

HR Interventions in New Normal, Factors of Employee Absenteeism at Rourkela Steel Plant, Odisha during COVID-19: A Causal Model

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Abstract

Absenteeism is famous for being difficult to comprehend, and forecasting the exact pattern of it after numerous research efforts is yet unachievable. COVID has brought new dimensions to this concept as work-life has witnessed an unusual style of operations. The manufacturing industry also suffered during this period in terms of productivity and administrative control over employees. This study attempts to find out the determinants of employee absenteeism considering demographic variables and COVID-related factors during unusual and unexpected COVID 19 in a steel manufacturing plant in Odisha. Based on a literature review of absence, a consolidative model is established while merging demographic with COVID-related factors to predict absence patterns. The statistical analysis specified that construct absenteeism is significantly correlated with service length, type of work, age of the employee, and marital status. An important finding is that absenteeism is related to covid-related factors both positively and significantly. Lastly, with the help of regression analysis, it is revealed that service length and level of education are proven to be significant in predicting employee absenteeism at the workplace during the COVID pandemic.

Keywords: Workplace absenteeism • Demographic characteristics • COVID related factors

Introduction

COVID-19 is a transmittable respiratory system disease that was initially identified and documented in Wuhan, central China, in November 2019, and the World Health Organization (WHO) declared it a pandemic on March 11, 2020. In India, industries typically expect 7-8 percent absence during this flu season every year, but COVID-19 has caused absenteeism to climb as high as 20% in 2021. COVID-19 had an impact on all dimensions of sustainability in the world, including economic, ecological, and social. The Indian economy has contracted substantially from 2020 to 2021 and the manufacturing industry is no exception to it. (Niranjana das) Maximum manufacturing organizations had to reduce their operating activity as a result of COVID-19, and many had to pause the production completely. Employee absenteeism is a national issue, and the expense of absenteeism is significant on a national level. In India the public sector (10.87 percent) had the greatest percentage of absenteeism at the national level, followed by the private sector (9.79 percent) and the joint sector (9.79 percent) (9.37 percent). In labor-intensive industries worker absenteeism results in productivity losses for businesses and a reduction in the potential for productivity-based incentives for workers. It may be a nightmare for manufacturers if this complex yet unavoidable issue of employee absenteeism are not managed properly. Many research papers examine demographic factors that contribute to absenteeism, but studies in the context of the COVID-related issue era are few and far between.

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Received: 15 April, 2022, Manuscript No. jbm-22-60915; **Editor Assigned:** 17 April, 2022, PreQC No. P-60915; **Reviewed:** 25 April, 2022, QC No. Q-60915; **Revised:** 30 April, 2022, Manuscript No. R-60915; **Published:** 05 May, 2022, 10.4172/2223-5833.2022.12.437

Review of Literature

Absenteeism is usually defined as an employee's failure to attain workplace work regularly in their studies, have differentiated between absenteeism and other types of pre-planned absences (such as public holidays and yearly leave). Unplanned absences, on the other hand, can be classified as voluntary or involuntary. The former is associated with an employee's desire not to attend, whereas the latter is associated with an employee's incapacity to attend owing to illness or injury. The voluntary kind of absence may be more significant from a strategic standpoint; this category of non-attendance is impacted by conditions that are frequently within management's control, whereas involuntary absences are outside management's control [1-4].

Demographic variables & absenteeism

As absenteeism is expensive, a profit-maximizing (citrus-paribus) employer is inherently expected to avoid high absenteeism rates. Demographic variables help in understanding social categories for individuals. The causal model of Mowday and his colleagues has used five variables like education, service length, age, gender, and job levels to explain employee attendance. An organizational psychologist is particularly interested in the age, gender, and race of a workforce, and age, as well as gender, performs a crucial influence in physically demanding jobs. Occupation is also one type of demographic variable, which has an impact on comprehending the employment function of employees and understanding the independent variable like absenteeism in social studies. More research into the nature of demographic variables is required. The specific reason for using gender as a variable is to investigate absenteeism from a gender perspective to understand the potential impact of such disparities on organizational performance. The association between gender and absenteeism has already been paid a lot of attention by researchers [5-7]. A consistent finding across huge samples of data as well as publicly available data from diverse countries, including the United Kingdom [8-10] is about a higher percentage of absenteeism among female employees. Women's absenteeism has been linked to their menstrual cycle and Age, job satisfaction, travel time to work, stressful life, suggest women would not have higher absence rates if they shared the same individual and work characteristics as males whereas are unable to fully explain the gender gap in absences, concluding that differences in work characteristics account for only

