ISSN: 2278-4632
Vol-10 Issue-5 No. 14 May 2020

# A study on Sickness absenteeism and factors associated, among Iron & steel Industries workers from Odisha:

*Nirajana Das
Asst.Professor, Srusti Academy of Management, Bhubaneswar

** Dr.Muna Kalyani
Reader, Utkal University

## ABSTRACT:

Sickness absenteeism (SA) is a complicated phenomenon describing absence of an employee on scheduled work caused by illness and injury. Absenteeism due to sickness is multidimensional involving both physical & psychological illness. The iron and steel industries are principally hazardous work places for employees. The state Odisha claims more than 35% of India's iron ore resources, which is about 5231 million tons of iron ore and this is being taken as the principal reason for the growth of industries to manufacture aluminum, steel, refractoriness, Ferro-alloys, cement etc. Research work on health status, working condition impact on sickness absenteeism of iron and steel workers is limited in Odisha therefore this study was chosen to investigate sickness absenteeism and factors associated to it among the worker population of Iron and Steel factories.. A sample of 232 blue-collar comprising of labor, foreman and supervisor from 645 was selected from (RSP) Rourkela steel plant, Rourkela & (NINL) Neelachal Ispat Nigam limited, Jajpur considering their frontline contribution to productivity. Stratified random sampling method was used for sampling and data was collected through a structured pre-tested questionnaire. Percentage method was applied to quantify the contribution of identified factors of SA while chi-square was applied to access the relationship among them at a significance level of $<0.05$. Musculoskeletal disorders (MSD) and hazardous working condition were found to be more common factors for sickness absenteeism.

**Key words**: Sickness absenteeism risk factors, Occupational health, Steel industry workers, Odisha

 

ISSN: 2278-4632
Vol-10 Issue-5 No. 14 May 2020

# 1. Introduction:

Ngayen, et.al ,(2013), presented absenteeism as a complex and multi factorial phenomena influenced by various interrelated factors and According to the World Health Organization (WHO), in the EU-15, in 2013, an average of 10.9 days of work per employee were lost due to sickness absence. Work absence can be voluntary, meaning under the employee's control, or involuntary, meaning not under the employee's control (Hassan, et.al, 2014). Three Hundred Forty million occupational accidents and diseases occur on the job every year, of which 50 to 60% of these accidents and diseases cause employees away from work for at least four working days, a report of International Labor Organization (ILO, 18th International Conference of Labor Statisticians). A recent study on iron and steel industry's workers of Karnatak, India 2017 revealed, a substantial costs to employees, employer, Government is due to the sickness absenteeism and considered as a major occupational health problem (Manjunatha, et.al,2011)

Iron and Steel industry is potentially inclined to have precarious unsafe accidents and occupational diseases. This Industry relies heavily on blue-collar workers involving a whole range of processes-chemical, metallurgical, mechanical, and electrical, construction road and rail traffic, materials handling, earth moving, nucleonic and many others. The mental and physical vigor of workers in heavy Industries significantly having impact in determining and conserving productivity. The iron and steel industries environment have oven and furnaces, artificial increase in heat noise, vibration, and dust. Iron and steel workers are especially prone to occupational health problems and experience more sickness absenteeism, (Aronsson, et.al 2000); therefore, study of sickness absence of workers in iron & steel industries is advantageous largely to access health status, morbidity, & identification of lethal occupational health hazards.

 

ISSN: 2278-4632
Vol-10 Issue-5 No. 14 May 2020

It is a fundamental challenge for the employer, occupier to manage & quantify sickness absenteeism among other the types of employee absenteeism. Less number of published data is available addressing this issue from Odisha's Iron & steel Industries workers with several limitations (average annual working days; shortcomings in the monitoring process and in measuring techniques). Therefore, this study was undertaken to indentify the factors of sickness absenteeism and to access relationship between them.

