

Jobs Stress and Prodromal Psychosis among Healthcare Employees with Different Job Roles

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ABSTRACT

Background: Psychosis vulnerability in the presence of environmental risk factors in the form of job stressors exacerbates the incidence of Prodromal psychosis.

Aim: The present study aims to investigate the symptoms of Prodromal psychosis among healthcare workers belonging to distinct roles and further attain the objectives of work stress and its relation to Prodromal psychosis in private and government employees with different work occupations.

Method: A sample consisting of 300 healthcare workers in Riyadh and Islamabad was collected through an online survey by using a cross-cultural research design. Two scales were used in the study, i.e., Prodromal Questionnaire Brief Version and The Work Stress Questionnaire (WSQ). The study was completed in eight months from July 2018 to Feb 2021.

Results: The results have provided evidence that there exists a positive relationship between stress with the Prodromal phase of psychosis ($r=0.11$, $p \leq 0.01$). Other results emphasized the point that individuals having low wages and labor backgrounds experience more stress at work. In the same way, they also experience more symptomatology of Prodromal psychosis. Results confirmed that work stress and Prodromal psychosis have a major impact on workers, especially among doctors.

Conclusion: Prodromal Psychosis and work stress was high among healthcare workers especially nurses. The study has wide implications for health care professionals, doctors, nurses, and healthcare staff suffering from stress and symptoms of Prodromal psychosis.

Keywords: Work stress; Prodromal; Psychosis

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Introduction

Healthcare workers always face a tough situation in any crises, as world is witnessed in the crises of Covid-19 pandemic. Thus, threats remain always active regarding mental health of healthcare workers. Historically a psychological disorder is explained can be understood in terms of functional and social disability with multiple causal factors [1]. Psychosis a major psychiatric disorder can be described as having significant impact on the life of an individual. One of the major symptoms of this disorder is loss of contact with reality such as hallucinations and delusions. As per updates in the DSM-5, currently psychosis is described as a syndrome that involves a range of indications and is characterized by a broad symptomatology [2]. A mental illness that falls in the range psychosis can be diagnosed when the full criterion of the disorder is met. This criterion nullifies presence of any sort of secondary cause of a disorder [3]. These secondary causes might include substance abuse or any other physiological cause including any medical condition. The symptomatology of psychosis encompasses three major domains including positive, negative and cognitive symptoms [4].

Psychosis is a disease that is related to number of factors and because of its multifactorial nature, it can be associated with different etiological factors. These etiological factors might involve family, environment and certain psychological factors associated with the disease [5].

An important etiological factor of different psychotic disorders is stress. There has been tremendous amount of research focusing on the association between psychosis and stress. The stress that is most often psychosocial in nature such as traumatic life events experienced by an individual in their childhood and adulthood. Many other researches also provide with the evidence of elevated sensitivity or proneness to different stressful events. These different stressful events are related with dysregulation of different systems, of which biological system is most common and most affected [6]. The focus of different researches have been upon the Prodromal psychosis. It is the time period that is taken under consideration from the onset of symptoms to the onset of clinical illness. The research results are evident in suggesting that childhood traumatic incidence, increased sensitivity to stress and dysregulated biological

system are all present in Prodromal phase of schizophrenia and it is also linked with the onset and severity level of different symptoms of psychosis [4].

Job stress and its relations with number of psychological, physiological and behavioral factors has been proved by a number of different researches. These different researches have focused on the description and explanation of job-related stress. The stress that is caused by different factors at work environment induces stress that is then described as job stress. The relation between an employee and the work environment of him or her often induces certain amount of tension that is regarded as job stress [7].

It is the relation in job environment and the individual that makes any job stressful or not so stressful. Job stress can also be explained as the interaction between an individual and his or her environment. This interaction is usually aimed at changing the physiological or psychological condition of the individual. As a result of that interaction, certain physiological or psychological changes taken place in those individuals [8].