a small part of the discrepancy. When aggregate absence data is split down by gender, reports from the Bureau of Labor Statistics (1982) demonstrate that men and women have distinct rates of absenteeism for different ages. Men's absenteeism rates vary throughout middle age, whereas women's rates are highest in the 25-34 age groups, and lowest in the 35-44 and above 55 age groups. Isambert-Jamati (1962) also discovered that women's absenteeism reduced with age, which corresponded to a decrease in childrearing duty. While discovered a positive association between age and absenteeism, Workers of lower age also proved to miss more workdays than workers of higher age, according to and Gender is included as an independent variable in most of the analyses because it is a key explanatory variable in most absenteeism studies. Though, treated gender as a dependent variable and revealed some significant differences between men's and women's absence behaviour [11-20].

Unmarried males are missing more frequently than married men, according to Brits RN and Reese K [21], whereas unmarried females are absent less frequently than married women. Cohen and Golem discovered that mothers with fewer children under the age of 18 are more likely to be absent. The number of children and marital status, according to Bonda and Norman, are variables that signify familial duties and are considered a primary contributor to absence. Family compulsions have been identified as a barrier to attending the workplace in both Brooke PP [4] and Steers and Rhodes's investigations. For other reasons, a comprehensive assessment of how family structures and the number of children affect employee attendance is recommended. For example, such analyses are more conceptually consistent than those that focus just on working circumstances. Although many studies have looked at the influence of work and family circumstances on work-life conflict and the well-being of the employee, if normal job-related variables are controlled, studies have yet to adequately verify the theoretical assumption that family duties can affect absenteeism revealed a negative relationship between education and absenteeism, with those with less education missing more days than those with more education [21-23]. According to Clark AE and Oswald AJ [24], the degree of education and years spent studying, even if done in an informal setting, were inversely connected to the time of absence. Individuals with a higher level of education miss shorter periods and are absent less frequently, with a more serious reason for absence than those with only secondary education.

Coved related factors of absenteeism

COVID-19 changed the way people thought about absenteeism in the workplace, the explanations for it, and how absences were handled during a crisis. This was aided by teleworking or virtual offices, which made tracking absences more difficult. The pandemic added additional categories of leaves like "self-isolation", which changed the definition of sick, leave. Assessing the actual impact is a difficult task for the human resource department. Previous research on any pandemic has shown that the psychological impacts of infectious disease epidemics can endure for years, causing workers to suffer from post-traumatic stress disorder, depression, and stress. Burnout is a psychological condition that can occur as a result of continuous overloading due to the nature of work or long periods spent working without rest. Burnout and staff tiredness are more likely to occur in organizations with fewer employees or employees who perform work activities in multiple domains. Greenglass and Burke (2003) define occupational stress as the perceived difference between the tasks assigned to an individual and his ability or capacity to execute them. The stress that employees experience as a result of their work environment has a substantial impact on their levels of satisfaction. Professional demands, co-workers' demands, the behavior of third parties with whom the firm works, and family members' behavior may all contribute to the feeling of stress. Absenteeism is a way for an employee to recover and repair his strength and stamina over time as a result of stress and unpleasant emotions.

