Economic Inflation and Occupational Stress: Understanding Psychological Distress Among Healthcare Workers

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Abstract- Economic Inflation has placed a unique burden on healthcare workers, increasing psychological distress and changing their professional experiences. This study assesses levels of stress and anxiety in healthcare workers, namely medical interns, nurses, and paramedics, before and after the economic crisis, while exploring factors that influence their mental health. A cross-sectional study was conducted among 180 healthcare workers in a hospital in Tehran, Iran. They completed a questionnaire containing the Kessler Psychological Distress Scale (K10) about their stress before and after the crisis, which coincided with the COVID-19 pandemic situation. Some demographic characteristics, such as occupation title, marital status, gender, and age, have been explored in order to find their possible relation to the variation of anxiety state. The study exposed different responses to stress among professional groups. Medical interns showed the highest increase in stress level (55.4%), while paramedics (16%) and nurses showed comparatively stable levels (8.9%). Marital status significantly influenced anxiety; married respondents exhibited a higher increase in stress level (40%) compared with singles (26%, *P*=0.04). No significant associations were found between changes in stress level and age (*P*=0.12) or sex (*P*=0.07). 35.5% of participants showed an improvement in stress levels, while 30% experienced a worsening, and 34.5% did not change significantly. These findings underline the huge psychological impact of the financial instability on healthcare workers, hence the need to emphasize targeted mental health interventions. Programs focusing on stress management, resilience building, and professional support are crucial for enhancing the well-being of healthcare professionals during economic crises.

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Introduction

The recent economic inflation has created new challenges that are impacting healthcare and education (1,2). Economic instability has had considerable effects on both healthcare and medical education systems, increasing tuition fees, decreasing financial support, and exacerbating financial and psychological stress (3). Medical students and healthcare workers, who will be the main components of the healthcare system, are under even more pressure to manage personal financial problems, which will impact their psychological and educational situations (4,5).

Health care workers have been prone to mental health problems such as anxiety, depression, and burnout due to the stress of their work around the clock (6,7). However,

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economic uncertainty heightened these tensions considerably (4). Studies have shown that during these times, levels of stress and anxiety among medical students have risen, and added to even further exacerbated by uncertainty regarding their studies, concern about budget cuts, and stress-induced burnout (8).

The increasing financial pressure has led many to worry about the psychological effects on students (9). Research in the capital of Portugal demonstrated that even after a reduction in salary and an increase in workload, the majority of doctors did not substantially change their work hours or emigrate. However, it is notable that doctors who had good working conditions and patient care were more inclined to retain or increase their working hours (5).

The economic hardship can also disrupt education and leave healthcare professionals, as well as the population in general, at high risk of mental illness (10,11). The uncertainty inherent in such crises has imposed special emotional and psychological stresses on medical students (10). In Iran, a research indicated that medical interns are more psychologically stressed than residents, probably because of their relatively limited experience and fewer mechanisms of coping with such crises (12).

During this period of utmost financial difficulty, the financial crisis has underscored the necessity of resilience and adaptive coping among individuals, including health professionals (10,13,14). Budgeting behavior, the use of financial counseling, and adherence to ritualized routines are effective at minimizing economic stress (4,13,15). Moreover, the heightened levels of stress generated by economic insecurity, along with the detrimental effect this has on academic performance, illustrate the need for an institutional response. This can include expanding financial aid programs, providing workshops on financial literacy, and incorporating mental health counseling to address the psychological consequences of economic hardship (4,14).

The Kessler Psychological Distress Scale, also known as the K10, has proven to be a highly useful measure of the psychological impact on health professionals, as it is easy to use and has high reliability (16). This 10-item instrument is designed to assess symptoms of depression and anxiety that have been present over the last month, providing a general outline of an individual's mental health state (16,17). Evidence for its validity in screening for differences in levels of psychological distress, from none to severe, has been derived from research in a range of healthcare populations. It is used in assessing mental health burden in various scenarios, including during the COVID-19 pandemic, as well as among healthcare workers, such as doctors, nurses, paramedics, and medical students (16,17).

This article presents the dual impact of financial strain on the psychological well-being of health workers and their performance. This paper aims to synthesize evidence from various studies to shed light on the need for systemic reforms within medical education, ensuring enhanced resilience and holistic development, particularly during times like these.

Materials and Methods

Study design and setting

This is an analytical, cross-sectional study carried out at FiroozAbadi Hospital in Tehran, Iran. The present study aims to assess psychological distress among healthcare workers, including medical students, nurses, and paramedics, in relation to the economic instability that worsened during the COVID-19 pandemic and its subsequent period. Data collection was conducted using self-administered questionnaires, and participants were classified into four levels of stress: minimal, mild, moderate, and severe.

Participants

A total of 180 participants were recruited for the study. The inclusion criteria were that participants had to be healthcare workers actively involved in patient care. Three distinct professional groups were represented: medical students, nurses, and paramedics. In addition, demographic variables, including job role, gender, and marital status, were collected to examine their association with levels of psychological distress.