## 2. Literature review

Employee absenteeism usually stems from reasonable personal and legitimate medical issues. However, chronic absenteeism may interrupt the workflow as well as cause a big cavity into productivity level. Along with production disruption, it costs the organization profit side when temporary workers are being hired or overtime is paid to conceal the absent worker's duties, though legalized causes for missing scheduled work, including sickness and workplace injuries, are unavoidable. An average of 10.9 days of work per employee was lost due to sickness absence, According to the World Health Organization (WHO), in the EU-15, in 2013, and Sickness Absenteeism (SA) is costly and difficult to measure. A study conducted in iron & steel industry workers in Karnataka, India showed that about 66.9% of the workers were absent due to health related conditions,( Aronsson, et al. 2000) & sickness absences have important consequences for individuals, organizations & society as a whole,( Alexopoulos EC, et.al. 2012). The construct sickness absenteeism carries assorted meaning for different categories of employment conditions and the manifestation of illness arising from health habitually is a risk factor for industry transience and employee morbidity. ILO defines sickness absence is usually of shorter duration due to illness from work, which is acknowledged by the worker to workplace related hazards, employment injury and illness & psychosocial factors, (Eyal A, et al. 1994).

 

Sickness absence is not a simple function of ill health and previous review of literature indentified many factors like socio-demographic characteristics, including gender (Grossi G, et al, 1999), age of the workers (Sundquist J, et al, 2007 & Beemsterboer et al, 2009) marital status (Duijts SF, et.al, 2007 & Lai C, 1994) educational level (Taylor, P.J, 1983 & Gimeno D, et al. 2004). 1997, Parkes, K. R; described sickness absenteeism as a consequence above mentioned psychosocial factors, (Pauly,M.V ,et al.) and Marmot et al. explained it as the positive relationship between alcohol consumption and ill health, (Laaksonen M, et al.) Consequently unmarked psychosocial factors, like occupational stress (Nakata A, et al. 2011 & Lana AT, de León AC, García MM, Jaime AA, job satisfaction (Nakata A, et al., 2011 & Henderson M, et al., 2005) and Individual behavioral factors, including smoking (Henderson M, et al.) and alcohol consumption (Lana AT, et al.2005 & Henderson M, et al.) are reported as the influencers of sickness absenteeism. Parallel to above factors many workplace factors, like periodic medical checkup, working hours and shift work (,Eyal A,et al.1994) employment type: permanent versus temporary (Zare R, et al.2017 & Nakata A,et al. 2011). Empirical Studies on sick leave regularly differentiate between sickness frequency and duration of sick leave. Sick leave frequency indicates the number of sickness spells an employee takes in a year along with relation between health and working condition, working relations, attendance motivation determinants, personal well-being (Hornquist J, et al., 1993 & Reynolds S, 1997) individual factors (Henderson M, et al.2005) and atmosphere at the workplace (Aghilinejad M, et al., 2012) working conditions are regarded as important factors for sick leave frequency.

Most of the long-term sickness absence is identified by symptom-based conditions - chiefly musculoskeletal and common mental disorders (Gheldof EL, et al. & Hoverstad T et al. 1991) , where as weekly sick absences are mainly due to Physical workload (.Kentner M. 1991) Steel and iron industry workers are exposed to injurious work environment and possibility of getting employment injuries are

 

ISSN: 2278-4632
Vol-10 Issue-5 No. 14 May 2020

higher. Iron and steel production workers carry out a number of tasks (e.g., iron making, steelmaking, and steel rolling) and exposed highly to toxic substances such as metals (e.g., chromium, manganese, lead, and cadmium), carbon monoxide, various dusts, fumes, acid mists, solvents, oil mists, and physical hazards including heat, noise, ionizing radiation and vibration (Aghilinejad M, et al.2012).