Moral injuries are a type of psychological discomfort that happens when a person violates their moral principles and professional responsibilities. When making the option to return to work following the lockdown, employees' ethical ideals were shattered by COVID's fear of catching COVID infection. The lack of measurement of psychological reactions to pandemic-related stressors has had a substantial influence on employees' physiological and psychological functioning. If an employee had a health condition or disability that made

them susceptible to COVID infection (diabetes, respiratory disease, breathing problems, extreme obesity, or any other illness that made them vulnerable), the workplace attendance for them was a major concern. Hospitalization was the primary justification for being absent from work under COVID, however, it brought with it, a slew of other valid and violated grounds for extended absences. The lack of a COVID-related leave policy is another factor that contributes to workplace attendance violations. Employees' commutes from their homes to the facility were also disrupted as a result of the entire shutdown and partial lockdown. This gridlock in the transportation system can be viewed as a barrier to workers returning to work, despite their eagerness to do so. During the COVID health system crisis, absenteeism was also due to time off to care for a sick kid or elderly family members. Though a regular leave policy allows for such absences, certain significant disturbances have been reported in recent years that can be classified as violations of workplace attendance. Workers have been found on multiple occasions manipulating their COVID symptoms to gain more frequent paid absences as a result of falsified medical testing reports, which has been decremented and witnessed at the individual level. The HR department has been overworked to the veracity of such complaints, resulting in a decline in production, particularly at industrial enterprises. The concept of presentism has been changed with the inclusion of post COVID weakness and physical presence in the workplace. The need to reduce costs involved with sickness absenteeism [25]. As well as the associated costs of increased presentism, or working while sick, has had an impact on this new working environment [26]. Post COVID weakness and workplace presenteeism are now integrated to address the high cost and productivity loss. Hemp (2004) claims that presenteeism is a far more expensive problem than absenteeism and that anticipating and reducing it can provide a competitive advantage. To address the significant cost and productivity loss, post-COVID weakness and workplace presenteeism have been combined and can now be used as a predictor of employee absenteeism patterns. Absenteeism policy is a set of rules and processes designed to reduce the number of days employees are absent from work and employees have enough flexibility to use their paid time off due to the lack of a COVID-linked leave policy during this period. After COVID's recovery, stigma, discrimination, and social isolation all had played a factor in the decision to return to work. All of these forms of social stigma have been linked to COVID-19. Individuals and their families felt judged by others (perceived stigma); infected or exposed people were excluded, isolated, and discriminated against by their family and/or community (experienced stigma); and some affected people felt shame and self-rejection as a result of their actions (internalized stigma). Several hospital and laboratory frontline healthcare workers are being treated unfairly by hotel staff and are having problems finding food and shelter, that also has stemmed another factor for absence is self-inhibition to join back workplace after getting recovered from COVID.

Methodology

Population

A total of 1741 full-time employees from the Rourkela steel plant in Odisha were included in the study. The sample size was set at 315 people, with 53.7 percent (169) the men and 46.3 percent (145) the women. The age of workers was in the range of 18 to 59 years old and mean age is found to be 35.4 years and a standard deviation of 7.93. In the sample, the average length of service was 7.6 years. Around two-thirds of the workforce was married (66.4 percent). Primary school education was held by nearly one-third of the sample (31.2 percent, secondary 13.4 percent, high school 25.9 percent, associate's degree 13.4 percent, and bachelor's degree 16.2 percent).

Procedure

The dependent variable is absenteeism for this study, which is again classified into three categories: sick leave, paid leave, and unpaid leave. Absenteeism is measured in the hours that the employee missed in the study period. Gender, age of the employee, the existence of children, the kind of job (executive or non-executive), marital status, level of education, and COVID-related factors are all independent variables.

Measures

The data used in the study was obtained from the Rourkela Steel Plant in Odisha. The period for the data collection on absenteeism has covered the duration from 1st of March to 31st December, 201, and the information was taken from the human resource department's records.

Data analysis

Descriptive statistics are used to report both the means and standard deviations for absenteeism by demographic characteristics. The Kruskal-Wallis and Mann-Whitney tests were used to look at the significant variations in absenteeism demographic factors. The Spearman correlation analysis was used to examine whether the research variables had any significant correlations. Furthermore, the Univariate analysis was performed to examine the impact of several demographic variables on absenteeism (gender, marital status, and COVID-related factors). Finally, regression analysis was used to determine the characteristics that predict absence on COVID days.

