

Awareness on the cost-effective treatment modalities for the management of pain among weavers in Kanchipuram, Tamilnadu

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Abstract

Background: Kanchipuram is one of the biggest production centres of pure silk handlooms where no entry of power looms is being tolerated nor an introduction of any new techniques of production is readily accepted by the most quality-conscious weavers who are more concerned with the stable fineness of the texture of their handloom fabrics. Literature suggests that Indian handloom weavers have high prevalence of pain. **Aim:** To educate the weavers about the cost effective treatment modalities for the management of pain. **Evaluation of degree of pain and various treatment modalities from the weavers.** **Methods:** Various treatment modalities were evaluated using a performed questionnaire. Their degree of pain was assessed using Brief pain inventory scale. **Results:** The present study showed that around 32.80% of the weavers within the age group of 25-50 years were affected by severe pain. And 54% of weavers were under the AYUSH medications and also 36% of weavers preferred NSAIDs, among them Diclofenac and Paracetamol are the most commonly prescribed drugs. **Conclusion:** Our present study would have helped the weavers to obtain the cost effective and alternate treatment modalities for management of pain.

Keywords: Low back pain, Weavers, Occupational, Alternative Treatments.

INTRODUCTION

Weaving is one of the oldest industries in India. About 60,000 people are engaged in weaving particularly in Kanchipuram area.^[1] On an average, weavers belong to lower social economic status. Long work hours, uneasy postures and strenuous activity lead weavers to the risk of work related musculoskeletal disorders and low back ache (LBA).^[2] Low back ache has been identified as an important occupational health issue and a potential cause of disability among occupational groups.^[3,4] It was suggested by WHO that LBA is one of the most ergonomic stressors.^[5]

Literature suggests that Indian handloom weavers have high prevalence of pain.^[6,7] Pain is defined as an unpleasant sensory or emotional experience associated or potential tissue damage or described in terms of such damage.^[8]

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Pain is generally categorized into two types, Acute pain and chronic.^[9] Acute pain is due to any injury that activates nociceptors at the local site. Acute pain immediately results in stress reaction in the subject associated with somatic, autonomic or affective behaviour. Chronic pain is invariably associated with any tissue destruction and originate from the skin or deeper tissues. It is described as the dull and aching with poor localization. Behavioural changes may manifest as loss of appetite, disturbance of sleep and depression in subject experiencing chronic pain. Even though, an extensive armamentarium of pharmacological preparations is available to treat people with chronic pain. A study by cousins et al suggests that the cost of health care for the patients with chronic pain might exceed the treatment cost incurred by the cancer and AIDS patient.^[10] The pain medication does not eradicate all pain for majority of patients. Hence, pharmacological and non-pharmacological treatment combinations like traditional medicines/physiotherapy can lead to an affordable and an effective management. This enthused to analyse the cost effective treatment modalities for the management of pain on the members of silk handloom weaver co-operative societies in Kanchipuram District.

Primary Objectives

- To assess the degree of pain using a brief pain inventory
- To evaluate the various treatment Modalities received by handloom weavers for pain

Secondary objective

- To educate and to create awareness among the weavers about the cost effective treatments available

Methodology:

Study Design and Setting

This was an observational cross sectional study conducted in Kanchipuram, for a period of 2 months from August 2021 to September 2021.

Study Population

The study population were the weavers residing at Kanchipuram belonging to either sex and above the age of 18.

Sample Size

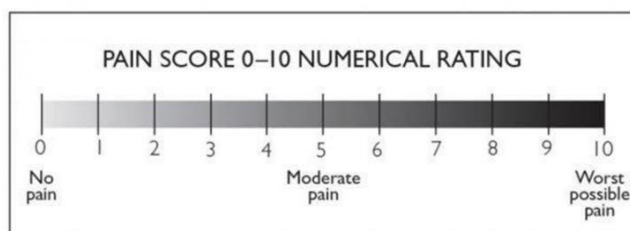
It was calculated as 183 participants based on 48% prevalence rate at confidence limit with 10% relative precision.