## 2.1 Research Gap

Sickness absenteeism imposes losses on productivity and on wage bills also. This output loss becomes more trouble oriented when the related jobs and production line is stalled due to the sick workers, (Pauly,M.V, et al.) and it will be more destructive for continuous production line of iron & steel Industry. A zero rate of sickness absenteeism may not be an optimal and realistic goal for firms (.Pauly,M.V,et al.) but a realistic approach to arrest this problem is always preferable. Therefore, this study was undertaken to study the associated factors of SA.

## 2.2 Objectives of the Study

**Primary Objective**

- To study the factors contributing to sickness absenteeism among iron & steel industries' workers in the state of Odisha.

**Secondary Objective**

- Evaluate employee's awareness about sickness absenteeism among Iron & Steel industry's workers.
- To indentify factors related to sickness absenteeism.

 

ISSN: 2278-4632
Vol-10 Issue-5 No. 14 May 2020

## 2.3 Limitation of the Study

Due to time constraint and unwillingness of workers to fill the questionnaire, it was not possible to collect responses from the entire preferred sample. This study is solely for academic purpose and is not applicable for allied Iron & Steel companies.

## 2.4 Scope of the Study

Employee absenteeism is indistinct and difficult to measure for the HR department. To quantify sickness absenteeism is being always the challenge for the employer in defining the duration of absenteeism, leading causes of absenteeism and measurement of losses incurred by it. The study of finding the factors influencing sickness absenteeism in iron & steel industries will be helpful for the employer, occupier, and for future research.

**3. Research Methodology**

All together 14 departments from both the factory were selected for this study and to access the associated factors for SA , the researcher adopted well-structured questionnaire to obtain the information (primary data) directly from the workers of Rourkela Steel Plant and Nilachal Ispat Nigam limited. odisha. A sample of 232 employees was selected on a stratified sampling method considering their input in production line especially in three categories like Labour, supervisor and supervisors. 86% Response rate was observed to a questionnaire prepared on various normal & leading determinants of sickness absenteeism, present absence policies, working condition, level of illness resistance. With an aim to access, the worker's psychology and motivating factors towards stable attendance at the factory side five questions on health, safety, and environment were also formulated.

 

ISSN: 2278-4632
Vol-10 Issue-5 No. 14 May 2020

## 3.1 Analysis & findings

The data were collected and analyzed using SPSS version 20. Table 1 -5 demonstrated Percentage analysis for demographic factors, health reasons, leading problems for longer duration sickness absenteeism, Satisfaction with the workplace condition, Hygiene and Health, safety and environment factors to avoid absenteeism, while chi-square analysis was applied Job Category and Level of illness resistance & Age and Level of satisfaction towards present working condition. The findings were discussed for each set of factors following their respective tables.

**Table 1: Demographic Factors**

| **Item** | **Sample (N=232)** | **Percentage%** |
|---|---|---|
| **Gender** | | |
| Male | 180 | 77.58 |
| Female | 52 | 22.41 |
| **Age** | | |
| 20-35 | 52 | 22.41 |
| 35-50 | 154 | 66.37 |
| >50 | 26 | 11.22 |
| **Marital Status** | | |
| Married | 124 | 53.44 |
| Unmarried | 108 | 46.56 |
| **Educational Qualification** | | |
| Graduates | 38 | 16.37 |
| Diploma | 92 | 39.67 |

 

ISSN: 2278-4632
Vol-10 Issue-5 No. 14 May 2020

| | | |
|---|---|---|
| B.Tech | 102 | 43.96 |
| **Work Experience** | | |
| 1-5years | 140 | 60.35 |
| 6-10 years | 54 | 23.28 |
| >10 years | 38 | 16.37 |
| **Category Of employees** | | |
| Labor | 126 | 54.31 |
| Foreman | 60 | 25.86 |
| Supervisor | 46 | 19.83 |
| **Average Monthly Wages** | | |
| 10000-18000 | 85 | 36.63 |
| 19000-25000 | 90 | 38.79 |
| >25000 | 57 | 24.56 |

**Table 1**: More Male employees (77%) than female responded. Of the largest age group was 35 to 50 years old, accounting for 66 % of the total. Most respondents were married (53%) and had qualification of B.Tech (44.0%). Majority of the respondents had a work experience of 1-5 years (60.0%). Categories of the respondents are (54%) labor, then (25%) of the respondents are Foreman and (19.0%) of the respondents are supervisors.