There are number of stressors that are associated with job stress and these different stressors contribute to cause a lot of changes in the health condition of individuals at their workplace. Job stress though caused by number of external factors, is also associated with the personality and coping skills of an individual. Job stress most often results from an imbalance between the job-related efforts of employees and their coping ability [9].

In addition to job intrinsic factors, another category was also identified. This category is relevant to the role of employee within an organization. The role ambiguity and role conflict are the two major stressors that are included in this particular category. As role ambiguity is concerned, it can be defined as the lack of clarity that is experienced by employees at their workplace. Role ambiguity can also be explained as unclear duties and expectations from employee [10].

As a result of job burnout, absenteeism often develops and employees starts getting more and more off from their workplace. This often induces a job dissatisfaction and lack of energy for the workplace. Lack of autonomy and underutilization of skills also adds up to the

factors causing job stress [11]. These different factors produces frustration, altogether. As a result the whole situation worsens and employees are unable to perform at their best for their jobs. As a result of prolonged job stress, different physiological diseases are often experienced by employees. These problems might include certain cardiovascular diseases, certain issues in decision making and problems at workplace.

In addition to stress at job place, most often individuals also experience psychological health consequences that might involve anxiety, depression, boredom, life dissatisfaction, psychoses, anger and a number of somatic complaints. Loss of concentration is also associated with job stress in addition to psychological fatigue. Some physical health consequences are also associated with job stress and they often are not so good [12].

In addition to the impacts of job on psychological or physiological health of an individual, job stress is often related to organizational consequences too. As whenever an employee does not feel right or is not happy with the job condition or job environment then it results is job stress [13]. Stressful employees also cause certain organizational consequences. These consequences might include changes in earnings or profits and sales. Certain significant changes in innovation and creativity might also be observed by most of the employees at their workplace. Changes in quality of life at workplace also happens that also induces certain changes in organizational structure.

In addition, it not only causes changes in organizational climate but it also induces certain changes in the influence of the boss or the supervisor. When certain demands of employees are not fulfilled or when they face a constant strain and stress at their workplace then the influence of supervisors also gets reduced and it is because of the retaliation that is a part of human nature. The job strain model presented by Karasek, 1979 also tends to explain certain facets that are related to job stress (see Appendix A).

This model works in two dimensions as one dimension is concerned with job decision latitude while other one is psychological demands. According to this model, those employees that experiences increased job demand tends

to have low decision making and they often experiences an elevates risk of job stress. This job stress is caused by the psychological strain. This psychological strain then is often linked to a number of physiological problems. The association of job strain has not only been made with one or two cardiovascular diseases but it is also strongly linked with musculoskeletal problems. Psychiatric illness is also often associated with job strain as proposed by this model. Most often psychological strain, if not treated effectively, is linked with development of problems and diseases that lasts for long durations.

Moreover, this link of job stress with psychoses has also been explained a number of times and number of different researchers have proposed that the development of psychoses as induced by job stress is a factor that is experienced by a large number of people out there. The stress may be of any kind is quite harmful for the individuals experiencing it. As it not only impacts the physical or psychological health of an individual but it causes an irreversible variation in brain chemistry and brain chemistry also gets varied that most often are related to number of other problems. Changes in the production of neurotransmitters are observed, changes in the electrical activity of brain are observed and these changes often induce changes that cause an individual to feel like a maniac [14]. Disturbed levels of different hormones and neurotransmitters can cause changes in brain thus affecting the overall functioning of an individual. As changes in neurotransmitter production is often associated with the changes in synaptic activity. These changes in brain chemistry are caused by prolonged stress and often results in number of psychiatric problems, psychoses as one of them [15]. (See Appendix B)

This model explains the whole process of development of any psychological problem in a holistic way. As in most of the cases, brain vulnerability increases because of genetic liability and presence of prenatal stressors. These prenatal stressors can be of different types such as parental depression, parental anxiety or stress and such other things. Then comes the role of environmental triggers and these triggers can effectively enhance the chances of development of any psychological problem if not catered effectively [16].