Method

Assessment of pain was carried out by using brief pain inventory scale.^[11] Brief pain inventory scale is an

excellent tool for monitoring the effects of pain, the treatment of pain both in terms of patient's functional ability or disability over time. And it's also used to assess severity of pain, impact of pain on daily function, location of pain, pain medications and amount of pain relief in the past or the past week.

Interpretation of the brief pain inventory scale score



Various treatment modalities were evaluated using a performed questionnaire. This questionnaire consists of the demographic profile of the participants and question related to indications, drug prescription and drug compliance. The questionnaire was prepared in vernacular language to make it more comprehensive.

Awareness on the cost effective treatment modalities among the study population was created by implementing certain health education strategies like audio Visual aid campaigns.

The inclusion criteria were

- History of low back ache.
- Age above 18 years.

The exclusion criteria were

- Presence of the herniated lumbar disk, acute phase of the lumbar disk protrusion and presence of the vertebral fracture(s).
- Cardiovascular or systemic diseases.
- Neurological deficit.
- Presence of the psychiatric disorder
- Pregnancy.

Data Collection Method

The investigators explained the purpose of the study to the potential responder prior to administering the survey questionnaire. Participation in the survey was voluntary. Informed consent was obtained from all participants. Institutional ethical committee clearance had been obtained.

Data Analysis

All filled questionnaires were double-checked and then collected data were fed into an Excel spreadsheet dataset. Analysis was done using Statistical Package for Social Science (SPSS) version 23. Description statistics were also used.

Results

The study was conducted in Kanchipuram among the silk weaver's community. The aim of the study is to provide

awareness on the cost effective treatment modalities for the management of pain among weavers. A total of 183 subjects were included. The average age of subjects was between 18 and 70 years. Out of 183 subjects, 141 were male and 42 were female. The demographic characteristics of the participants are represented in Table 1. The weavers were divided into many groups based on their Age, Gender, Socioeconomic status, Years of experience and working hours per day.

Table 1: Socio demographic profile

Demographic characteristics	Frequency (n=183)	Percentage (%)
Age	<25	21
	20-25	112
	>50	50
Gender	Males	141
	Females	42
Education	Illiterate	132
	High school	39
	Higher secondary	8
	Graduate & above	4
		2.2%

Socioeconomic Status		
Lower income status	171	93.4%
Middle income status	11	6.05%
Upper income status	1	0.5%
Years of experience as weaver		
0-15	110	60.1%
16-30	41	27.4%
31-60	32	17.5%
Working hours/day		
0-8	65	35.5%
9-14	118	65.5%

The present study had 32.80% of weavers of age group 25-50 years had severe pain followed by 23.50% of weavers of age group greater than 50 years as shown in Figure 1. Maximum pain was observed among Female weavers (57%) followed by Male weavers (43%) as depicted in Figure 2.

