

The Role of Job-Related Stress and Burnout in Increasing Heart Attack Risk Among Young Professionals

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Job-Related Stress and Burnout in Heart Attack Risk

ABSTRACT

Objective: This study explored the relationship between job-related stress, burnout, and heart attack risk among young professionals aged 25 to 40 across various industries, including corporate, healthcare, education, and technology.

Study Design: A cross-sectional study.

Place and Duration of Study: This study was conducted at the Al-Tibri Medical College and Hospital, Karachi during June 2023 to June 2024.

Methods: A cross-sectional design was employed, with a sample size of 240 participants. Data were collected using structured questionnaires that assessed job-related stress through the Perceived Stress Scale (PSS), burnout using the Maslach Burnout Inventory (MBI), and medical history regarding heart attacks.

Results: The results indicated that 50% of participants reported high levels of job-related stress, while a similar percentage experienced high emotional exhaustion, a core dimension of burnout. Correlation analysis revealed significant positive relationships between job-related stress ($r = 0.35, p < 0.01$) and burnout ($r = 0.40, p < 0.01$) with heart attack risk.

Conclusion: The findings highlight the urgent need for interventions aimed at mitigating stress and burnout among young professionals to reduce the associated cardiovascular risks.

Key Words: Stress and Burnout, Heart Attack, Young Professionals

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INTRODUCTION

Work-related burnout and stress have evidently accounted the major concerns affecting human health and general wellness in the contemporary work setting especially in professionals aged between 25 to 40 years¹. This generation is many a times aggressive to prosper, has high expectations from employers, and also struggles to manage work and family life. When people attempt to advance through such grueling career paths, the stresses and enervations that their jobs inflict upon their mental and emotional faculties become increasingly alarming and in some cases frightening^{2,3}. Young people are often required to work for long hours accompanied with a heavy load of

responsibilities, work under tension with hardly any time deadlines, and work on tight deadlines while maintaining top notch work which induces stress. This kind of stress is prolonged in duration and has detrimental physical health effects, raising the propositions for coronary heart diseases such as heart attacks.^{4,5} studies that have been carried out on the subject have support the view that extending the exposure to work related stress by any straight or indirect means is harmful to the health of a person in the long run. Developed stress cannot be equated with aggravated primary stress as in acute stress, prolonged primary stress signifies a state of multiple tensions which can be brought on by locus problems, high levels of work demand, lack of support from peers and line managers, poor balance between work issues and family issues⁶.

As stressors accumulate over time, they can give rise to a phenomenon called burnout, which is a psychological condition typified by overwhelming fatigue, depersonalization, and reduced individual accomplishment. Young professionals, who are still early in their careers, often experience their demanding workplace as an exciting challenge but could find themselves at odds with being able to deliver,^{7,8} feeling more stressed and anxious. The impact of burnout is multi-directional, leading to poor performance at work,

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greater absenteeism, and most importantly, adverse health outcomes⁹.

Several studies have established associations between numerous professions and cardiac disease. Long term stress activates the stress response system of the body, and this in turn leads to the secretion of hormones such as cortisol and adrenaline. In an attempt to extinguish the stress, the body prepares itself for a 'fight or flight' technique which causes an increase in the heart rate, high pressure, and inflammatory hyperactivation¹⁰. All these attributes may all cumulatively enhance the chances of atherosclerosis (the accumulation of plaques within the arteries) hypertension other cardiovascular disorders. For young professionals, who possibly already have some poor lifestyle practices such as poor diet, little exercise, and inadequate sleep thanks to work commitments, the risks are even greater. The combination of stress-induced physiological changes and lifestyle factors creates a veritable breeding ground for the potential development or manifestation of cardiovascular diseases which include but are not limited to heart attacks or other serious conditions¹¹.

METHODS

A cross-sectional design was conducted at Al-Tibri Medical College and Hospital, Karachi during June 2023 to June 2024, employed, with a sample size of 240 participants

Sample Size and Participants: The study composed of 240 participants from 25 to 40 years of age was conducted. The participants had a variety of work experiences representing their employment in different fields including corporate, healthcare, education, and information technology. A stratified sampling technique was deployed to ensure that each industry was sufficiently represented in the sample making it possible to appreciate the reasons behind differences in health management across industries. The subjects were recruited through their willingness to take part in the study and translation of the information into a consent form was provided before participation.

Data Collection: Data was mainly gathered using structured questionnaires that were handed out in person as well as electronically. The questionnaires were designed to obtain information concerning three main aspects: workplace stress, the levels of burnout and past heart attack incidences.

