

Original Research Article

A study on health profile of manjha makers in district Bareilly

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ABSTRACT

Background: Bareilly is famous for its manjha all over the world. More than 20,000 workers are engaged in the making the Manjha in Bareilly which is an important unorganized sector in western Uttar Pradesh. Objective was to study health profile of manjha makers in district Bareilly.

Methods: The workers engaged in making manjha were randomly approached in the selected areas and interviewed using a semi open ended questionnaire. Responses were marked based on duration and severity of symptoms.

Results: The mean age of study participants was 31 ± 9.9 years. The mean age of starting manjha making was 15.3 ± 6.7 years. 51 (47.2%) study participants were having wounds and cuts in hands and fingers.

Conclusions: Manjha makers are in direct contact with inhalable glass dust (silica dust) and chemical colors which can reach the circulation through cuts and wounds. The higher prevalence of musculoskeletal and respiratory symptoms as well as other symptoms like cut wounds in hands and possible absorption of dyes through cuts underlines the need of a larger study to know the factors causing these symptoms and ways to prevent the suffering of manjha makers.

Keywords: Manjha, Kite string, Health profile

INTRODUCTION

Bareilly is famous for its Manjha all over the world. More than 20,000 workers are engaged in the making the Manjha in Bareilly. Which is an important unorganized sector in western Uttar Pradesh. Manjha making involves various processes.

The cotton thread is gummed, colored and coated with powdered glass. The workers are exposed to adversities of environmental conditions as well as coloring chemicals like malachite green, congo red, rhodamine pink and Diazo black and dust of silica from powdered glass. Diazo dye Congo red is known to be carcinogenic.¹ Human intestinal microbiota play a key role in the metabolism of azo dyes. Some of metabolites of the dyes

produced by these microorganisms are carcinogenic.² Silica, is associated with a variety of occupational lung diseases including silicosis, tuberculosis, obstructive lung disease, and lung cancer.³ These manjha makers could be prone to many health related problems.

Females usually help in grinding the waste glass bottles in fine powder with the help of electrical or manual mill and males do the work of mixing the powdered glass, glue/starch and colors and application of this paste on the tightly tied cotton strings which are tied on bamboos. Each reel of thread is of approximately 900 yards and to get paid, the worker has to coat 12 such reels with the paste of glue, powdered glass and colors. So they have to walk around 10-12 Km/day, with a particular posture so as to tightly apply the paste to coat the thread. Finally the

coated and dried thread is collected on wooden wheel (charkhi) and sold to the petty contractors in manjha business.

Objective

To study the health profile of manjha makers in district Bareilly.

METHODS

Manjha making is done in different isolated pockets in Bareilly. We formed a list of all these areas 12 in number where manjha is prepared. From that list, chits were made for individual mohallas and picked three by simple random sampling (lottery method).

Three areas thus chosen by simple random sampling were Baqarganj, Imam bada, and Jappu ki tal.

Sample size

Sample size was calculated by using the formula $n = \frac{Z^2 PQ}{L^2}$

Z was taken as 1.96,

P = was taken as 50%, so as to get the maximum sample size at given absolute precision⁴.

Q= (1-P) and L= the absolute precision was taken as 10%

By this 'n' came out to be 96 and taking 10% more for nonrespondents, the final sample size was 108.

Study period: 10 June - 22 June 2015

The workers engaged in making manjha were randomly approached in the selected areas and interviewed using a semi open ended questionnaire. Responses were marked based on duration and severity of symptoms.

Inclusion criteria were that the age should be more than 18 yrs. And duration of work should be more than 6 months. The data was entered in Microsoft excel 2007 and was analyzed. The study has been conducted after getting the Ethical clearance from the institutional ethical clearance committee.

RESULTS

Table 1 depicts that were total 108 study participants including 90 males and 18 females. The mean age of the participants was 31 (± 9.9) years. Whereas the mean age at starting manjha making was 15.3 (± 6.7) years. Duration of involvement in manjha making 15.8 \pm 8.5 years. 61 (56.5%) participants were smokers and used to smoke bidi. 41 (38%) participants were used to chew Gutka/Tobacco both smoking and Gutka chewing was found among 37 (34.3%) participants.

Table 1: General characters of study subjects (n=108).

Gender- Male/ Female	90 Males/18 Females
Mean age	31 \pm 9.9 years
Mean age at starting manjha making	15.3 \pm 6.7 years
Duration of involvement in Manjha making	15.8 \pm 8.5 years
Literacy	1.8% were literate
Smokers	61 (56.5%) smoke bidi
Gutka/tobacco chewing	41 (38%) chew gutka/tobacco
Both smoking and gutka chewing	37 (34.3%)consume both

Table 2: Percent prevalence of different symptoms in manjha makers.

