

Impact of Work Pressure on the Construction Site Safety in the Covid-19 Pandemic: A Study in Sri Lanka

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Abstract - The covid-19 pandemic has drastically impacted on workers and workplaces across the globe; hence, the productivity of the employees has become a crucial factor today. This has been caused by the work pressure of them. Therefore, this study aimed to investigate the factors affecting work pressure and its impact on the construction site safety in Sri Lanka. The recent literature revealed high absenteeism, overloading of work, employee anxiety, family issues, economic problems, delays in work completion, work shifts, lack of resources, and environmental problems to be the major factors affecting work pressure in the construction sites safety. They were selected as the indicators of the work pressure being the independent variable of this study. The construction site safety was measured referring to the number of accidents occurred in a selected construction site for the past two years. The accidents included falling from a height, falling on objects, by equipment or machinery, exposure to electric shocks, heat and harmful substances, slipping and epidemic diseases. The data were then collected from randomly selected 200 workers using a questionnaire. Then, the data were descriptively analyzed and found that the majority of accidents were happened causing the epidemic disease while the least was causing slipping. Further, the data were analyzed respectively using correlation analysis and regression analysis to find the relationships among the dependent and independent variables and then the level of impact of the work pressure on the construction site safety. The research showed that the work pressure is increased when the workload is increased. Several recommendations are made, including on-the-job training, work pressure reduction programs, and appropriate employment policies, to enhance safety behavior and decrease the number of accidents on construction sites.

Keywords: *Construction Industry, COVID-19 Pandemic, Safety, Work Pressure*

I. INTRODUCTION

Work pressure is the pressure that anyone experiences at work with the pressure. Thus, a certain amount of tasks should be finished within a certain timeframe. Otherwise, various problems can be created. Then, employees get overly tired and panic; hence, the safety challenges in the construction industry have become vital. The Covid -19 has now been able to further increase the aforementioned work pressure.

The spread of the Covid-19 led to an increase in workload due to overwork of one employee and project stoppages or staff shortages caused by been quarantined. Employees' exposure to the virus results in lower wages, which in turn increases their economic risk. By reducing the transport service, their lives become more uniform. A large number of people work in such

workplaces. Those people come to work with a lot of problems. They also come to work without freedom and under a lot of pressure to work in residential areas. Then they work under stress and unhappily. Then, the chance of happening of an accident is high and the quality of the work is decreased. It also causes creating damage to the people, equipment, and property of the project. Thus, a lot of money is wasted, and time and labor have to be spent. Also, if a person dies, the institution will have to face lot of problems. Therefore, this study aimed to investigate the impact of work pressure on the construction site safety in the Covid- 19 pandemic.

II. LITERATURE REVIEW

A comprehensive literature review was conducted to explore the structural dimensions impact of the work pressure of construction workers during the covid-19 period, to enable the development of an appropriate work pressure measurement. Thus, accidents and safety issues caused by the above impacts were considered in the review.

Work pressure can be defined as stress that is generated due to conflicting demands in one's job. While all work pressure is harmful in that an employee has an emotional and physical reaction to job demands that are difficult to control. The mental and health damage caused by increased work requirements is greater than the capacity to give the individual. The NIOSH (National Institute for Occupational Safety and Health) reported in 2005 that 1,224 construction workers died on the job over one year, making the construction industry the most dangerous industry in the country (Keller, 2022). Also, Safety behaviors are the basic safety activities that individuals must perform to be maintained. Thus, it is primarily measured by lagging indicators such as accidents.

III. METHODOLOGY

The research was designed quantitatively. The respective hypotheses according to the identified dependent and independent variables were then developed after a comprehensive literature review. Accordingly, the research framework was designed as depicted by the Figure 1.

