Quality of life and musculoskeletal symptoms in hospital housekeeping workers*

QUALIDADE DE VIDA E SINTOMAS OSTEOMUSCULARES EM TRABALHADORES DE HIGIENE E LIMPEZA HOSPITALAR

CALIDAD DE VIDA Y SÍNTOMAS OSTEOMUSCULARES EN TRABAJADORES DE LA HIGIENE Y LIMPIEZA HOSPITALARIA

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ABSTRACT

This retrospective descriptive study, using structured validated questionnaires, analyzed 86 hospital housekeeping workers who were exposed to a huge diversity of occupational risks at a public municipal teaching and emergency hospital. The purpose of this study was to identify the quality of life aspects and musculoskeletal symptoms in hospital housekeeping workers. The results found by administering the Nordic Questionnaire confirmed that workers had problems in some part of their bodies. This finding accused musculoskeletal symptoms, mainly involving the following body parts: shoulders, upper back, neck and lower back. The difference between the groups of workers with or without musculoskeletal symptoms pointed out on the Nordic Questionnaire and obtained by applying the generic Quality of Life evaluation questionnaire (SF-36) was significant for the *Functional Capacity, Pain, General Health Condition, Vitality and Mental Health* domains.

KEY WORDS

Occupational health.
Housekeeping, hospital.
Quality of life.
Cumulative trauma disorders.

RESUMO

Pesquisa retrospectiva de caráter descritivo, utilizando questionários estruturados e validados, que estudou 86 trabalhadores do serviço de higiene e limpeza, expostos à imensa diversidade de riscos ocupacionais em um hospital público municipal de urgência, emergência e ensino. O objetivo do estudo foi identificar aspectos da qualidade de vida e de sintomas osteomusculares em trabalhadores de higiene e limpeza hospitalar. Os resultados encontrados na aplicação do Questionário Nórdico confirmaram a existência de problemas em alguma parte do corpo do trabalhador. Esse achado acusou sintomas osteomusculares, principalmente nos seguintes segmentos corporais: ombros, parte superior das costas, pescoço e parte inferior das costas. A diferença entre os grupos de trabalhadores com ou sem presença de sintomas osteomusculares apontados no Questionário Nórdico e obtidos por aplicação do questionário genérico de avaliação da Qualidade de Vida (SF-36) revelou-se significante nos domínios *Capacidade Funcional*, *Dor, Estado Geral de Saúde, Vitalidade e Saúde Mental*.

DESCRITORES

Saúde do trabalhador.
Serviço hospitalar de limpeza.
Qualidade de vida.
Transtornos traumáticos cumulativos.

RESUMEN

Investigación de carácter descriptivo, retrospectiva, utilizando cuestionarios estructurados y validados, que estudió 86 trabajadores del servicio de higiene y limpieza, expuestos a una inmensa diversidad de riesgos ocupacionales en un hospital público municipal de urgencia, emergencia y enseñanza. El objetivo del estudio fue identificar aspectos de la calidad de vida y de síntomas osteomusculares en trabajadores de higiene y limpieza hospitalaria. Los resultados encontrados durante la aplicación del Cuestionario Nórdico confirmaron la existencia de problemas en alguna parte del cuerpo del trabajador. Lo encontrado acusó síntomas osteomusculares principalmente en los segmentos corporales: hombros, parte superior de la espalda, cuello y parte inferior de la espalda. La diferencia entre los grupos de trabajadores con o sin presencia de síntomas osteomusculares apuntados en el Cuestionario Nórdico y obtenidos con la aplicación del cuestionario genérico de evaluación de la Calidad de Vida (SF-36) se reveló significativo en los dominios *Capacidad Funcional, Dolor, Estado General de Salud, Vitalidad e Salud Mental*.

DESCRIPTORES

Salud laboral.
Servicio de limpieza en hospital.
Calidad de vida.
Transtornos de traumas acumulados.