 

ISSN: 2278-4632
Vol-10 Issue-5 No. 14 May 2020

**Table 2. Health Reasons for Absenteeism of the Respondents**

| Sickness Absenteeism | No of Respondents | Percentage % |
|---|---|---|
| Minor illness | 72 | 31 |
| Flu and Influenza | 106 | 46 |
| Diarrhea | 16 | 7 |
| Gastrointestinal | 37 | 16 |
| All of the above | 0 | 0 |
| Total | 232 | 100.0 |

**Table.2** report that 31.0% of the respondents' absenteeism is due to the Minor Illness covering un-easiness, nausea headache and muscle pain. 46. % of the respondents' absenteeism claims flue, influenza, and fever. 7.0 % of the respondents' absenteeism is due to diarrhea and 16% of the respondents' absenteeism is due to gastrointestinal disorder.

**Table 3. Leading Problems to longer period of sickness Absenteeism**

| Leading Problem | No of respondents | Percentage |
|---|---|---|
| Bronchial asthma | 13 | 5 |
| Kidney problem | 9 | 4 |
| Employment Serious injuries | 47 | 21 |
| musculoskeletal disorders (MSD) | 154 | 67 |
| Typhoid | 6 | 3 |
| Total | 229 | 100.0 |

 

ISSN: 2278-4632
Vol-10 Issue-5 No. 14 May 2020

In spite of normal sickness, few leading factors were analyzed. **Table 3**: report that 5% of the respondents' absenteeism is due to bronchial asthma problems, 4% of the respondents' absenteeism is due to issues related to kidney functioning, 21% of the respondents is showing withdrawal behavior due to employment injuries needing rest at home. The highest percentage 67% workers reported suffering MSD (musculoskeletal disorders) and its consequences in taking sick leaves for more than 3-4 days at a stretch for regular check up and fatigue at workplace. Typhoid remained at 3% to influence absence behavior of employees.

**Table 4. Satisfaction with the absenteeism policy**

| **Opinion** | **No. Of respondents** | **Percentage** |
|---|---|---|
| Highly satisfied | 14 | 6 |
| Satisfied | 57 | 25 |
| Neutral | 83 | 36 |
| Dissatisfied | 46 | 20 |
| Highly Dissatisfied | 30 | 13 |
| Total | 230 | 100.0 |

It could be observed from the **Table.4**, that 6.0% of the respondents are highly satisfied with the present Sickness absence policy, 25.0% of the respondents are satisfied, and 36.0 % of the respondents are neutral to it. 20.0 % of the respondents are dissatisfied and need an improved policy to avoid camouflaged sickness absences while 13.0% of the respondents are highly dissatisfied and intentionally avail sick days out of frustration.

 

ISSN: 2278-4632
Vol-10 Issue-5 No. 14 May 2020

**Table 5: Attendance motivation & Health, safety and environment factors to avoid absenteeism**

| Opinion | No of Respondents | Percentage |
|---|---|---|
| Regular safety training | 39 | 17 |
| Wellness Program | 66 | 29 |
| Immediate Medical facility at accident/injury spot | 46 | 20 |
| Clear Sick leave policy | 28 | 12 |
| Health Incentives | 50 | 22 |
| Total | 229 | 100.0 |

**Table.5** report that 17.% of the respondents are motivated to attend work regularly when they receive informative and useful safety training on regular basis being in a hazardous workplace. Distinctive figure of 29% of respondents advocated for wellness program inclusive of stress management, smoking, as well as drinking cessation in factory premises to aware blue-collar employees aware of good health to maintain their attendance on track. 20% of respondents feel the urgent need of immediate medical facilities at workplace accidents and serious injuries cases. When responses are required about clear sick leave policies of the factory only 12% of respondents favored for it considering the ignorance of existing sick leave polices among blue-collar workers. Nearly 22% of respondents look for health incentives as a motivating factor to attend duty as well as keeping own- health undamaged.