Results and Discussion

Table 1 provides the variables' descriptive statistics (means and standard deviations). During the COVID pandemic, paid absence is reported to be higher than unpaid as well as sick leaves. Executives and female unmarried workers are shown to have a higher number of hours claimed underpaid absences. Female employees' absenteeism is largely due to societal stigma and self-inhibition in returning to work after a period of convalescence from COVID.

The use of sick leave during COVID is shown to be higher in married non-executives who work in manual labor on the production line. Misuse of COVID symptoms has been seen to play a part in their absences, even though they felt socially stigmatized if they returned to work after recovering from COVID and preferred to be absent. Though unpaid absenteeism is used infrequently, it is claimed that it is used owing to the stress of working long hours and lack of transport among married nonexecutive male workers who do not children.

In terms of sickness, paid and unpaid absence, Kruskal-Wallis and Mann-Whitney analysis has revealed some noteworthy variances in the sample characteristics. For example, a significant difference is observed in paid absenteeism signifying that female employees are more likely than males to have paid absences. Paid absenteeism has also claimed to be the outcome of disparities in educational attainment and type of work as executives have taken more paid leaves. Similarly, stress, burnout, and taking care of sick family members have all been linked to paid absenteeism. Finally, sickness absenteeism appeared to be affected by COVID-related issues; like getting hospitalized owing to COVID, as well as misusing COVID symptoms and dealing with the social stigma after their recovery at the workplace. As compared to paid and sickness absenteeism, unpaid absenteeism is observed to be less common. But when comes to marital status, single employees are more likely to take paid leave, and employees without children have the same propensity.

Correlation analysis of variables

The Spearman correlation is used to study the relationship between the variables in the study. There are some reasonable correlations between

Table 1. The descriptive statistics results.

Variables	The Number of Hours due to Absenteeism						
	Sickness Absenteeism		Paid Absenteeism		Unpaid Absenteeism		
	Mean	SD	Mean	SD	Mean	SD	
Gender	Male	16.9	60.5	17.1	32.1	7.1	17.2
	Female	7.7	34.9	32.7**	121.9	5.9	20.4
Marital status	Single	4.1	11.8	39.4	156.3	4.8	12.9
	Married	15.8	58.6	18.5	21.2	7.3	21.3
No of children	Having child	16.9	60.9	18.3	21.6	7.5	21.9
	Having no child	3.9	11.3	36.9	145.6	4.8	12.6
Level of education	Primary	19.6	60.8	10.9	15.1	8.6	19.6
	Secondary	9.1	46.8	16.1	20.5	6.6	13.3
	High school	9.7	47.2	26.1	36.8	2.9	7.6
	Diploma degree	3.9	13.8	16.6	14.5	10.9	36.4
	Bachelor Degree	9.5	45.2	68.6**	220.3	4.5	11.6
Level of work	Executive	8.9	38.4	36.7**	114.2	5.1	20.9
	Non-executive	17.2	62.4	6.3	12.3	8.8**	14.9
COVID Related Factors	Home isolation	16.5	74.5	17	24.2	7.3	17.9
	Fear of contracting with COVID infection	0	0	19.9	19.8	1.4	4.5
	Hospitalized	22.2	8.9	19.9	26.3	3.2	12.2
	Burn out	6.4	19.5	23.2	21.7	7.8	11.7
	Stressed	9	13.1	12.6	17.3	15.1	36.1
	Taking care of ill family members	2	6.6	23.6	30.1	5.2	10.1
	Lack of transport facility	0.9	4.1	36.3	56.4	14.2	43.5
	Misuse of COVID symptoms	23.6	71.9	20.7	24.5	2.5	4.6
	Post COVID weakness	5.1	12.7	19.9	15.4	5.3	10.5
	Not having COVID supportive leave policy	4	14.2	15.9	16.7	6.2	13.1
	Social stigma after COVID recovery	31.8	67.4	17.9	22.7	6	18.1
	Self-inhibition after COVID recovery	11.3	38.5	72	288.1	6.8	13.2

*p<.05, **p<.001

individual characteristics and absenteeism variables, according to the findings. The correlation matrix shows that marital status is strongly and positively correlated with sickness absenteeism ($r=.32$), implying that sickness absenteeism is associated with single (unmarried) workers but not with married workers. COVID-associated characteristics, on the other hand, are found to be strongly and positively connected to sick leaves ($r=.39$).