Then comes the role of adolescent brain dysfunction because of immature development. Progressive brain changes and number of other factors also contribute to the development of any psychological problem.

When employees do not get enough of their job satisfaction or support from their social group then they often experience social stress. The stress that is caused by the people in surroundings of such individuals is social stress [17].

There are number of evidences that suggests that there exists a close link between HPA and psychosis. The link that is moderated by HPA and affects or causes psychosis is often inked with social stress. The role of environmental factors have always been there and this role cannot be negated or nullified [18]. Especially when it comes to the development of psychoses or any other psychological problems then this role becomes more refined. As in number of cases, risk and protective factors that are associated with the environmental impact can also cause a lot of issues. level of cortisol has also been proposed by number of different researchers and have added up to the point that there exists a link in Prodromal psychoses and stress.

Job stress factors also involves harassment on the hand of boss that is most often described as yelling, shouting, insulting and behaving oddly in front of other colleagues. All these factors can be quite stressful for an employee and also comes under the umbrella of social stress. This type of stress, if prolonged and adds other factors can also cause increased risk of psychoses [19].

■ Rationale

Saudi Arabia is a country which is moving towards independence in manpower in the healthcare sector, due to those new comers in the healthcare field as well the current employees are facing extra workload. Similarly, Pakistan is a developing country with a huge population where job opportunities are scarce and the available working environment stressful due to many reasons. Secondly, most of the organizations are suffering from economic crises due to the mismanagement or lack of skill to cope with the crisis situations especially in the COVID-19. Furthermore, due to lack proper planning, the job market is not conducive to provide jobs to people with the right placement. There is no regular monitoring system to identify mental

illnesses due to job stresses or environmental risk factors both in KSA and Pakistan. However, there are studies like Tayyib and Alsolami addressing common mental health problems like depression, anxieties among employees of various occupations indicating prevalence but the correlates of at-risk mental state/Prodromal phase of psychosis are overlooked [20]. This generates gap in the existing literature which will be addressed in this study.

■ Objectives

Following study has certain clear objectives mentioned subsequently:

- To investigate the prevalence of stressful work environment in association with Prodromal psychosis for public and private sector healthcare workers
- To investigate the difference between male and female healthcare workers for association of work stress with Prodromal psychosis.

■ Hypotheses

Below mentioned are the hypothesis of this study:

- There is likely to be a substantial relationship of work stress with Prodromal psychosis
- There is likely to be an increased symptomatology of Prodromal psychosis among individuals with low wages
- There is likely to be a significant difference in association of work stress with Prodromal psychosis symptomatology among males and females
- There is likely to be a significant difference in Prodromal psychosis symptoms among healthcare workers belonging to different job roles

Method

■ Research design

In this Study cross sectional method was used. The following two scales.

■ Sample and settings

For this study a sample of 300 consisting of doctors, nurses and other healthcare staff such as leaders, managers, technical staffs etc. (100

each) were included using convenient sampling technique. The data was collected from different healthcare workers like government and private sector in the cities of Riyadh and Islamabad. Male and female sample were collected equally.

■ Instruments

Prodromal Questionnaire, Brief Version (PQ-B): Prodromal Questionnaire, Brief Version (PQ-B) was used to Prodromal psychosis symptoms. Scale including 21 items with dichotomist response and measure both hallucinatory and delusional domains.

The Work Stress Questionnaire (WSQ): Work stress scale revised version was used and it contains 21 items. These items fundamentally are concerned with four major themes and these themes are assessed through this questionnaire. One of the theme is indistinct organization. Second theme that is assessed by this questionnaire is Individual demands and commitment, The third theme of this questionnaire involves Influence at work. And Work to leisure time interference in work or work-related stress.

Data analysis

The results would be analyzed using SPSS also known as Statistical Package for Social Sciences (IBM SPSS, Version 26). Pearson Product Moment Correlation was used to measure correlation. To find out the difference in two variables an independent sample t-test and to find out difference in groups ANOVA with post-hoc was applied.

