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OCCUPATIONAL ERGONOMICS AND HEALTH PROBLEMS FACED BY THE CARPENTERS

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Abstract

The study was conducted in Hisar district of Haryana state with the objective of understanding theergonomics health problems faced by carpenters in who 30 respondents were selected randomly. Carpentry is a skilled trade and a craft in which the primary work performed is the cutting, shaping and installation which is essential part in construction.Any construction-related Manual Material Handling task is considered to be an extremely risky they are frequently associated with injuries to the concerned workers. The main objective of this study was to analyze the health problems faced by carpenters.

Key words: Health, Ergonomics, Problem and Carpenter.

Introduction

Now a day we have understood the importance of ergonomics for designing systems and its effect on the life of every person. To full fill our physical, physiological, biomechanical, and psychological needs we have to take ergonomics in consideration (Anonymous, 2019a). Carpentry is one of the oldest skills and is still widely required to complete the construction. Carpentry includes the cutting, shaping and installation of wood for furniture and fitting (Anonymous, 2019b). Wood is oldest building material which has been used to fulfill the daily needs (Anonymous, 2020). The capability to modify wood has improved over centuries. Some of the oldest archaeological evidence of carpentry is also available in ancient structures.About 48,000 workers die in India due to occupational accidents of which 38 fatal accidents take place every day in the construction sector (Anonymous, 2017). In India workers are more prone to hazards due to multiple factors as lack of tools, lack of awareness and type of work as compared to developed countries.

Any construction-related Manual Material Handling task is considered to be an extremely risky they are frequently associated with injuries to the concerned workers, such as musculoskeletal disorders (MSDs) as they are typically associated with any Manual Material Handling task. However, very limited research has been carried out on occupational risk factors pertaining to Manual Material Handling task (Ray *et al.,* 2015).

Objectives

1. To study the occupational ergonomics of carpenters.
2. To analyze the health problems faced by carpenters.

Methodology

The study was conducted in Hisar district of Haryana state with the objective of understanding theergonomics health problems faced by carpentersin who 30 respondents were selected randomly. A well-structured questionnaire was constructed for data collection. Data were collected personally by the researcher.

Results and Discussion

Socio- personal profile of the beneficiaries

Age: The data in Table 1 reveal that majority of the beneficiaries in Hisar district were in the younger age group (50.00) followed by middle age group. Table 1 showed that majority of the respondents come under age group of45 to 55 followed by (23.33%) that was 25 to 35 years whereas 20% were belongs to younger age group and 13.33% were more than 55 age group. More than halfof the respondents (66.67%) work for 8 to 10 hours daily followed by 10 to 12 hours. Data also showed that 90% of respondents work 6 days in week and only 10% work for 7days in week; 33.33% respondents have 5 to 15 years of experience followed by 15 to 25 years of experience whereas 10% have more than 35 years of work experience. The majority of respondents belonged to medium age group were married, had joint family and low educational status.

Table 2 reveled that after becoming domestic workers respondents faced many problem related to health.Any construction-related Manual Material Handling task is considered to be an extremely risky. Table 3 showed the majority of respondent point out that the faced problem related to pushing followed by carrying problem, lifting and bending whereas biomechanical hazards problem were less.

Health problem related to ergonomics

As an occupation, the field of domestic worker is very diverse and challenging because of this we need to focus on problem related to ergonomics. Table 4 represented the information regarding upper limb problems of the respondents. Majority of the respondents faced problem in fingersand elbow joints followed by wrist joint and palm. They also feel discomfort in lower arm and shoulder joint. Table 5 informed thatthe information on lower limb problem of the respondents. Majority of respondents belonged to feet, ankle joint and knee joint problems followed by lower leg and thigh. They faced fewer problems in hip joint.

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Conclusion

Carpentry is a skilled trade and a craft in which the primary work performed is the cutting, shaping and installation which is essential part in construction. It involves the cutting, shaping and installation of wood (timber) for buildings and other structures. The majority of respondents belonged to medium age group were married, had joint family and low educational status. Respondent also point out that the faced problem related to pushing followed by carrying problem, lifting and bending whereas biomechanical hazards problem were less. Majority of the respondents faced problem in fingersand elbow joints followed by wrist joint and palm.

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Table 1: Personal profile of the respondents

N=30

Sr.No.	Variables	Beneficiaries
		Hisar (n=30)
	Categories	Frequency (%)
1	**Age**	
	Less than 25	6(20)
	25-35 years	7(23.33)
	35-45 years	5 (16.66)
	45-55 years	8 (26.67)
	Above 55 years	4(13.33)
2	**Daily Working hours**	
	Less than 8	3 (10)
	8-10	20 (66.67)
	10-12	7 (23.33)
3	**Working days in week**	
	All days	3 (10)
	6 days	27 (90)
4	**Experience**	
	Less than 5 years	4 (13.33)
	5-15 years	10 (33.33)
	15-25 years	8 (26.66)
	25-35 years	5 (16.67)
	More than 35 years	3 (10)

Table 2: Do you feel any problem during work

Particulars	Respondents	Percentage
Yes	30	100
Maybe	-	-
No	-	-
Total	30	100

Table 3: Posture problem

Problem	Severe	Moderate	Low
Biomechanical hazards	1(3.3)	10(33.33)	19(63.3)
Bending	3(10)	17(56.6)	10(33.3)
Lifting	7(23.3)	15(50)	18(60)
Carrying	14(46.6)	11(36.6)	5(16.66)
Pushing	19(63.3)	8(26.66)	3(10)

Table 4: Upper limb problem

Problem	Severe	Moderate	Low
Fingers	13(43.33)	10(33.33)	7(23.3)
Palm	8(26.66)	16(53.33)	6(20)
Wrist-joint	8(26.66)	17(56.6)	5(16.66)
Lower arm	9(30)	13(43.33)	8(26.66)
Elbow joint	12(40)	12(40)	6(20)
Shoulder joint	9(30)	12(40)	9(30)

Table 5: Lower limb problem

Problem	Severe	Moderate	Low
Feet	18(60)	8(26.66)	4(13.33)
Ankle joint	14(46.66)	13(43.33)	3(10)
Lower leg	13(43.33)	8(26.66)	9(30)
Knee joint	8(26.66)	19(63.3)	3(10)
Thigh	13(43.33)	12(40)	5(16.66)
Hip joint	6(20)	13(43.33)	11(36.66)