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Impact of bamboo weaving on health status of bamboo artisans in Northern Karnataka

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Abstract

The study was conducted in North Karnataka. Majority of the respondents belonged to middle age group followed by young age group (40.00%) and lesser (16.66%) per cent were from old age group. The highest mean score was given for the body tolerance of symptom problems during work was bearable in lower back followed by palm/finger. Symptom frequency of problems related to the pain during work was quite often in the body parts like lower back, followed by buttocks. When respondents experienced pain in the body parts like neck, shoulder and lower back respondents temporarily terminated the work. Positive and highly significant relationship between age and frequency of pain in the body parts like neck, shoulder, upper arm, lower arm, wrist, palm/finger, buttocks, knee and feet/ankle among old and middle age group of respondents. Whereas the relationship between young age group and frequency of pain in lower back is positively significant.

Keywords: Musculoskeletal disorder, bamboo and weaving

Introduction

Bamboo feeds millions of traditional workers, so it is known as "poor man's timber." Because bamboo grows faster and requires less supervision and knowledge, it offers a lot of promise for economic and environmental development. China is the world's largest producer of bamboo, while India is the world's second-largest grower. The central government and state governments have adopted a number of policies and plans to protect the bamboo industry. Bamboo artists, on the other hand, face a slew of issues relating to their work. Bamboo workers face occupational health risks such as musculoskeletal disorders caused by prolonged uncomfortable position, postural discomfort, pain in various body parts caused by reparative labour, and health issues caused by injuries such as cuts and piercing while stripping bamboo for weaving. Based on this the following objectives are framed:

1. To study the general information of the bamboo artisans
2. To examine the musculoskeletal disorder faced by bamboo artisans

Methodology

The current research was carried out in three important bamboo-growing districts in North Karnataka: Dharwad, Belagavi and Uttar Kannada. A random sample of 120 bamboo craftspeople was chosen at random from six villages in the study region (Narendra and Upinbatigeri village from Dharwad district, Munavalli and Yeragatti from Belagavi district, Malagi and Palla from Uttar Kannada district). As a result, the whole sample consisted of 120 bamboo craftspeople, including men and women. The study employed an exploratory research design. Using a self-structured interview schedule, the respondents were personally questioned to elicit the primary information. The data was analysed using relevant statistical tools such as frequency, percentages, mean, and correlation.

Result and Discussion

General information of selected bamboo artisans

Age: Higher per cent of the respondents belonged to middle age group followed by young age group. Similar observation was made by Kamrul and Nayeema (2015) ^[1] in their study, which shows that 56.00 per cent of the respondents belonged to middle age group (30-50 years) followed by 25.00 per cent of the respondents belonged to young age group (15-30 years).

Gender: More than sixty six per cent of the respondents were female followed by male. The results are in line with study conducted by Preetika and Amita (2018) ^[2] indicating higher involvement of women in bamboo activities.

Education: More than half of the samples attended primary school followed by illiterate. The results coated by Kalanzi *et al.* (2017) ^[3] are similar that indicates majority of the respondents obtained primary education (58.00%) followed by illiterate.

Marital status: Maximum per cent of the respondents were married followed by widow. These results are in par with the results of Nwaihu *et al.* (2015) ^[4] which shows that 76.00 per cent of the women were married and 24.00 per cent of the respondents were single.

Annual family income: Majority of the respondents belonged to medium level of income (13,900 to 16,300) followed by low income group (16,300/-) and high level of income group (13,900/-). Reasons may be that artisans work only during summer and they cannot work and sell their bamboo products during rainy season.

Work related body disorders while performing various activities among selected bamboo artisans (table2). The highest mean score 2.53 was given for the body tolerance of the symptom problems which indicates that the body tolerance during work was bearable in lower back followed by palm/finger, shoulder neck, upper arm. Frequency of problem related to pain during work was quite often in the body parts like lower back and buttocks. When respondents experienced pain in the body parts like neck, shoulder and lower back respondents temporarily terminated the work.

The results are on par with the results of the study conducted by Sangeeta *et al.* (2013) ^[5] which indicates that the pain in the body parts like neck, low back, leg, shoulder and ankle while performing the activity was more. Mrunalini and Logeswari (2016) ^[7] and Srinivasa and Sreedhar (2017) ^[6] found similar results.

There is positive and highly significant relationship to the frequency of pain to the cutting and stripping activities. Whereas the relationship between frequency of pain and

weaving activity was positively significant.

The reasons maybe cutting and stripping activities requires more physical strength and the respondents needs to work with heavy sharp tools which causes occupational health hazards compare to weaving activity.

There is positive and highly significant relationship between the old age and body parts like neck, shoulder, upper arm, lower arm, wrist, palm/fingers, lower back, buttocks, knee and feet/ankle.