Procedure

The permission was taken from the relevant organizations. Subjects were first brief about study purpose. Inform consent form the subject before hand over the questioner was taken to assure the confidently about information they provide.

Results

The objective of the present study is therefore to inspect the symptoms of Prodromal psychosis among healthcare workers belonging to different job roles. Further to explore its relationship with work stress and other social and clinical demographics. Reliability analysis was done using Cronbach's Alpha measured internal consistency of instruments. Descriptive statistics

and Pearson Product Moment was also used to analyze frequencies, demographic variables percentage. Independent Sample T-test was also used for assessment of gender difference.

This frequency **Table 1** shows the percentage of the sample consist of 50% of male and 50% females, their educational level was Graduate 30%, Postgraduate 50% and Other 20% (**Figures 1-2**).

Table 1: Frequency statistics of demographics.

N=300			Category	f	%
Gender			Male	150	50
			Female	150	50
Education Level			Graduate	130	30
			Postgraduate	52	52
			Other	18	18
Marital Status			Single	66	66
			Married	34	34
Work Status	Doctors	100	33.3		
	Nurses	100	33.3		
	Other healthcare Staff	100	33.3		

This **Table 2** explains the reliability and descriptive statistics of all scales which used in this study. Cornbrash's Alpha Reliability of Alpha Reliability for the scales of Prodromal Psychosis Questionnaire 0.811, and Work Stress Questionnaire is 0.771.

This **Table 3** shows a significant relationship positively among Prodromal Psychosis and Work Stress Questionnaire. PPQ has significant positive correlation with JSQ ($r=0.11^{**}$, $p<0.01$).

Table 4 revealed significant mean differences on PQB with $t(298)=1.67$, $p<0.05$. Findings showed that Participants from Male gender exhibited higher scores on PQB ($M=63.10$, $SD=12.07$) compared to the Female gender ($M=61.10$, $SD=8.94$). The value of Cohen's d was 0.58 (<0.80) which indicated medium effect size. Findings revealed significant mean differences on WSQ with $t(298)=0.02$, $p<0.05$. The value of Cohen's d was 0.44 (<0.50) which indicated small effect size.

Table 5 demonstrates that Prodromal Psychosis and Work Stress mean values are high in the nurses group as with $F(9,290)=71.63$, $p<0.05$ and value of η^2 was 0.63 (<0.80) which indicated medium effect size. Similarly Work stress was also higher in nurses group.