1. Stress Evaluation in the Workplace: The Perceived Stress Scale (PSS), known as a common tool evaluating one's stress perception, was also applied. The PSS contained some items that asked about the stressful thoughts and feelings during the past month.

2. Private Lives of Participants Following Employment: In order to examine the extent of burn out amongst burn out, the Maslach Burnout Inventory (MBI) was given. This inventory made use of three dimensions of

burnout: emotional exhaustion, depersonalization, and personal accomplishment.

3. Health Information: Participants were also inquired about their medical examination regarding heart attack, whether they had suffered from any heart attacks or suffered from any symptoms that were diagnostic of heart attacks

Data Analysis: The data was then entered into the SPSS software for statistical analysis after collection of data. To begin with, some descriptive results were calculated after studying the demographic aspects of the participants. Job related stress and job burnout were defined according to some cut offs established for PSS and MBI.

Two-tailed tests were conducted to test the significance of Pearson correlation coefficients computed to describe the relationship stress, burnout and risk of heart attack. This statistical method was opted for in this case because it seeks to establish the degree to which the two variables are correlated and the nature of the correlation. A significance level of $p < 0.05$ was used in all the analyses to determine the statistical significance in the effect of the analysed factors.

RESULTS

The findings of the study, focusing on the relationship between job-related stress, burnout, and heart attack risk among young professionals aged 25 to 40. A total of 240 participants completed the study, and the results are organized into sections addressing demographic characteristics, stress and burnout levels, and the correlation between these factors and heart attack risk.

1. Demographic Characteristics

Table 1 summarizes the demographic characteristics of the participants, including age, gender, and industry of employment.

Table No.1: Demographic Characteristics of Participants (n=240)

Demographic Variable	Frequency (n)	Percentage (%)
Age (years)		
25-30	80	33.3
31-35	90	37.5
36-40	70	29.2
Gender		
Male	124	51.7
Female	116	48.3
Industry		
Corporate	72	30.0
Healthcare	60	25.0
Education	48	20.0
Technology	60	25.0

2. Job-Related Stress and Burnout Levels

The prevalence of job-related stress and burnout was assessed using the Perceived Stress Scale (PSS) and the Maslach Burnout Inventory (MBI).

Table No.2: Levels of Job-Related Stress Among Participants

Stress Level	Frequency (n)	Percentage (%)
Low	36	15.0
Moderate	84	35.0
High	120	50.0

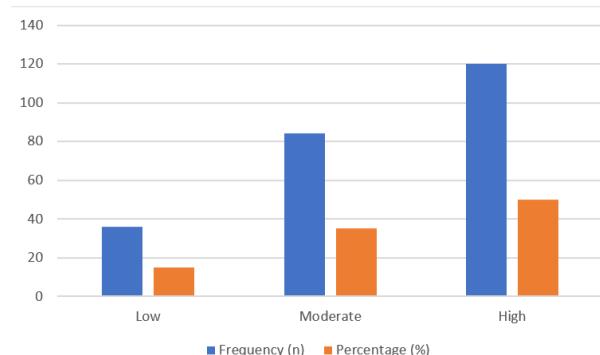


Figure No.1: Percentage heart attack symptoms

The results indicated that 50% of participants reported high levels of job-related stress, while 35% indicated moderate stress levels. Only 15% of participants experienced low stress levels.

Table No.3: Levels of Burnout Among Participants

Burnout Dimension	Frequency (n)	Percentage (%)
Low Emotional Exhaustion	48	20.0
Moderate Emotional Exhaustion	72	30.0
High Emotional Exhaustion	120	50.0
Low Depersonalization	96	40.0
Moderate Depersonalization	84	35.0
High Depersonalization	60	25.0
Low Personal Accomplishment	72	30.0
Moderate Personal Accomplishment	96	40.0
High Personal Accomplishment	72	30.0

3. Heart Attack Risk

Participants were asked about their medical history regarding heart attacks. The findings are summarized in figure 1.

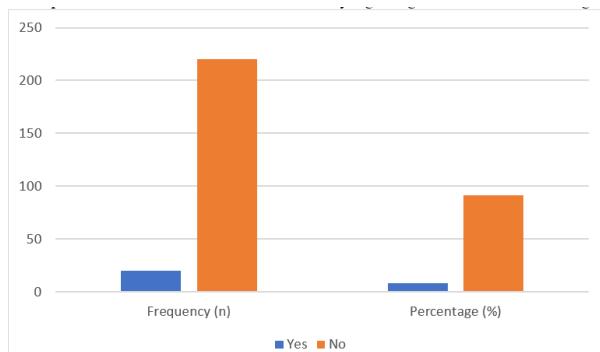


Figure No.2: Frequency percentage of patients

Figure 1: Only 8.3% of participants reported experiencing heart attack symptoms, while the vast majority (91.7%) had no such history.

