] (2000) titled "An analysis on social well-being role on increase of life satisfaction" demonstrates that social well-being directly affects people's satisfaction with life. In recent times and with the onset of the pandemic, working in healthcare centers has resulted in a surge in stress levels and a decline in social well-being, particularly among mothers. The root cause of this phenomenon lies in the increasing exposure of medical personnel to pathogens followed by their close contact with their loved ones, especially children. This issue not only poses a threat to the well-being of mothers but also jeopardizes the well-being of families and society.[21] Close contact with patients, especially in recent years during the outbreak, could heighten stress levels in both working women and stay-at-home mothers. Considering the adverse effects of stress and anxiety on individuals' well-being, particularly in the context of the Covid-19 pandemic, the researcher decided to investigate the extent of stress and anxiety experienced by employees in healthcare centers and evaluate their social well-being. In doing so, the researcher intends to investigate the impact of the occupation of working mothers on their mental well-being with great precision.

Materials and Methods

Study design and setting
This study employed a cross-sectional design and recruited employed mothers affiliated with the University of Medical Sciences (healthcare workers) and stay-at-home mothers willing to participate in the research.

Study participants and sampling
The participants' characteristics comprised individuals who resided in Khoram Abaad, were married, aged between 24 and 45, did not exhibit any psychological disorders requiring treatment, expressed a willingness to participate, and possessed a basic level of literacy to complete the questionnaire. It is necessary to mention that the study excluded questionnaires that were incomplete.

This study took on a multistage cluster sampling methodology. Initially, 22 out of 44 centers were chosen based on their geographical distribution. Subsequently, a probability sampling technique was employed to select several healthcare centers. The data was then gathered from two groups comprising 123 participants, resulting in a total of 246 individuals. Through the contact information available in the mothers' records at the centers, the researcher calls them to inform them about the objectives of the study. Following this, the researcher obtained their consent and assured them of

the confidentiality of their personal information. Then, the participants were invited to attend the designated center to complete the questionnaire. During the weekdays, the questionnaires were filled out by working mothers and stay-at-home mothers at the centers, and collected through convenience sampling.

Data collection tools ans and techiniques
The research methodology employed in this study involves utilizing a set of questionnaires, namely a demographic questionnaire, a DASS 21 questionnaire, and a social well-being questionnaire, as the primary data-gathering instruments.

The stress and social well-being questionnaire in this study has been tested for validity and reliability. The Cronbach's alpha coefficient was utilized to assess the reliability of various dimensions of social well-being. The results indicate that the social actualization dimension, consisting of seven questions, yielded a Cronbach value of 70%. The social coherence dimension, comprising nine questions, yielded a Cronbach value of 69%. The social integration dimension, consisting of nine questions, yielded a Cronbach value of 63%. The social acceptance dimension, comprising eleven questions, yielded a Cronbach value of 75%. The social contribution dimension, consisting of twelve questions, yielded a Cronbach value of 60%. Finally, the whole questionnaire, consisting of 48 questions, yielded a Cronbach value of 90%.

To evaluate the degree of stress, a DASS 21 survey was utilized, which pertained to the research goals and produced a Cronbach coefficient of 0.78%. Afterward, the collected data was analyzed by SPSS 18. This study utilized descriptive statistics, independent Samples T-Test, Mann-Whitney, and Chi-square.

Ethical consideration
Prior to the commencement of the study, the participants were apprised of the study's objectives, assured of the confidentiality of their personal information, and requested to provide written consent. Individuals suffering from mild to severe depression were then referred to the psychologists at their local center. This study is registered with the ethics code of IR.MUI.RESEARCH.REC.1400.26 at the Isfahan University of Medical Sciences.

Results

This study examined a total of 246 participants who were divided into two groups, namely working mothers and stay-at-home mothers. All of the employed mothers have held positions as healthcare workers within the centers. The average age of the working mothers was 35.7 ± 7.1,

and the average age of the stay-at-home mothers was 34.3 ± 6.3. The rest of the participants' information is cited in Table 1.