Research instruments

The primary tool used was the Kessler Psychological Distress Scale—K10, a valid and widely used instrument for assessing mental health. The K10 has ten items, which are rated on a five-point Likert scale from "none of the time" to "all of the time," with total scores indicating levels of distress: minimal (0-7), mild (8-15), moderate (16-24), and severe (25-40). The 10-Item Kessler Psychological Distress Scale, also known as the K10, was developed by Kessler in 1992 to measure psychological distress in the general population. 16,17 The scale consists of 10 items on a 5-step scale, ranging from 0 (never) to 4 (always). Scores on the scale range from 0 to 40, with higher scores indicating greater psychological distress. This Persian version of the scale demonstrated acceptable validity and reliability in Iranian society, as

reported in a study by Yaghubi *et al*., Confirmatory factor analysis yielded factor loadings ranging from 0.65 to 0.84. The optimal cut-off point for the K-10 was 8, with a sensitivity of 81%, specificity of 80.5%, and an overall misclassification rate of 16.5%. The cut-off range for maximum sensitivity (100%) was 1, while for maximum specificity (100%), it was 27. The reliability analysis showed strong internal consistency, with Cronbach's alpha at 0.93 and the Spearman-Brown coefficient at 0.91 (18).

Data collection

A standard questionnaire was used to survey these participants in assessing their psychological distress state during and after the crisis period. The distribution of questionnaires was conducted during scheduled shifts to ensure accessibility and maximize the response rate. We chose random dates and hours to cover all shifts and types of patients and workloads as well. All questionnaires were completely confidential and anonymous.

Variables and analysis

The study analyzed the scores of psychological distress in different time frames. Cochran's formula was used to calculate the number of participants. Based on similar previous studies, the estimated proportions are *P*=44%, q=56%, and d=0.08. The estimated sample size is approximately 148, which is consistent with our sample size of 180 people (19). The stress levels were also compared based on job category (medical students, nurses, and paramedics), gender (male vs. female), and marital status (married vs. single). All the statistical analyses were done using SPSS software, version 21. Descriptive statistics summarized participant demographics and stress levels, while independent t-tests and one-way ANOVA were used to evaluate differences between groups. Significance was considered as 0.05.

Results

This study recruited 180 healthcare workers. The mean age of participants was 27.5±4.4 years, with an age range of 24 to 42 years. There were 77 men among participants, making up 42.8% of the population, and 103 participants were females, which made up 57.2% of the population group.

As for profession, 74 participants were medical interns (41.1%), 56 were nurses (31.1%), and 50 were paramedics (27.8%). Concerning marital status, 130 participants (72%) were single, while 50 participants (28%) were married.

Based on the data, the anxiety and stress levels are:

Table 1. Distribution of stress levels among healthcare workers during and after the COVID-19 pandemic

	Minimal	Mild	Moderate	Severe
In the pandemic	43(23.1%)	41(22.8%)	37(20.6%)	59(32.8%)
After the pandemic	23 (12.8%)	28(15.6%)	68(37.8%)	61(33.9%)

Changes in stress levels

The analysis of changes in stress levels revealed three main trends:

- Improvement in stress levels was noted in 64 participants (35.5%).
- Increasing stress levels were reported in 54 participants (30%).
- No significant difference in stress was seen among 62 participants (34.5%).

Change in stress level by profession

Looking across the data by professional category, some clear trends emerge:

Among medical interns, 55.4% reported an increase in stress levels, while 31.6% experienced a decrease, and 23% noticed no change at all.

In paramedics the stress levels rose in 16% of the examinees, decreased in 46%, and remained the same in 38%.

In the nursing group, stress levels increased in 8.9%, decreased in 44.6%, and remained unchanged in 46.4%.

Although there was some variation across professions, analysis of variance revealed that the type of job undertaken was not significantly associated with changes in stress and anxiety (*P*=0.02).

Relationship between stress levels and demographics

The data demonstrated no significant association between age and changes in anxiety levels, *P*=0.12. Changes in anxiety scores were greater for men (38%) compared with women (25%), but the difference did not reach statistical significance (*P*=0.07).

Regarding marital status, the single and married participants showed a significant difference. Among the

single ones, 26% reported an increase in their anxiety level, while among the married participants, 40% reported increased anxiety. This difference was statistically significant (*P*=0.04).