Paid absences also appeared to be related to numerous variables. It is observed that paid absenteeism is highly and positively related to age ($r=.14$), indicating that older employees are more likely to be absent than younger employees. Employees with higher educational degrees have higher absenteeism rates ($r=.18$), indicating that the level of education has a significant and positive link with paid absence. Furthermore, the number of paid absences and the length of employment has a clear and favorable link. The type of the job (Type of work function) does, however, show a negative and significant link with paid absence ($r= -.42$), indicating that executives have higher absence rates (Table 2).

Univariate analysis result

The Univariate analysis has been used to explore if gender and other COVID-related characteristics had an impact on absenteeism. It is demonstrated in Table 3. Sickness absenteeism has varied significantly by gender and COVID related factors sign ($p.05$), indicating that male workers with issues related COVID like home isolation, hospitalization, and self-inhibition to attain workplace after COVID recovery have pointedly higher absenteeism rates than female employees with those symptoms. Unpaid absenteeism ($p.05$) has shown similar gender and COVID-related differences, demonstrating that female workers with difficulties such as fear of getting infected with COVID, caring for ailing family members, a lack of transportation

facilities, and post COVID weakness are more likely to have unpaid absence than male workers. Even though female employees have exhibited greater paid absence rates than male employees, there are no significant differences in gender and COVID-related characteristics (Table 3).

The above table shows that paid absenteeism differed significantly by marital status and COVID-related factors ($p.05$), implying that single workers suffering from home isolation due to COVID, a lack of transportation, and self-inhibition to return to work after recovering from COVID have significantly higher absenteeism rates than married workers born for the same reasons. Sickness and unpaid absences by marital status, on the other hand, have demonstrated no significant variations.

Predictors of absenteeism

A multivariate regression analysis was used to determine the factors that influence absenteeism. Table 4 shows the results of the regression analysis. Demographic variables like age, length of service, type of work function, and level of education were used in model 1(sickness absenteeism) whereas model 2 (paid absenteeism) included level of education and COVID-related factors as the explanatory variables (Table 4).

For sickness absenteeism, the comprehensive model is determined to be significant ($p.05$). The R square (r^2) is 0.25, indicating that sickness absenteeism predictor factors can explain 25% of the overall variance. Only the duration of service in the equation has a substantial and favorable impact on sickness absenteeism prediction. Similarly, the entire model is considered significant for paid absenteeism ($r^2 =.032$, $p.05$), as the equation's results can explain 3.2 percent of the variance in paid absence. Only the degree of education was found to be the predictor of paid absenteeism among the factors in the model.

Table 2. Correlation analysis result.

Variables	1	2	3	4	5	6	7	8	9	10	11
Sickness absenteeism											
Paid absenteeism	.20										
Unpaid absenteeism	.07	-.02									
Gender	-.07	.08	.03								
Age	.02	.14*	-.05	-.32**							
Length of service	.28	.15*	.06	-.07	.37**						
Marital status	.32*	.09	-.02	-.34**	.49**	.31**					
Type of work function	.01	-.42**	-.11	-.49**	.21**	-.01	.35**				
Level of education	-.24	.18*	.09	.50**	-.31**	-.12	-.39**	-.63**			
Presence of children	-.29	-.08	.02	.39**	-.51**	-.29**	-.87**	-.38**	.43**		
COVID related factors	.39*	-.02	-.08	-.01	.04	.01	.08	.06	-.14*	-.07	

*Correlation is significant at the 0.05 level (2-tailed), **Correlation is significant at the 0.01 level (2-tailed).