The relationship between age and frequency of pain in the body parts like neck, shoulder, palm/fingers and lower back, buttocks and feet/ankle among middle age group of respondents was found positive and highly significant. Positive and significant relationship was also found between frequency of pain in upper arm and lower arm with the same age group of respondents. The relationship between young age group and pain in lower back is positively significant. (Table3)

Positive and highly significant relationship between the age and pain rating in the body parts like neck, shoulder, wrist, palm/finger, lower back and buttocks among old age group. Whereas the relationship between age and pain rating in upper arm and lower arm, elbow, knee and feet is positively significant.

The relationship between age and pain rating in elbow, lower arm, shoulder, upper arm, knee and feet/ankle was found positive significant among middle aged respondents. While there is positive and highly significant relationship between age and pain rating in neck, wrist, palm/finger, lower back and buttocks. Further positive and significant relationship was observed between age and pain rating in palm/finger and lower back among young age respondents.

The reasons maybe that as the age increases the physical strength of artisan's maybe reduces which is required for performing bamboo activities, which leads to more chances of occurrence of pain and experienced more pain among artisans (Table 4)

Table 1: General information of the selected bamboo artisans

N=120

Sl. No.	Demographic variable	Frequency	Percentage
1	Age		
	Young (Up to 35 years)	48	40.00
	Middle (36-50 years)	52	43.34
	Old (Above 50 years)	20	16.66
2	Gender		
	Male	40	33.34
	Female	80	66.66
4	Education		
	Illiterate	53	44.17
	Primary school	63	52.50
	High school	4	3.33
	PUC	-	-
	Degree	-	-
5	Marital status		
	Married	85	70.83
	Unmarried	12	10.00
	Widow	23	19.17
6	Family size		
	Small(below 5)	58	48.34
	Medium(5-7)	46	38.33
	Large (more than 7)	16	13.33
7	Family type		
	Nuclear	73	60.83

	Joint	28	23.33
	Extended	19	15.84
8	Annual income in rupees		
	Low (<13900)	28	23.30
	Medium (13900/- to 16300)	56	46.70
	High >(16300)	36	30.00

Note: Multiple responses

Table 2: Work related body disorders while performing various activities among selected bamboo artisans

Sl. No.	Parameter	Neck	Shoulder	Upper arm	Lower arm	Elbow	Wrist	Palm/ Finger	Lower back	Buttocks	Thigh	Knee	Feet/ Ankle	Total
1	Body tolerance	2.32	2.40	2.12	2.12	1.52	1.34	2.42	2.53	1.95	2.00	2.01	2.00	24.73
2	Symptom frequency	3.33	3.20	3.00	2.90	3.12	3.55	3.73	4.05	3.92	3.80	3.72	3.64	41.96
3	Impact on work	2.00	2.00	1.00	1.52	1.00	1.83	1.92	1.97	1.95	1.93	1.92	1.95	20.99

Table 3: Relationship between age and frequency of pain in the body part

N=120

Body parts	Up to 35 years	36-50 years	Above 50 years
	n=48	n=52	n=20
Neck	0.20	0.27**	0.32**
Shoulder	0.14	0.27**	0.30**
Upper arm	0.14	0.16*	0.20**
Lower arm	0.18	0.19*	0.20**
Elbow	0.09	0.22	0.27
Wrist	0.11	0.21	0.26**
Palm/fingers	0.26*	0.34**	0.36**
Lower back	0.22*	0.27**	0.32**
Buttocks	0.15	0.22**	0.25**
Thigh	0.16	0.17	0.20
Knee	0.15	0.27**	0.30**
Feet /ankle	0.18	0.30**	0.31**

Note: **Significant at one percent level

*Significant at five percent level

Table 4: Relationship between age and pain rating in the body parts

N=120

Body parts	Up to 35 years	36-50 years	Above 50 years
	n=48	n=52	n=20
Neck	0.14	0.16**	0.21**
Shoulder	0.16	0.18*	0.22**
Upper arm	0.12	0.18*	0.20*
Lower arm	0.15	0.18*	0.31*
Elbow	0.18	0.24*	0.26*
Wrist	0.20	0.24**	0.31**
Palm/fingers	0.20*	0.32**	0.34**
Lower back	0.30*	0.34**	0.36**
Buttocks	0.18	0.22**	0.29**
Thigh	0.14	0.17	0.19
Knee	0.16	0.20*	0.22*
Feet /ankle	0.09	0.12*	0.29*

Note: **Significant at one percent level

*Significant at five percent level

Conclusion

Majority of the respondents belonged to middle age group followed by young age group (40.00%) and lesser (16.66%) per cent were from old age group. The highest mean score was given for the body tolerance of symptom problems during work was bearable in lower back followed by palm/finger. Symptom frequency of problems related to the pain during work was quite often in the body parts like lower back, followed by buttocks. When respondents experienced pain in the body parts like neck, shoulder and lower back respondents temporarily terminated the work. Positive and highly significant relationship between age and frequency of pain in the body parts like neck, shoulder, upper arm, lower arm, wrist, palm/finger, buttocks, knee and feet/ankle among old

and middle age group of respondents.

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