Average stress scores analysis resulted in 5.72 ± 4.7 for working mothers and $7.16 \pm \pm 4.3$ for stay-at-home mothers. The Mann-Whitney analysis revealed that this difference between the two groups is statistically significant, indicating that stay-at-home mothers experience higher levels of stress ($P = 0.04$). The findings did not reveal any significant difference in the levels of anxiety between the two groups ($P = 0.08$) [Table 2].

Though utilizing Mann-Whitney and Independent Samples T-Test, it was concluded that the average scores of well-being for working mothers and stay-at-home mothers were 165.5 ± 18.4 and 162.17 ± 21.2, respectively, and there was no significant difference ($P = 0.18$). With the exception of the social acceptance dimension ($P = 0.003$), there were no statistically significant differences observed in the social well-being dimension between the two groups [Table 3].

Discussion

This study demonstrated that stay-at-home mothers experience higher levels of stress, whereas, in terms of social well-being, the mean score for social acceptance was higher for working mothers.

The unprecedented nature of COVID-19 and the subsequent implementation of quarantine measures have significantly disrupted individuals' daily routines. Furthermore, COVID-19 has the potential to impact the psychological well-being of individuals in addition to their physical health.[22] Amidst the COVID-19 pandemic, a broad spectrum of psychological ramifications has emerged across individual, communal, national, and global contexts. At the personal level, individuals are afraid of contracting the virus, desperation, stigmatization, and death.[23] The adverse effect of this pandemic on individuals' psychology has the potential to grow into a widespread psychological crisis.[24] These COVID-induced alternations of people's lives could take their toll on mental health and function, potentially leading to the onset of anxiety, stress, disorientation, social exclusion, and depression, all of which could manifest among working mothers, especially healthcare workers.[25-27]

With the aim of evaluating healthcare personnel stress levels, Wang *et al*.[28] (2020) conducted a study on 1208 personnel who were providing care to COVID patients. Their results indicated lower stress levels among healthcare personnel. The main reason for their stress was attributed to their concerns about themselves and

Table 1: Demographic characteristics of working mothers and stay-at-home mothers

Demographic Variables	Statistical Analysis	Group (Mean±standard deviation)	
	P	Stay-at-home	Working
Age	0.077	34.3±6.3	35.7±7.1
Years married	0.082	11.3±6.6	11.2±7.5
Husband's age	0.091	38.2±6.7	38.8±7.5
Number of pregnancies	0.066	2.2±1.02	1.9±0.99
Number of births	0.058	2.07±0.95	1.7±0.85
Number of children	0.068	2.03±0.92	1.6±0.79
Youngest child's age (months)	0.055	46.5±48.5	66.1±61.9

Table 2: Comparative analysis of the means pertaining to stress, anxiety, and depression levels among stay-at-home and working mothers

	Statistical analysis	Group			
	P	Stay-at-home		Working	
		Max - min	Mean±standard deviation	Max - min	Mean±standard deviation
Stress score	0.04	0-18	7.16±4.3	0-18	5.72±4.7
Anxiety score	0.08	0-17	4.3±3.5	0-19	3.7±3.9
Depression score	0.15	0-19	4.61±4.2	0-17	3.96±4.1

Table 3: Statistical and comparative analysis of the means pertaining to the dimensions of social well-being in the two groups of working mothers and stay-at-home mothers

Social well-being	Statistical analysis	Group			
	P	Stay-at-home		Working	
		Max - min	Mean±standard deviation	Max - min	Mean±standard deviation
Social acceptance	0.003	28-55	39.7±5.1	29-55	40.77±4.6
Social actualization	0.71	11-35	22.2±4.6	11-35	21.98±5.1
Social integration	0.42	17-45	29.06±4.6	19-41	29.41±4.3
Social contribution	0.5	19-60	40.31±6.1	25-60	41.19±5.6
Social coherence	0.19	19-45	30.99±5.3	20-44	32.49±4.7
Social well-being total score	0.18	112-235	162.17±21.2	123-233	165.5±18.4

their families contracting the virus and dissatisfaction with the lack of personal preventive gear. This issue was largely resolved following the provision of appropriate equipment to the personnel; this result is in accordance with the results of our study. Meanwhile, in a separate investigation carried out in China, the prevalence of psychological distress, including stress and anxiety, was found to be alarmingly high during the COVID-19 pandemic[29]; this result doesn't agree with our findings. The reason for this disagreement could be found in the fact that we had a smaller study population and the one-year gap between the outbreak and our data collection. These might have allowed individuals to acquire information regarding the disease, its mode of transmission, and treatments, leading to a reduction in their anxiety levels.