Table 2. Changes in stress levels by professional group

	No change	Improve	Worsen	Total	*P*
Interns	17(23%)	16(21.6%)	41(55.4%)	74(100%)	
Paramedics	19(38%)	23(46%)	8(16%)	50(100%)	0.02
Nurses	26(46.4%)	25(44.6%)	5(8.9%)	56(100%)	

Table 3. Association between demographic characteristics and changes in stress levels

		Null	Improvement	Worsening	*P*
Age		27.9±4.7	28.2±4.1	26.2±4.2	0.12
Sex	**Male**	23(30%)	24(32%)	30(38%)	0.07
	Female	39(37%)	40(38%)	24(25%)	
Marital status	**Single**	43(33%)	53(41%)	34(26%)	0.04
	Married	19(38%)	11(33%)	20(40%)	

Overview

The study focuses on the diverse experiences of stress and anxiety among healthcare workers during an economic downturn, as well as the distinctions in professional roles and marital status. While some reported an improvement in stress levels, others experienced deterioration, and some saw no change. Therefore, it is essential to start targeted mental health interventions toward these workers, especially at times of crisis.

Discussion

Our study highlights the psychological burden that healthcare workers, including medical interns, nurses, and paramedics, have faced during the COVID-19 pandemic, a time of financial crisis. The findings are consistent with previous research showing the far-reaching effects of the pandemic and economic hardship on mental health and the differential levels of stress and anxiety identified across professional and demographic cohorts (9,10). The finding among 35.5% of respondents may reveal an adaptation effect of the crisis over time and improvement in the level of coping. 30% of the population reported increased stress levels, though, which further emphasizes the continued challenges that health professionals have to face. The financial crisis in Greece, Portugal, and Cyprus led to a decrease in health workers' wages, which resulted in increased workloads, staff reductions, and migration, raising concerns about the efficiency of healthcare systems in these countries (20).

Differences in stress levels are notable. The highest increase in stress, at 55.4%, was found among medical interns, likely due to their younger age, limited clinical experience, and dependence on their families. It is also important to note that the increase in this trend may be due to the growing responsibilities of medical students over time. Relatively lower increases in stress levels were observed for paramedics, at 16%, and even smaller for nurses, at 8.9%, perhaps because they have already assumed well-defined roles and are more experienced in critical situations. This agreement is consistent with observations made by other studies, which indicate that professional experience plays a primary role in decreasing stress related to crises (20).

The insignificant correlation in the type of employment suggests that personal resilience and work environment support may be essential to the diffusion of stress among the category of professions. However, the statistically significant relationship found between marital status and levels of anxiety (*P*=0.04) points to further vulnerabilities in the married population, as this group possibly undergoes more stress due to pressures at work and family responsibilities.

Similarly, the lack of significant associations between age, sex, and changes in stress, with *P* of 0.12 and 0.07, would imply that psychological distress during the crisis was relatively evenly distributed among these groups. More careful investigation is indeed called for regarding subtle differences, such as the greater changes in anxiety among men (38%) compared to women (25%). Prior literature has indicated that gender-specific stressors, such as caregiving responsibilities or social expectations, may be important contributors to these disparities (21).

This study supports the evidence on the mental health impacts of financial insecurity. The K10 enabled a comprehensive assessment of stress and anxiety levels across different demographic and professional subgroups,

thereby helping to explain the diverse experiences faced by healthcare workers. Similar studies conducted in Jordan using comparable methodologies have underlined the importance of actions to deal with mental health challenges both during and after public health emergencies (22).

Future research should also focus on the long-term psychological effects of economic hardship on healthcare workers, as well as the effectiveness of interventions. To protect the well-being of healthcare workers against such crises, there should be organizations that foster improvement in coping mechanisms, psychological support, and building resilience.

The financial insecurity during the COVID-19 pandemic and afterward had a significant impact on the psychological well-being of healthcare workers, including medical interns, nurses, and paramedics (2,13). This study found significant differences in stress levels before and during the crisis period, thus highlighting experiences of different professional and demographic groups. Medical interns exhibited the highest increase in stress levels, which can be attributed to their limited clinical experience and financial vulnerability during times of crisis. On the other hand, paramedics and nurses exhibited more stable levels of stress, which can be considered an indication of the benefits of experience and professional resilience.

The results also indicated that marital status had a significant effect on psychological outcomes, where married participants recorded high anxiety levels due to the fact of more family responsibilities. On the other hand, age and sex did not have a statistically significant correlation with differences in stress, indicating that the psychological impact of the crisis did not know any demographic boundaries.

While there has been some improvement in stress levels in participants, the persistent distress of a significant proportion of the population emphasizes the need for targeted mental health interventions. The institution of workplace support systems, stress management training, and accessible psychological services is crucial to dealing with the mental health challenges of healthcare workers in times of crisis. Institutions should also focus on building resilience in medical interns and younger health professionals by instituting tailored training and mentorship programs.

This will go a long way in providing important lessons that can be learned from the mental health challenges faced by healthcare workers during an emergency. Future research studies should strongly consider longitudinal analyses in order to investigate the long-term psychological effects of such problems and assess the effectiveness of different intervention strategies. Recognizing these challenges, the health system can enhance its support for its workforce, promoting their own well-being and the quality of care provided to patients during times of crisis.

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