Symptoms related to Musculoskeletal system			Symptoms related to Respiratory system		
Symptom	Present (%)	Chronic (>6 months & severe) (%)	Symptom	Present (%)	Chronic (>6 months & severe) (%)
Joint pain	38 (35.2)	21 (55.3)	Cough	45 (41.7)	23 (51.1)
			Dyspnoea	45 (41.7)	21 (46.7)
Stiffness in muscles	47 (43.5)	27 (57.4)	Pharyngeal irritation	40 (37.0)	10 (25.0)
			sputum	14 (13.0)	12 (85.7)
			Change in voice	18 (16.7)	3 (16.7)

Table 2 shows percent prevalence of different symptoms in manjha makers. More than half of the participants reported Symptoms related to respiratory system and musculoskeletal system. 45 (41.7%) participants reported

suffering from cough and out of them 23 (51.1%) were suffering from chronic and severe cough. 45 (41.7%) were suffering from dyspnoea among them 21(46.7%) were suffering from chronic and severe dyspnoea.

47(43.5%) participants reported stiffness in muscles which was chronic and severe in 27 (57.4%) of participants.

Table 3: Per cent prevalence of symptoms other than Muskulo skeletal and respiratory systems in manjha makers.

Symptom	Present (%)	Chronic (>6 months & severe) (%)
Weakness	77 (71.3)	73 (94.8)
Headache	54 (50.0)	24 (44.4)
Giddiness	48 (44.4)	15 (31.3)
Palpitation	35 (32.4)	14 (40.0)
Chest pain	31 (28.7)	15 (48.4)
Wounds in hands and fingers	51 (47.2)	
Loss of weight	42 (38.9)	
Epistaxis	9 (0.8)	

Table 3 reveals the percent prevalence of symptoms other than musculoskeletal and respiratory systems in manjha makers. Among symptoms other than musculoskeletal and respiratory symptoms was weakness 77 (71.3%) which was chronic and severe in 73 (94.8%) participants. There were visible cuts and wounds in 51 (47.2%) participants. Other symptoms were headache, giddiness, palpitation.

DISCUSSION

In present study the respiratory symptoms including cough and dyspnea were present in 45 (41.7%) participants in comparison to the prevalence of chronic respiratory symptoms in the INSEARCH study (2006-2009) of ICMR where it was found to be 8.5% among general population⁵. Prevalence of respiratory symptoms in present study was also higher than the prevalence of chronic cough, chronic phlegm and dyspnea reported by Chabra et al in Urban Delhi in which the prevalence was found to be 2.0%, 1.2% and 3.4% respectively.⁶ This higher prevalence of respiratory symptoms among manjha makers points towards certain epidemiological factors associated with their occupational environment which need to be looked into deeply by further studies.

In present study the prevalence of musculoskeletal symptoms including joint pain (35.2%) and stiffness in muscles (43.5%) was found to be much higher than that reported in the study on Epidemiology of Musculoskeletal Conditions in India conducted by ICMR that reported the prevalence of Musculoskeletal disorders in Delhi as 7.08%, in Dibrugarh it was reported to be 11.52% and 9.53% in Jodhpur.⁴ This higher prevalence of musculoskeletal symptoms among manjha makers again points towards certain factors associated with their occupation. The prevalence of musculoskeletal symptoms was reported to be less than 25% in the study conducted

by Sachdeva et al among salt workers in Rajasthan, India, much lower than in manjha makers.⁷

In present study the prevalence of cuts and wounds in hands of manjha makers was found to be (47.2%) higher than the Prevalence of dermatological symptoms (43.8%) in the study conducted by Sachdeva et al among salt workers in Rajasthan, India.⁸

Prevalence of giddiness in present study was found to be (44.4%) whereas prevalence of giddiness was 28.2% in the study conducted by Sachdeva et al among salt workers in Rajasthan, India.⁸

Manjha makers are in direct contact with inhalable glass dust (silica dust) and chemical colors which can reach the circulation through cuts and wounds.

The physical stress of hard work in sunlight might be a potent cause of headache, giddiness, muscular pain, joint pain and general weakness present among the workers.

The higher prevalence of musculoskeletal and respiratory symptoms as well as other symptoms like cut wounds in hands and possible absorption of dyes through cuts underlines the need of a larger study to know the factors causing these symptoms and ways to prevent the suffering of manjha makers.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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