According to some studies, mental disorders are more prevalent among healthcare personnel than the general public.[30] Similarly, Lai J *et al*. (2020) conducted a poll of 1257 nurses and doctors in Wuhan and other cities in China, through which they concluded that half of the participants have indications of depression. Also, the spread of severe psychological distress among healthcare

workers was calculated to be 12.6% in Wuhan and 7.2% in areas outside of Wuhan, suggesting that the work environment has a significant impact on stress levels.[13] Since the outbreak of COVID-19, anxiety and stress have been identified as the most prevalent psychological disorders, followed by distress, stress, and insomnia, which were common psychological complications.[31] Ji *et al*.[32] (2017) have also recorded these results. Several studies have indicated that an increased number of work shifts in healthcare facilities,[33] personal history of psychological disorders,[34] and chronic medical conditions may heighten the likelihood of developing depression. Moreover, femininity and nursing are significant factors in the emergence of depression.[35] The findings of these studies are incongruent with our own conclusions, and this disparity could be attributed to the contextual factors of the work environments of our participants. Our participants were the personnel at healthcare centers and local health departments; however, the participants in the aforementioned studies were hospital employees who were in direct contact with COVID patients.

Pieces of evidence suggest that there is a direct relation between the outbreak of pandemics and a surge

in individuals' stress and anxiety levels.[36,37] This relationship has been a tangible experience, especially for healthcare professionals, both during and after pandemics.[38] Studies show that, during the COVID-19 pandemic, 20%-44% of adults have reported experiencing clinical levels of stress and anxiety,[39-41] although our findings do not align with this trend. Khademian *et al.*[42] (2021) conducted a study to assess depression, stress, and anxiety level and their consequences in the COVID-19 pandemic in the Iranian context. They found out that levels of anxiety, stress, and depression have soared in the given period, and about 15% of participants are suffering from severe depression.

The potential explanation for the discrepancy between our findings and those of other studies is that those studies were conducted in the very early days of the outbreak. That is, in the initial stages of the pandemic, the scarcity of information about the virus, treatments, and vaccines which had resulted in a rise in stress and anxiety levels among the public, particularly healthcare professionals.

Ultimately, our findings revealed that working mothers have a higher level of social well-being than stay-at-home mothers; this difference, however, was not statically significant. On the other hand, the social acceptance score was significantly higher for working mothers compared to stay-at-home mothers. And it makes sense to say that working mothers have a higher level of social acceptance since social acceptance is defined as having "Positive attitudes toward people: acknowledge others and generally accept people, despite others' sometimes complex and perplexing behavior."[43] It is highly probable that the nature of the profession of healthcare mothers has caused a higher level of social acceptance which agrees with our findings.

In a study evaluating the relationship between social health and stress of assisted reproductive techniques in 202 infertile women, Panahi *et al.*[44] (2020) concluded that there is no significant relationship between stress and social well-being scores. Their findings were consistent with ours.

Conclusion

The global outbreak of SARS-CoV-2 and the subsequent surge in infections and fatalities during the initial stages of the pandemic had resulted in significant levels of stress and anxiety, particularly among mothers. The dearth of personal preventive gear, the prolonged duration of the pandemic, long working shifts in COVID-19 wards, insufficient efforts to raise public awareness, and the proliferation of false news and misinformation through social media were contributing factors that exacerbated the already fragile mental and psychological well-being of individuals. It seems that the passage of time and the availability of more accurate and reliable information about COVID have led to a decrease in stress and anxiety levels, particularly among healthcare workers.

Regular access to trustworthy information regarding preventative measures and treatment options, as well as having higher social acceptance, could be two contributing factors that led to the lower stress level observed in healthcare-working mothers. It is recommended that, in addition to efforts aimed at diagnosing and treating individuals afflicted with the coronavirus, significant and extensive measures should be taken to enhance the mental well-being of members of society, particularly stay-at-home and working mothers.

Conflicts of interest
There are no conflicts of interest.

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