Figure 1: Percentage of weavers affected by pain in relation with their age

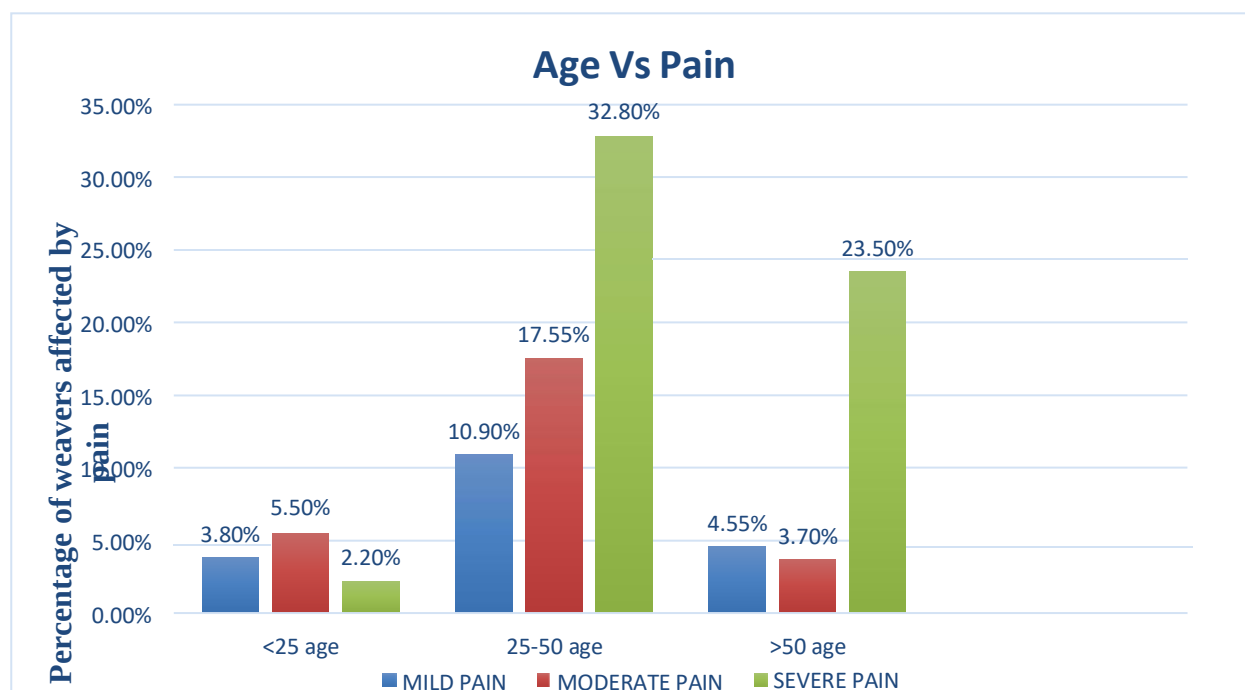
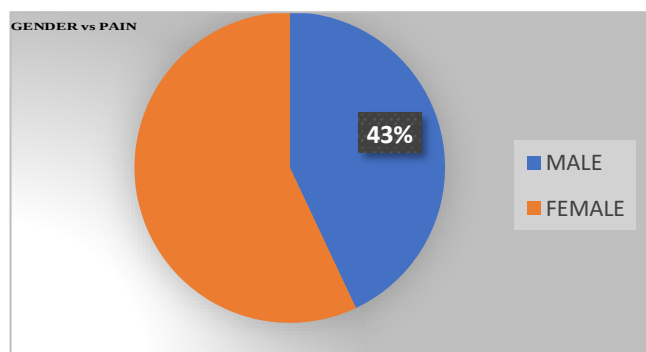
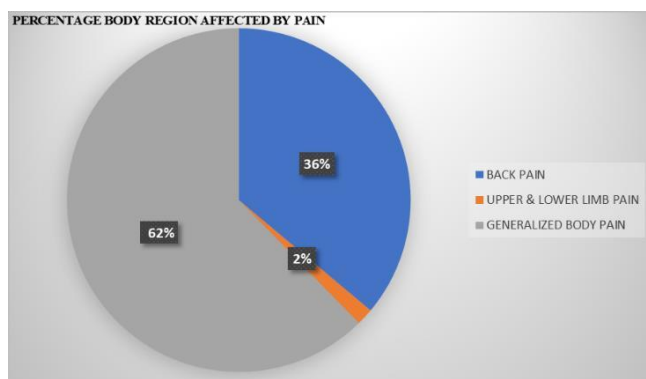
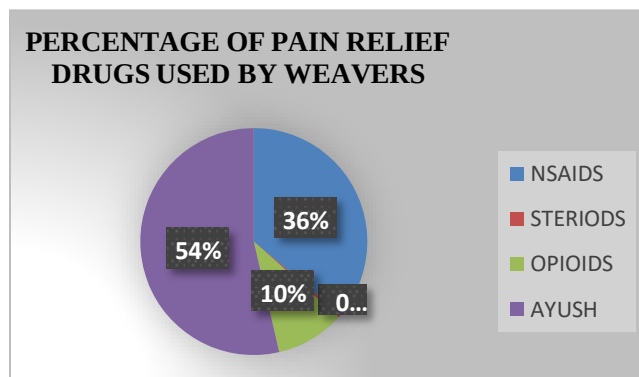


Figure 2: Gender vs Pain.

Present study shows that maximum weavers were affected by generalised body pain (62%) during the last 12 months followed by Upper & Lower limb pain (36%) and back pain (2%) as shown in Figure 3.

Figure 3: Percentage body region affected by pain.