## 3.1 Chi-Square Analysis

(H0): There is no significant relationship between Job category and level of illness resistance.

(H1): There is a significant relationship between job category and level of illness resistance.

 

ISSN: 2278-4632
Vol-10 Issue-5 No. 14 May 2020

**Table 6**: **Job Category and Level of illness resistance**

| **Job category** | **Level Of Resistance** | | | | | **Total** |
|---|---|---|---|---|---|---|
| | Highly Resistant | Moderate Resistant | Natural Immunity | Moderate Susceptible | Highly Susceptible | |
| Labor | 24 | 30 | 30 | 42 | 0 | 126 |
| Foreman | 8 | 8 | 6 | 6 | 0 | 28 |
| Supervisor | 6 | 22 | 6 | 12 | 0 | 46 |
| Total | 38 | 60 | 42 | 60 | 0 | N=200 |

## Chi-Square Test

Significance level : 0.05
Degree of freedom : 8
Table Value $\chi^2$ :15.507
Calculated Chi square value is :12.086

Significance : No Significance

**Table -6** explain that there is no significant relationship between Job category and level of illness resistant power. Category of jobs necessarily does not define sickness absenteeism absolutely.

**Age and Level of satisfaction towards present working condition**

(H0): There is no significant relationship between Age and Level of satisfaction towards present Ergonomics.

(H1): There is a significant relationship between Age and Level of satisfaction towards present Ergonomics.

 

ISSN: 2278-4632
Vol-10 Issue-5 No. 14 May 2020

**Table 7: Age and Level of satisfaction towards present Ergonomics**

| **Age** | **Level of Satisfaction** | | | | | **Total** |
|---|---|---|---|---|---|---|
| | Highly Satisfied | Satisfied | Neutral | Dissatisfied | Highly Dissatisfied | |
| 20-35 | 6 | 2 | 6 | 4 | 2 | 20 |
| 35-50 | 2 | 54 | 40 | 34 | 24 | 154 |
| >50 | 4 | 16 | 4 | 2 | 0 | 26 |
| Total | 12 | 72 | 50 | 40 | 26 | N=200 |

Significance level : 0.05
Degree of freedom : 8
Table Value $\chi^2$ : 15.507
Calculated Chi square value is : 41.568

Significance : Significance

The calculated chi-square value obtained in table 7 is greater than tabulated value and it is reveals that, there is a significant relationship between Age and Level of satisfaction towards present Ergonomics, ignoring the null hypothesis.

## Conclusion:

Based on the results of the study, sickness absenteeism can be differentiated for shorter and longer period. (SA) of 3-4 days can be explained due to minor illness, flue & influenza ,diarrhea and gastrointestinal problems while leading health issues like diabetes, kidney problems, employment injuries, musculoskeletal disorders (MSD) & typhoid for longer SA for more than a week. Heavy industries like steel and iron industry can improvise and effectively communicate their absence policies to Blue-collar workers to avoid unnecessary cost and loss of

 

production. Front line workers usually do monotonous work in a hazardous working environment and they preferred to have wellness programs like smoking cessation programs, yoga classes, and employee assistance programs might be considered to implement for better absence management. Subsequently initiatives like these can also persuade workers to attend worksite regularly with good health. Heavy Industry like iron & steel must ensure safe and healthy working conditions concerning favorable ergonomics, light and air ventilation, temperature and humidity to enhance production capability and boost employee positive morale. In light of the above discussion and findings, we believe that our experimental research work will contribute to the existing literature on the factors associated with sickness absenteeism in iron & steel industry though it is limited to Odisha region only.