4. Correlation Between Job-Related Stress, Burnout, and Heart Attack Risk

To examine the relationships between job-related stress, burnout, and heart attack risk, Pearson correlation coefficients were calculated. The results are presented in Table 4. The correlation analysis revealed a significant positive correlation between job-related stress and burnout ($r = 0.63, p < 0.01$), indicating that higher levels of stress were associated with increased burnout. Furthermore, a moderate positive correlation was observed between both job-related stress ($r = 0.35, p < 0.01$) and burnout ($r = 0.40, p < 0.01$) with heart attack risk. This suggests that as stress and burnout levels increased, so did the risk of experiencing heart attack symptoms.

Table No.4: Correlation Between Job-Related Stress, Burnout, and Heart Attack Risk

Variable	Job-Related Stress	Burnout (Emotional Exhaustion)	Heart Attack Risk
Job-Related Stress	1	0.63**	0.35**
Burnout (Emotional Exhaustion)	0.63**	1	0.40**
Heart Attack Risk	0.35**	0.40**	1

Note: ** $p < 0.01$.

DISCUSSION

The findings of this study emphasize that job-related stress and burnout among professionals aged 25-40 years are disturbingly common and suggest a potentially dangerous factor for cardiovascular health. Results have indicated that half of the respondents reported high job-related stress, while an equal number reported high emotional exhaustion characteristic of burnout yet another seasoned dimension. The scores for

stress-burnout-heart attack risk relationships were significant, therefore the need to factor in all of them in our contemporary world of work cannot be overemphasized¹².

Burnout and discriminatory job-related stress levels reported in this study must meet appropriate standards in previous studies. The correlational analysis showed that job-related stress and burnout both had a positive relationship with heart attack risk, which was within the moderate range. This has been previously documented among other studies. Researcher also provide evidence that high levels of stress increase the chances of cardiovascular disease events including heart attacks. Therefore, it brings in the perspective that chronic stress has health repercussions in young adults due to increase in heart rate, blood pressure among other factors. The findings of this study are of great importance to workplace health policies. The high rates of stress and burnout experienced by many young professionals must be addressed by organizations, and certain measures need to be adopted to prevent these issues. Studies have asserted that workplace interventions and programs, including stress management programs and work-life balance programs, have been effective in alleviating stress and enhancing the well-being of the employee¹³. As this study also suggests, organizations should contain the implementation of such initiatives as limiting stress to employees, instead, they should stress management within the organization comprehensively¹⁴.

Certain similarities and dissimilarities can be outlined when comparing the outcome of this study with that of any previous research. Towards this end, 25% of the participants in the present study experienced high depersonalization, consistent with findings of a researcher and Leiter 2016, which shows the phenomenon of burnout exists in different dimensions. However, the findings also show that this study and a third of participants feel a lack of personal accomplishment suggesting the experience of young professionals will require more in-depth understanding than what has been captured in past literature¹⁵.

While this study yields important understanding of the association between stress, burnout, and risks of heart attack, it has several limitations. The cross-sectional design does not allow making any causal conclusions, and self-reporting can be biased. More focus should be centered on the investigations on stress and burnout across professionals longitudinally considering these effects on cardiovascular health of the young professional population. It would also be beneficial to increase the size of the sample, especially the participants from various sectors to make the study more generalized.

CONCLUSION

To conclude, this study has highlighted the alarming prevalence of job-related stress and burnout has shifted towards young professionals and the consequences that arise from that alarming trend – an increase in the risk towards heart attacks. Based on the findings, stress, and emotional exhaustion were experienced by greater than a half of the participants, which supports other studies which have noted that this group experiences negative effects as a result of occupational demands. The association between stress and burnout with risk for heart attacks calls for more sensitivity from organizations in managing the mental wellbeing of employees as well as stress management. With the changes taking place in the workforce, especially due to the onslaught of modern professions, the problem of addressing job-related stress and burnout is not simply an issue of employee welfare rather it is a matter of workplace vitality that must be addressed. Future directions for research should examine more closely, the chronic consequences of stress and burnout, as Carolyn's on CVD employing longitudinal studies sampling more populations. Building more active strategies for safeguarding and enhancing mental health should encourage organizations to better ensure their healthier personnel are able to respond to pressures of the modern workplace.

Author's Contribution:

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Final Approval of version:	All the above authors
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