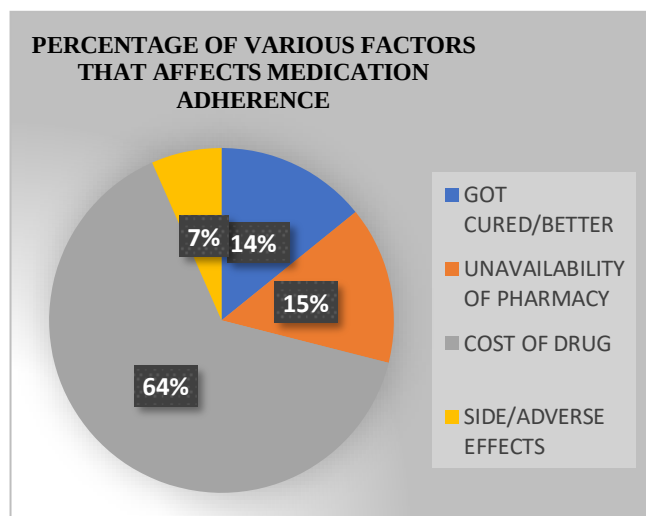
We observed the data about the usage of pain relief drugs by the weavers with or without doctor's prescription. We found that (54%) of the weavers undergoes Ayush medication followed by (36%) NSAIDs and (10%) Opioids as represented in Figure 4. We analysed the cost as well as commonly used allopathic drugs for pain management by weavers. We found that Diclofenac, Paracetamol, Tramadol and Dexamethasone are the commonly used analgesics. And also, we found that most of the weavers used the brand name Jonac (Diclofenac) and Doliprane (Paracetamol) for their minimal cost and it's shown in Table 2.

Figure 4: Percentage of pain relief drugs used by weavers.**Table 2: Analysis of the cost of drug and most commonly used analgesic drugs.**

Drug	Dose and formulation	No.of. Brands	Avg. Price (rs.)	Max price (brand)	Min price (brand)
Diclofenac	50 mg / Tab 25 mg/ml /Inj	16 22	1.426 5.66	2.46 (Diclodiva) 24.85 (Dicloran)	0.61 (Jonac) 1.15 (OxalginD)
Paracetamol	500 mg/Tab 2 ml/Inj	19 12	1.073 10.00	1.6 (Pacipik) 4.85 (PCM)	0.488 (Doliprane) 28.00 (Neomol)
Tramadol	50 mg/Tab	6	7.74	9.15 (Tramazac)	6.3 (Relidol)
Dexamethasone	0.5mg/Tab	6	0.224	0.27 (Dexona)	0.21(Demisone)

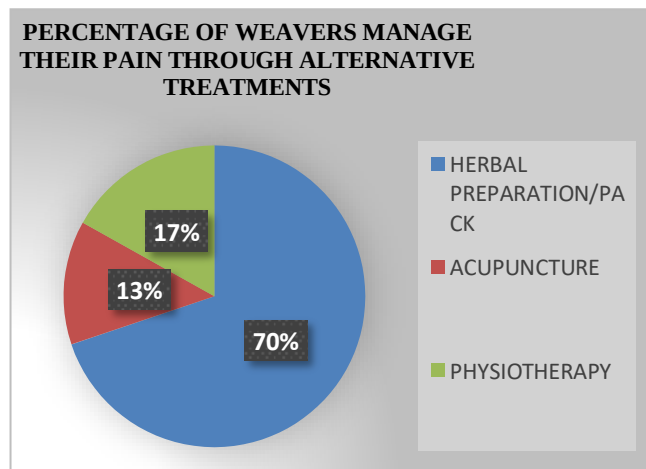
The possible reasons for not taking the pharmacological treatments are mostly cost of drug (68%), Unavailability of pharmacy (15%) and got cured / better (14%) as shown in Figure 5.

Figure 5: Percentage of various factors that affects medication adherence.



The percentage of weavers preferring non-pharmacological treatments for the management of pain are 70% of weavers uses Herbal preparation /pack, 17% of weavers uses physiotherapy and 13% of weavers uses acupuncture as shown in Figure 6.

Figure 6: Percentage of weavers manage their pain through alternative treatments.