Independent Variable

Dependent Variable

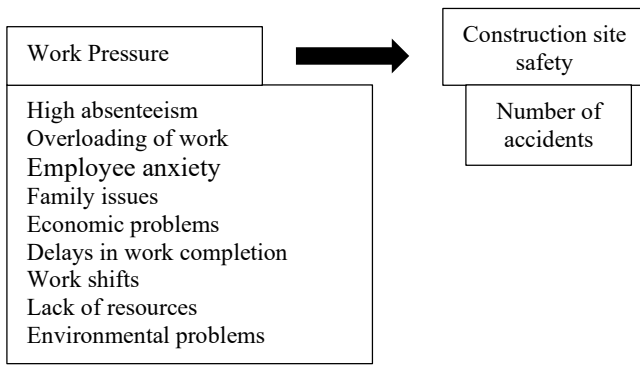


Figure 1: Research Framework

Then the questionnaire was developed using a Likert scale to collect primary data. The sample was randomly selected to be 200 from the labourers and officers in a selected construction site. They were interviewed for further verifying the reliability of the items in the questionnaire. Then, the SPSS software was used as the analysis tool in this study. The data were descriptively analyzed to find the frequency of happening each accident type in the construction site. Thereafter, the data were tested with normality test and reliability test to confirm their suitability to test with statistics. Further, the data were analyzed using correlation analysis to statistically test the relationships among the dependent and independent variables. Further, regression analysis was done to identify the level of impact of each measurement scales of the work pressure on the construction site safety. Based on the analysis, certain recommendations were done in this study.

IV. RESULTS AND DISCUSSION

The following Figure 2 depicted the descriptive analysis of the number of accidents. The majority of accidents were recorded causing the epidemic diseases while the least was causing slipping. However, all of these accidents were caused by the work pressure.

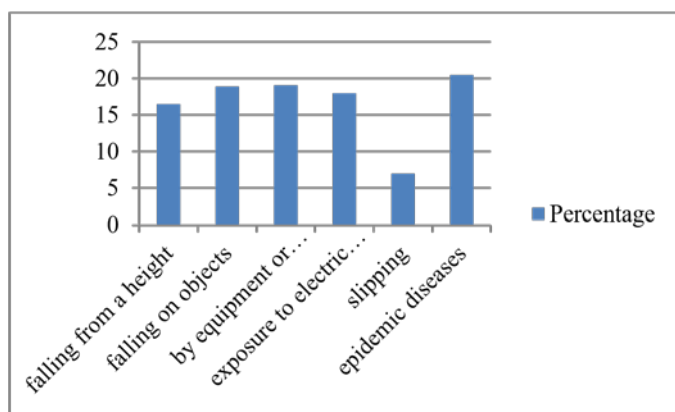


Figure 2: Frequency of Happening of Each Type of Accidents

The Cronbach’s Alpha was 0.670 with a significance of $P < 0.005$ hence, the internal consistency was acceptable; the value being closer to 0.7. The analysis was further continued with normality test and proved that the data are normal. Thus, statistical tests could be continued.

The correlation between the work pressure and the construction site safety in the Covid-19 pandemic was statistically significant

and positive at 0.01 levels with a Pearson correlation coefficient of +0.153. This meant that as the Covid-19 crisis intensifies, so does the work pressure on workers. The analysis was further continued with regression analysis to identify the level of the impact of each factor creating work pressure on the construction site safety. Accordingly, high absenteeism, overloading of work, employee anxiety, family issues, economic problems and lack of resources were significantly impacted on the construction site safety while others were not significant. Amongst, the most significant factor was employee anxiety creating the highest impact on the work pressure. High absenteeism, family issues, lack of resources and overloading of work were respectively created an impact on the construction site safety. Moreover, the least impact was created by economic problems. Also, work shifts and environmental problems did not show any significant relationship with construction site safety in the Covid-19 pandemic.

V. CONCLUSIONS

Based on the above results, the study concluded that the construction site safety was highly impacted by the employee anxiety during the Covid-19 pandemic. It could be due to been quarantined for several weeks. In that period, they had to stay at home without going out from the house and contacting even relations. That created their anxiety not having relaxed minds. Therefore, this factor was highly significant in the study. Moreover, other reasons also respectively affected for the construction site safety as the study analyzed. Accordingly, several suggestions were made to reduce work pressure through this research. The following were some suggestions,

1. Distribution of the work
2. Arrange a weekend plan and build up the employer's mind by organizing some instruction programs at least once per week.
3. Provide safety programs and provide personal protective equipment
4. Giving time extensions for projects due to the lack of progress during covid-19 affected periods.
5. Share the workload with subordinates and transfer the pressure into proper parts.

Also, the highest number of accidents in the site was reported causing epidemic disease; hence, necessary precautions could be made to reduce the number of accidents. For that, the following suggestions were made.

1. Wash hands frequently in the site.
2. Avoid touching eyes, nose and mouth; hence, the employees must wear masks at every time in the construction site.
3. Avoid close contacts with others and crowded places.
4. Collect information from trusted bases.
5. Conduct awareness programs on COvid-19 symptoms and related best practices.

References

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