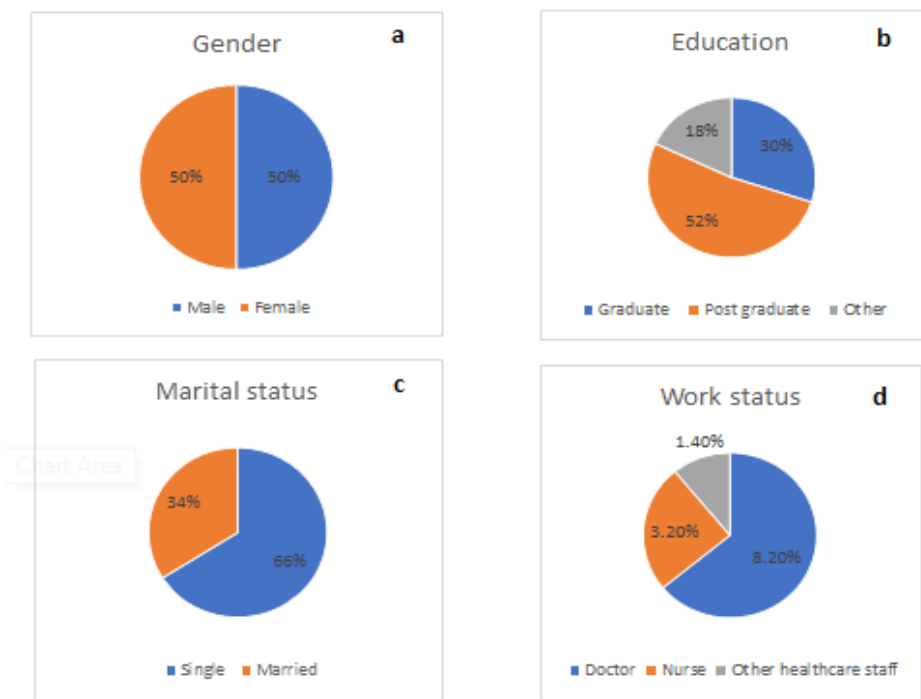


Figure 1: a) Shows the percentage of the sample consist of 50 % of male and 50% females; b) Shows the percentage of their educational level; c) Shows the percentage of their marital status; d) Shows the percentage of their work status.

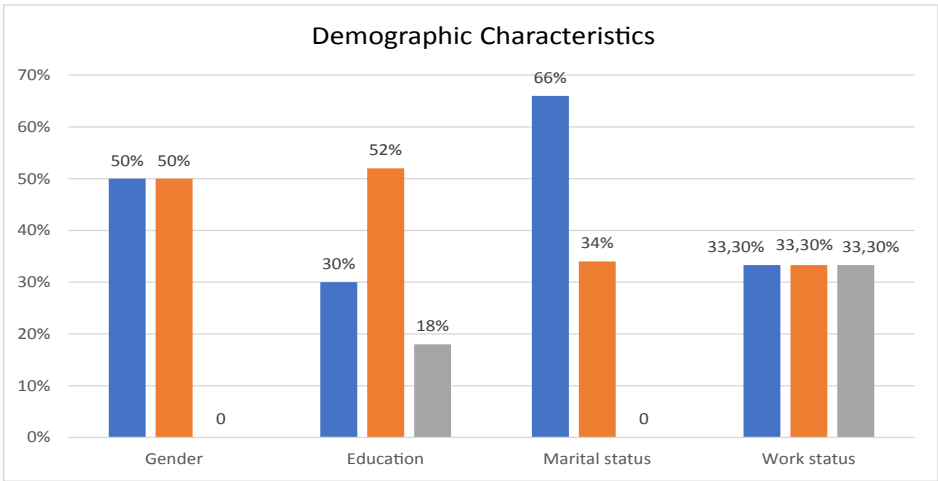


Figure 2: Demographics Categories.

Table 2: Psychometric properties of the study major variables/scales (N=300).										
	k	α	M	(SD)	Range		Skewness		Kurtosis	
					Actual	Potential	Statistic	Std. Error	Statistic	Std. Error
Prodromal Psychosis Questionnaire	21	0.811	62.38	-10.59	21-105	21-102	1.077	0.131	1.29	3.47
Work Stress Questionnaire	21	0.771	36.41	-4.98	21-88	24-86	-0.359	0.131	-0.31	0.41

Table 3: Correlation of study variables.

Variables	n	M	SD	1	2
Prodromal Psychosis Questionnaire	300	62.38	10.59	-	-
Work Stress Questionnaire	300	36.41	4.98	0.11**	-

Table 4: Independent samples t-test for investigating the gender difference in Prodromal Psychosis, and Work Stress Questionnaire (n=300).

Variable	Male		Female		t (298)	p	95% CI		Cohen's d
	M	SD	M	SD			LL	UL	
Prodromal Psychosis Questionnaire	63.1	12.07	61.1	8.94	1.67	0.04	-2.77	5.65	0.58
Work Stress Questionnaire	36.46	5.95	36.66	3.84	0.1	0.02	-1.88	2.08	0.44

Table 5: Analysis of one-way anova along with mean, standard deviation and post-hoc on all study variables.