# Reference

1. Nguyen H. Groth M. & Johnson A. (3rd June 2013). When the Going Gets Tough, the Tough Keep Working Impact of Emotional Labor on Absenteeism. *Journal of Management*,42:615–43. https://doi.org/10.1177/0149206313490026

2. Hassan, Wright, & Yukl. (2014). Does Ethical Leadership Matter in Government**,** Effects on Organizational Commitment, Absenteeism, and Willingness to Report Ethical Problems, *Public Administration Review*, volume 74,issues , https://doi.org/10.1111/puar.12216

3. International Labor Organization: *18th International Conference of Labor Statisticians*. In. Geneva; 2008. http://oit.org/wcmsp/documents/meeting document /wcms_09913 4.pdf. Accessed 7 Oct 2018.

4. ALM L., A Barbosa, MD,T., IA,S., & DC, C., (Dec 28;2017), Sickness absence among municipal workers in a Brazilian municipality: a secondary data analysis. *BMC Res Notes*, 10(1):773. Doi: 10.1186/s13104-017-3116-5. 10(1):1–9.

5. Manjunatha R, Kiran D & Thankappan K,(2011). Sickness absenteeism, morbidity and workplace injuries among iron and steel workers—a cross sectional study from Karnataka, Southern India, *Australasian Medical Journal AMJ* 2011, 4, 3, 144-7

 

6. Aronsson G., Gustafsson, K., Margareta, Dallner,M., (2000). Sick but Yet at Work. An Empirical Study of Sickness Presenteeism. *Journal of Epidemiology and Community Health,* 54(7):502-9, DOI: 10.1136/jech.54.7.502

7. Alexopoulos EC., Merekoulias G., Tanagra D., Konstantinou EC., Mikelatou E., & Jelastopulu E.,(2012) Sickness absence in the private sector of Greece: comparing shipyard industry and national insurance data*; Int J Environ Res Public Health.* 9(4):1171–81.

8. Isah E, Omorogbe V, Orji O, Oyovwe L.,(2008), Self-reported absenteeism among hospital workers in Benin city, Nigeria. Ghana *Med J*. 2008; 42(1):1–6.

9. Freeney A,North F, Head J,Canner R, & Marmot M.,(1998), Socioeconomic and sex differentials in reason for sickness absence from the Whitehall II study, *Occup Environ Med*.,55 (2);91-8.

10. Marmot M, Feeney A, Shipley M, North F, & Syme SL, (1995). Sickness absence as a measure of health status and functioning : from the UK Whitehall II study. J Epidemiology Community Health,49 (2),124-30

11. Laaksonen M, Pitkäniemi J, Rahkonen O, & Lahelma E, (2010). Work arrangements, physical working conditions, and psychosocial working conditions as risk factors for sickness absence*:* Bayesian analysis of prospective data. *Ann Epidemiology.* 2010; 20 (5):332–8, https://doi.org/10.1016/j.annepidem.2010.02.004

12. Lesuffleur T, Chastang J F, Sandret N, & Niedhammer I.,(2014), Psychosocial factors at work and sickness absence : results from the French National SUMER survey, *AM J Ind Med*,2014;57 (6) : 695-708

13. Grossi G, Soares J J, Ängeslevä J, & Perski A., (1 April 1999). Psychosocial correlates of long-term sick-leave among patients with musculoskeletal pain. Pain, 80(3),607-20

14. Sundquist J, Al-Windi A, Johansson S-E, & Sundquist K.,(2007) Sickness absence poses a threat to the Swedish Welfare State: a cross-sectional study of sickness absence and self-reported illness. *BMC Public Health,*7(45),1-11, https://doi.org/10.1111/j.1471-6712.1999.tb00549.x

15. Beemsterboer W, Stewart R, Groothoff J, Nijhuis F., (2009). A literature review on sick leave determinants, *Int J.Occup Med Environ Health*, 22 (2),169-79