DISCUSSION

From this study we find that the weavers suffer from musculoskeletal disorders arising from of a number of reasons the most relevant being the adoption of a constrained sitting posture for prolong time periods. Among those experiencing musculoskeletal disorders, the most common complaint was LBA.

From the results obtained we can understand that around 72.1% were Illiterate and also 93.4% stood at low income status.^[12] Higher education is associated with better critical

thinking skills, better ability to navigate healthcare systems effectively, more effective interactions with health care providers, all leading to greater belief in one's own health.^[13] And this is the main reason that they lack in awareness about the pharmacological treatments and non-pharmacological treatments. Comparing with various studies, proved that education and socioeconomic status plays a key role in the pain management.

while scrutiny over there work place the average hours of working per day is about 9 to 14 hours with 65.5% due to tireless working conditions, they bump into pain ranging from mild pain, moderate pain and severe pain. A variety of physical exposures, such as constrained postures, high muscular load and forceful exertions, highly repetitive work tasks, lack of time for recovery and poor workstation layout, have been identified as possible physical risk factors.^[14] The findings of this study confirm the work-related stress on weavers.

we could also witness that as the age increase the severity of the pain also increase and severe pain is most commonly seen at the age from 20-25 age and also above 50 years. The prior research among weavers shows significant correlation between pain intensity and years of experience, with people employed for longer periods reporting more pain.^[15] Sensitivity to heat pain being decreased whereas sensitivity to pressure pain may be even enhanced in the elderly.^[16,17]

In the present study females are commonly affected by pain around 57%. In a study spanning 17 countries across 6 continents with a total sample size of 85,052 adults, the prevalence of any chronic pain condition was higher among females (45%) than males (31%), and females had a higher prevalence of depression comorbid with chronic pain than males.^[15]

This study reports that there is a disruption of normal activities due to musculoskeletal symptoms, and this percentage was 62% for generalized body pain, 36% for back pain, and 2 for upper and lower back ache. The pain commonly experienced in the back, knees, and feet is likely explained by the repetitive nature of the work and from maintaining static positions for long time periods. Similar observations were found among the weavers of West Bengal, India by Sahu et al.^[7] Therefore, to prevent upper back and lower back symptoms, it is strongly recommended that weavers should have several regular short breaks during their working hours.^[18,19]

Around 54% of weavers doesn't take any type of allopathic medications and the common reason for not having pharmacological treatment was due to the cost of the allopathic drugs. Few also suggested that Unavailability of pharmacy for procuring drugs. We could also see that most commonly used allopathic drugs by the weavers were NSAIDs among them Diclofenac and Paracetamol were used because of its cost and easily availability. While comparing with other prescriptions we could find a common relation that Acetaminophen (paracetamol) and NSAIDs are

the first-line drugs for low back ache.^[20] Socioeconomically disadvantaged individuals often have physically demanding jobs with limited autonomy, low job satisfaction, and poor or no health insurance. All may directly or indirectly increase chronic pain rates.

70% of weavers were affianced in Herbal preparations/pack in the present study. Some similar studies also shows that alternative medicine is the most frequently used to treat musculoskeletal pain, and between 59 and 90% of patients utilizing alternative therapies for chronic pain claimed they were helpful and can serve as an effective adjunctive for the treatment of chronic pain.^[21,22]

The awareness program was created among weavers and we circulated the pamphlets about the health education, cost effective drugs available near their surroundings, physiotherapy exercises and also imparted them to use the primary health care centre. And the awareness program gave an idea about accessibility for various treatment modalities among the weavers for pain.

CONCLUSION

In this study we were able to assess the degree of pain by using the Brief pain inventory scale in which we derive that most of the weavers were affected by moderate to severe pain during the process of weaving. In our study we came to know that weavers prefer various treatment modalities including AYUSH for the treatment of pain. And we also came to know that preponderance of weavers was not aware about the pain management and so we were able to improve their knowledge about cost effective treatment modalities available for them to manage their pain, as pain was one of the most common terrifying factors in their day to day life. Cost effective and Alternative treatment modalities are the need of the hour among weavers for effective pain management.

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CONFLICTS OF INTEREST: Nil

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