	Doctors		Nurses		Others		F (9,290)	η^2	Post-Hoc
	M	SD	M	SD	M	SD			
Prodromal Psychosis Questionnaire	64.22	12.36	73.16	11.57	62.88	10.32	71.63	0.63	1<2>3
Work Stress Questionnaire	38.91	5.2	46.53	6.51	36.5	5.36	58.87	0.56	1<2>3

Table 6: Independent Samples t-test for investigating the country based differences in Prodromal Psychosis, and Work Stress Questionnaire (n=300)

Variable	Riyadh		Islamabad		t (298)	p
	M	SD	M	SD		
Prodromal Psychosis Questionnaire	55.23	9.11	52.46	8.91	1.01	0.56
Work Stress Questionnaire	49.48	7.44	50.11	8.66	1.12	0.51

Table 6 revealed that statically there was no significant difference was reported among the healthcare workers based in both cities from both countries.

Discussion

The aim of the present study is therefore to investigate the symptoms of Prodromal psychosis among healthcare workers with different roles such as doctors, nurses and other healthcare staff. Further to explore its relationship with work stress and other social and clinical demographics.

So, the first hypothesis of this study was that Work stress will have a positive relationship with Prodromal phase of psychosis. Pearson Correlation Analysis showed that the findings

revealed that PQB has significant positive correlation with WSQ ($r=0.11$, $p<0.01$). These findings get support from the literature review based study of Althwanay et al. (2020), that Prodromal psychosis' risk factor is very much associated with stress and in healthcare workers, job stress play a triggering role [21].

Second hypothesis of this study was that Males will have higher scores than females on Prodromal psychosis phase and work stress scale. T-test analysis showed that the findings revealed that PQB was higher in male participants where $M=63.10$ and $SD=12.07$. As well as Work Stress was also found higher in males as $M=36.46$ and $SD=5.95$. The cross cultural pilot study of Cendrero-Luengo, et al. revealed that, stress, psychosis and other psychiatric issues may be

higher in males, as males work a lot and also they have more responsibilities with larger chances of exposure to the stressful events as compare to females [22]. This triggers out favorable chances of work stress and Prodromal psychosis phase. Similarly, Brasso et al. supported the same kinds of results [23].

Third hypothesis of this study was that Prodromal psychosis symptoms will be found in differently in healthcare workers with different work job roles. Anova analysis showed that Prodromal Psychosis and work stress found higher in the nurses as compare to other working and job fields. Hsiung et al. (2019), in a cross cultural study found that among healthcare workers nurses are always at risk for developing psychosis and stress, due to extra workload and face many of work related issues [24].

Whereas interestingly, there was no significant difference was found among healthcare workers of both countries. This might be one reason that, this data was collected during covid-19 situation and in this duration, every healthcare system in the world was under pressure and facing workforce crises. This argument is also get support from the study results of Matsumoto et al. [25]. And most recently Yamane et al. find out that, among healthcare workers, during the covid-19 risk of psychosis was high level of work stress was due to the burden of work globally in the healthcare systems [26].

Limitations

Applied for age range above 20 years only. Data was collected from healthcare workers, so could not apply on other working fields. Sample's data was gathered from Riyadh city and Islamabad

city only, which could not be generalize over other cities population.

Suggestions and Recommendations

In the light of findings and results of the ongoing research, in the hospitals, banks, and educational institutions need to focus on the psychological care of their workers, as before entering into the severe or serious psychological issues, work stress and psychosis, it is need to be addressed on the initial phase by providing them psychological services on regular basis.

Implications

This study can help to the higher authorities, governments and heads of departments, to understand the situation and importance of mental health of their employees in order to take care of mental and psychological health of their employees, as doctor can treat better to his patient when he will be psychologically fit and normal, as the same case in the bankers and teachers as well.

The current study can help to fill the gap in research area, where usually most of the researches carried out in KSA and Pakistan on student samples while general population is neglected side in these areas of research.

Conclusion

This research was conducted to check the prevalence of job stress and its relation to Prodromal psychosis in private and government healthcare workers in different job roles. Results of the current research confirmed that, Prodromal Psychosis and work stress have dominant effect on the workers especially in Nurses.

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