

# Postural Discomfort among Sanitation Workers

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**Abstract:** *Musculoskeletal disorders are injuries that affect muscles, tendons, ligaments and nerves. These injuries can develop when the same muscles are used over and over again or for a long time without taking time to rest. The chance of getting this type of injury increases if the force exerted is high and/or the job requires an awkward posture. Most work related musculoskeletal disorders are cumulative disorders, resulting from repeated exposure to high or low intensity loads over a long period of time. However, musculoskeletal disorder can also be acute traumas such as fractures that occur during an accident. These disorders mainly affect the back neck, shoulders and upper limbs, but can also affect the lower limbs. Some Musculoskeletal disorders such as carpal tunnel syndrome in the wrist are specific because of their well defined signs and symptoms. Other is non-specific because only pain or discomfort exists without evidence of a clear specific disorder. Postural stress causes discomfort in the neck, back and arms resulting in the fatigue and fidgeting. The study examined postural discomfort among sanitation workers from Lucknow district. The method adopted for data collection is interview schedule involving 180 male and female respondents from academic institutions (30 male and 30 females), hospitals (30 male and 30 females) and public places (30 male and 30 female). The results show that sanitation workers had high postural discomfort in various body parts. There was significant difference ( $p < 0.05$ ) between postural discomfort and various body parts across various institutions.*

**Keywords:** Postural discomfort, cleaning, various institutions

## 1. Introduction

Consequences of poor posture have a negative effect on mood, concentration and productivity. In long run, poor postures can cause chronic back pain, neck pain and a host of syndromes that affect the upper extremity as a whole. Sanitation workers face postural discomfort in their work. Many sanitation workers have arthritis, weakness the joints in the back and make it more sensitive to the stresses due to prolonged standing. The present paper tries to determine various factors causing the postural discomfort among sanitation workers. Most work related postural discomfort are cumulative disorders, rescaling from repeated exposure to high or low intensity loads over a long period of time. However, these discomforts mainly affect the back, neck, shoulders and upper arms, limbs, but can also affect the lower limbs. Some postural discomfort such as carpal tunnel syndrome in the wrist is specific because of their well defined signs and symptoms. Others are non-specific because only pain or discomfort exists without evidence of a clear specific disorder. Postural discomfort may arise from:

1. **Physical** factors (example- heavy, static or monotonous work, extreme or constrained postures, repetitive movements, unsuitable workplaces and equipment, forces, exposure to vibration).
2. **Psychosocial** factors such as example-work organization, interpersonal relationships, short cycle tasks, poor work control, piece-rate payment system, poor management, unsatisfactory training, lack of breaks.
3. **Personal** factors such as example-gender, age, seniority, exercise habits, lifestyle, psychological characteristics and capacities.

## 2. Objective

To analyze the musculoskeletal pain using Nordic questionnaire (body discomfort scale) by kournika.

## 3. Methodology

Ex-post facto research design was used for this study. Cluster sampling technique was followed in the present research. The present study was conducted in different areas of Lucknow city with the aid of Nordic questionnaire (postural discomfort scale, **Kuorinka 1987**). Data was collected from 180 sanitation workers who were randomly selected from 60 respondents in academic institutions, 60 in hospital and 60 in public places. The sanitation workers were selected randomly due to the busy schedule of respondents.

## 4. Evaluation of Body Discomfort (BD)

The body discomfort was evaluated by NORDIC musculoskeletal questionnaire developed by **Kournika (1987)** interview method was used to collect information from respondents.

## 5. Results and Discussion

According to the questionnaires, the order of the postural discomfort caused by cleaning work was the same in all three institutions. Most often, the problems appeared in the neck, upper arms, mid back, upper back, buttocks. Frequent or some pain during the study was compained in the neck, upper arms, mid back, upper back, buttocks of the respondents. The number of complaints was lowest in

the legs, thighs and lower back. Particularly, pain in the neck, shoulder, arms, buttocks and upper back region clearly increased with age. The cleaners themselves estimated that the repetitive work movements and continuous moving caused the greatest postural discomfort in their work.

**Table 1:** Assessment of postural discomfort (associated with sweeping work) according to their institutions across various body parts

<i>Sweeping</i>								
<i>Body parts</i>	<i>Academic institution</i>		<i>Hospital</i>		<i>Public place</i>		<i>F test</i>	<i>'P' value</i>
	<i>Mean</i>	<i>S.D</i>	<i>Mean</i>	<i>S.D</i>	<i>Mean</i>	<i>S.D</i>		
<i>Neck</i>	0.75	0.43	0.75	0.43	0.75	0.43	0.00	1.00
<i>Shoulder</i>	0.88	0.32	0.73	0.44	0.67	0.47	4.18**	0.01
<i>Upper back</i>	0.28	0.45	0.58	0.49	0.63	0.48	9.35**	0.00
<i>Upper arms</i>	0.85	0.36	0.75	0.43	0.75	0.43	1.17	0.31
<i>Mid back</i>	0.47	0.50	0.72	0.45	0.60	0.49	4.00**	0.02
<i>Lower arms</i>	0.87	0.34	0.73	0.44	0.81	0.39	1.72	0.18
<i>Lower back</i>	0.53	0.50	0.62	0.49	0.67	0.47	1.13	0.32
<i>Buttocks</i>	0.27	0.44	0.63	0.48	0.60	0.49	10.89**	0.00
<i>Thighs</i>	0.72	0.45	0.62	0.49	0.68	0.46	0.70	0.49
<i>Legs</i>	0.82	0.39	0.70	0.46	0.72	0.45	1.25	0.28

It is observed from the table that body discomforts among sanitation workers of significant difference were found various institutions.