Table 3. Results of the uivariate analysis.

Absence Analysis	The Number of Absence Hours							
	COVID Related Factors				COVID Related Factors			
	Men (mean)	Female (mean)	F	R2	Single (mean)	Married (mean)	F	R2
Sickness	78.4*	47.6	3	0.21	44.2	172.1	0.736	7.8
Paid	24	33.8	0.794	-0.031	539.8*	222.9	2	18.7
Unpaid	22.2	24.6*	2	0.19	61.5	97.1	3.696	7.2

*P<.05.

Table 4. Regression analysis result.

Model	Variables	B	SD	β	R ² for Model
Model 1					
Sickness absenteeism	Age	76.3	118.9	0.105	25%
	Type of work function	-612.9	2238.8	-.052	
	Level of education	-565.5	749.8	-0.117	
	Length of service*	477.1	173.2	0.429	
Model 2	Level of education*	649.7	301.2	0.154	3.20%
Paid Absenteeism	COVID related factors	187.4	119.7	0.157	

Implication and Conclusion

There is a substantial body of empirical research that has been done to identify the factors that influence absenteeism, but there are only a few studies that have been done with COVID-related factors as a variable. The goal of this study is to add to the literature by examining how employee absenteeism during such a COVID pandemic is associated with demographic characteristics in a sample from the Rourkela steel factory in Odisha. The study also looked at the relationship between individual traits and absence patterns. Finally, the comprehensive contribution of the independent variables to employee absence prediction is also been assessed. Some implications can be reached from the findings obtained.

In the context of paid absence, there are considerable disparities found in both genders, according to the data. Female employees take more paid time off than male employees. Similar findings have been obtained in other studies. Executives with higher educational degrees (bachelor's degrees) are more likely to take advantage of paid sick leave. Another interesting conclusion is that the relationship between absenteeism and type of work function is extremely negative, indicating that executive absenteeism is significantly higher than non-executives. This conclusion contradicts the findings of Love et al. (2012), who discovered that executives take fewer sick days than non-executives. The correlation findings have also revealed that there is a statistically significant positive association between absenteeism and service length. This is consistent with Keller's (2008) findings, which have indicated that length of service does have a significant impact on absenteeism. The study's findings also revealed that marital status has a strong relationship with sickness absenteeism. This is in line with the findings of Adebayo and Nwabuoku (2008) and Westhuizen (2006), who found a link between absenteeism and married status. Absenteeism is found to be positively and significantly correlated to COVID related factors ($r=0.38$), which suggests that employees misuse COVID symptoms to obtain leaves and also prefer to avoid work due to the existence of social stigma at work after recovery, as it has shown a higher probability of absenteeism than other COVID related factors.

Furthermore, the Univariate analysis revealed that sickness and unpaid absence differed considerably by gender and other COVID-related characteristics. Male workers with home isolation, hospitalization, and self-inhibition to return to work after their recuperation had greater levels of sickness absenteeism, according to the findings. Female workers, on the other hand, who are afraid of having COVID, taking care of sick family members, lack of transportation during those days, and avoiding social shame at work after their recovery, have a higher rate of paid absence. Moreover, whereas the length of service has predicted sickness absenteeism, an educational degree is found to be a significant predictor of paid absenteeism, according to the regression analysis. This result is consistent with Frenkel et al. (2005), who found that managerial tenure and education are predictors of absence. When it comes to explaining employee absence, however, gender has not been a significant determinant. This finding is similar to Adebayo and Nwabuoku's (2008) findings, which found that gender was not a predictive variable in employee absenteeism but not to Allisey's (2011) findings, which identified gender as a significant predictor of absenteeism behavior.

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How to cite this article: Kalyani, Muna and Nirajana Das. "HR Interventions in New Normal, Factors of Employee Absenteeism at Rourkela Steel Plant, Odisha during COVID-19: A Causal Model." *Arabian J Bus Manag Review* 12 (2022): 437.