 

16. Duijts SF, Kant I, Swaen GM, van den Brandt PA, & Zeegers MP.,(2007) A metanalysis of observational studies identifies predictors of sickness absence, J.Clin Epidemiol, 60(11),1105-15

17. Lai C.(1981).Sickness absence in a Singapore refinery, *Ann Acad Med Singapore*,23(5),660-4

18. Taylor, P.J. (1983). Absenteeism, Definition and Statistics of. In Encyclopedia of Occupationnal Health and Safety,3rd ed, *International labour office*,London,8-16

19. Gimeno D, Benavides FG, Amick BC, Benach J, & Martínez JM.,( 2004), Psychosocial factors and work related sickness absence among permanent and non-permanent employees. *J Epidemiol Community Health*,58 (10),870-6

20. Eyal A, Carel RS, & Goldsmith JR.,(1994), Factors affecting long-term sick leave in an industrial population, *Int Arch Occup Environ Health*,66 (4),279-82

21. Zare R, Choobineh A, & Keshavarzi S.,(2017), Association of amplitude and stability of circadian rhythm, sleep quality, and occupational stress with sickness absence among a gas company employees—a cross sectional study from Iran,Saf Health Work, 8(3),276-81

22. Nakata A, Takahashi M, Irie M, Ray T, & Swanson NG.,(2011), Job satisfaction, common cold, and sickness absence among white-collar employees: a cross- sectional survey,Ind Health, 49 (1),116-21

23. Beckerman P, Ilmakunnas P.(2008), Interaction of working conditions, job satisfaction, and sickness absence: evidence from a representative sample of employees,Soc Sci Med, 67 (4)

24. Lana AT, de León AC, García MM, & Jaime AA.,(2005) Smoking and sickness absence among public health workers, *Public Health*, 119 (2),144-9

25. Henderson M, Glozier N, Holl & Elliott K. Long term sickness absence. *BMJ. 2005; 330:802–803*,PMC *free article, Pub Med* ,[ Google Scholar]

26. Waddell G, Aylward M, Sawney P, (2002) Back pain, incapacity for work and social security benefits: an internal literature review and analysis, London, *Royal Society of Medicine*, [ Google Scholar]

27. Gheldof EL, Vinck J, Vlaeyen JW, Hidding A, & Crombez G.,(2005) The differential role of pain, work characteristics, and pain-related fear in explaining back pain and sick leave in occupational settings, *Pain*, 113:71-81 [ Google Scholar]

 

28. Hoverstad T, & Kjolstad S.(1991), Use of focus groups to study absenteeism due to illness. *J Occup Med*,33 (10),1046-50

29. Kentner M. (1991)., Frequency of absenteeism -value and modification by work disability data. *Dtsch Gesundheitsw*,61 (special),26-31

30. Hornquist J, Zar M, & Hansson B., (1997), Precursors of repeated short-term sick leave: an empiric review of some background,job,and well-being characteristics, *Scand J Soc Med*,21 (3),164-70

31. Reynolds S., (1997), Psychological well-being at work: is preventing better than cure? *J Psychosom Res*,*43* (1),93-102

32. Aghilinejad M, Choobineh AR, Sadeghi Z, Nouri MK, & Bahrami Ahmadi A.,(2012), Prevalence of musculoskeletal disorders among Iranian steel workers, *Iran Red Crescent Med* J,14:198 [ PMC free article] [PubMed] [ Google Scholar]

33. Mark V. Paulya, Sean N, Judy X, Dan P, & Patricia M. D,(2002), A general model of the impact of absenteeism on employers and employees, *health economics health Econ*,11:221-231

34. Pauly,M.V,Nicholson,Polsky D,Berger M.L, *Valuing reductions in on-the-job illness: 'presenteeism' from managerial and economic perspectives*, https://doi.org/10.1002/hec.1266

 