Table depicts that the respondents from public places have higher mean ( $\mu=0.63$ ) as they feel more pain in upper back, mid back pain, shoulder pain and buttocks pain in respect to other institutions.

**Table 2:** Assessment of postural discomfort (associated with mopping) according to their institutions across various body part

<i>mopping</i>								
<i>Body parts</i>	<i>Academic institution</i>		<i>Hospital</i>		<i>Public place</i>		<i>F test</i>	<i>'P' value</i>
	<i>Mean</i>	<i>S.D</i>	<i>Mean</i>	<i>S.D</i>	<i>Mean</i>	<i>S.D</i>		
<i>Neck</i>	0.75	0.43	0.67	0.47	0.62	0.49	1.24	0.29
<i>Shoulder</i>	0.82	0.39	0.62	0.49	0.65	0.48	3.31*	0.03
<i>Upper back</i>	0.57	0.50	0.68	0.46	0.57	0.50	1.13	0.32
<i>Upper arms</i>	0.85	0.36	0.72	0.45	0.73	0.44	1.77	0.17
<i>Mid back</i>	0.50	0.50	0.57	0.50	0.63	0.48	1.08	0.34
<i>Lower arms</i>	0.87	0.34	0.75	0.43	0.78	0.41	1.35	0.26
<i>Lower back</i>	0.55	0.50	0.63	0.48	0.63	0.48	0.57	0.56
<i>Buttocks</i>	0.58	0.49	0.62	0.49	0.67	0.47	0.44	0.64
<i>Thighs</i>	0.76	0.46	0.58	0.49	0.63	0.48	0.88	0.41
<i>Legs</i>	0.75	0.43	0.68	0.46	0.73	0.44	0.35	0.70

It is also observed from the table that body discomfort among sanitation workers of significant difference were found various institutions and the table depicts that the respondents from academic institutions have higher mean ( $\mu=0.87$ ) as they feel more pain in shoulder in respect to other institutions.

**Table 3:** Assessment of postural discomfort (associated with lifting dustbins) according to their institutions across various body parts

Lifting dustbins								
Body parts	Academic institution		Hospital		Public place		F test	'P' value
	Mean	S.D	Mean	S.D	Mean	S.D		
Neck	0.78	0.41	0.73	0.44	0.65	0.48	1.35	0.26
Shoulder	0.83	0.37	0.63	0.48	0.65	0.48	3.64**	0.02
Upper back	0.38	0.49	0.68	0.46	0.67	0.47	7.45**	0.00
Upper arms	0.83	0.40	0.67	0.47	0.62	0.49	2.57	0.07
Mid back	0.67	0.47	0.57	0.50	0.57	0.50	0.82	0.43
Lower arms	0.80	0.40	0.70	0.46	0.73	0.44	0.81	0.44
Lower back	0.55	0.50	0.68	0.46	0.67	0.47	1.36	0.25
Buttocks	0.45	0.50	0.63	0.48	0.67	0.47	3.43*	0.03
Thighs	0.63	0.48	0.62	0.49	0.57	0.50	0.29	0.74
Legs	0.75	0.43	0.70	0.46	0.70	0.46	0.24	0.78

It is also observed from the table that body discomfort among sanitation workers of significant difference were found various institutions and the table depicts that the respondents from academic institutions have higher mean ( $\mu=0.83$ ) as they feel more pain in shoulder, upper back and buttocks in respect to other institutions.

**Table 4:** Assessment of postural discomfort (associated with removing cobwebs) according to their institutions across various body parts

Removing cobwebs								
Body parts	Academic institution		Hospital		Public places		F test	'P' value
	Mean	S.D	Mean	S.D	Mean	S.D		
Neck	0.97	0.18	0.72	0.45	0.77	0.42	7.49**	0.00
Shoulder	0.87	0.34	0.75	0.43	0.72	0.45	2.17	0.11
Upper back	0.75	0.43	0.65	0.48	0.70	0.46	0.70	0.49
Upper arms	0.78	0.41	0.73	0.44	0.70	0.46	0.54	0.58
Mid back	0.58	0.49	0.67	0.47	0.63	0.48	0.44	0.64
Lower arms	0.82	0.39	0.70	0.46	0.68	0.46	1.62	0.20
Lower back	0.57	0.50	0.62	0.49	0.63	0.48	0.29	0.74
Buttocks	0.38	0.49	0.58	0.49	0.57	0.50	3.00*	0.05
Thighs	0.62	0.49	0.62	0.49	0.60	0.49	0.02	0.97
Legs	0.78	0.41	0.68	0.46	0.65	0.48	1.38	0.25

It is also observed from the table that body discomfort among sanitation workers of significant difference were found various institutions and the table depicts that the respondents from academic institutions have higher mean ( $\mu=0.97$ ) as they feel more pain in neck and buttocks in respect to other institutions.

## 6. Conclusion

From the findings of above study it can be concluded that sanitation workers suffered highly postural discomfort as felt by the workers in various body parts was measured using Body Discomfort Scale through body mapping technique. Body discomfort in sanitation workers was found to be highly significant at .000 levels in academic institutions. Highly significant differences were found in different body parts of sanitation workers according to their different types of cleaning work because of their working pattern, heavy workload, and long working hours. Postural discomfort, musculoskeletal disorders are still common in cleaning work and clearly increase with age. Sanitation workers are able to plan their own work to some extent. This enables them to influence their physical workload and postural stress, musculoskeletal pain.

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