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INTRODUCTION

Data collected from labor accident occurrences in a general hospital were analyzed by some researchers[1]; results revealed that there were 181 notifications in one year (1978) and they concluded that

> the work locus and the nature of operations executed contributed to the occurrence of the majority of accidents; therefore, they should deserve a priority treatment regarding preventive actions.

The researchers also concluded that among the hospital departments that presented more significant risks, nutrition and laundry services were the top ranked, and the functions that were most likely to expose workers to accidents were also those that displayed the lowest wages (nursing assistants and cleaning attendants).

In the same decade[2-3], other pioneers casually identified aspects of hospital labor risks and their impacts on the physical integrity of workers.

Following the above-mentioned historic studies, a few researchers[4-6] deepened investigations into occupational groups working in hospital environments and highlighted risk- predisposing aspects and factors, improving knowledge towards the genesis of injuries.

Research underlines that it was only after the advent of AIDS (Acquired Immunodeficiency Syndrome) in 1986[6] that Brazilian medical institutions started designing studies aimed at identifying the hospital as a promoter of users' and workers' diseases.

In the city of Campinas (SP), 1,218 nursing workers were investigated, taking into account departments, functions, and shifts where major accidents occurred in the highest frequencies brought about by multiple risk factors arising from labor conditions, intensity and the repercussions on the workers' physical and psychic well-being[6].

Another investigation indicated that the cleaning and sanitary department of a private hospital was the fifth highest on the list of accident distribution per sector, corresponding to 10.9% of accidents in the five-year-long research period; the study also highlighted an impressive improvement after the implementation of a quality management program mostly aimed at tackling aspects related to discharge of materials, organization, cleaning, and maintenance[7].

After investigating 69 workers in the cleaning and sanitary department of a university hospital, other researchers found that 46.4% of workers had their labor capacity index put at risk. Researchers matched the predominance of physical demand in cleaning and sanitary activities to the precocious aging process of the working class[8].

Although the literature contains studies that relate existing risk factors in the work place[6-7], work accidents[6-7], and work capacity[8], we did not find any investigative research pertaining to Quality of Life (QL) and, more specifically, Healthcare Related Quality of Life (HRQL) in the work environments of hospital cleaning and sanitary departments.

The World Health Organization (WHO) understands QL as

> the perception of individuals of their life status based on the culture and value system contexts they are inserted into, and related to their objectives, expectations, standards, and concerns[9].

The concept of HRQL originated later with the advancement of research, and it was defined as

> the value attributed to life that takes into account functional deterioration, social perception and condition induced by disease, aggravation, treatments, and the political and economic organization of social assistance[10].

The present study was aimed at assessing how QL and HRQL programs for cleaning and sanitary workers were affected by wearing-promoting musculoskeletal disorders that put hospital workers' health potential at risk. There is international consensus that musculoskeletal disorders are caused by occupational ergonomic risk factors, such as repetition of movements, use of excessive strength, improper techniques and postures, and a combination of these in the labor environment[11].

Justifies the need for more studies regarding hospital cleaning and sanitary workers, a forgotten class that directly or indirectly interacts with customers/patients.

The exposition above justifies the need for more studies regarding hospital cleaning and sanitary workers, a forgotten class that directly or indirectly interacts with customers/patients assistance processes and with healthcare and safety conditions of workers, patients, and the general hospital environment.

OBJECTIVES

Identify the quality of life and musculoskeletal symptoms of workers in hospital cleaning and sanitary departments.

Assess the quality of life related to healthcare and the musculoskeletal symptoms of workers in hospital cleaning and sanitary departments.

METHOD

The present study is a descriptive, retrospective, transversally-cut research that also opened the way to qualitative data. The instruments applied in the research (structured questionnaires) were validated and culturally adapted to the Portuguese language[12-13]; for the purposes of this study, the credibility of the instrument's national version was assessed.

Healthcare service was investigated in an emergency municipal public hospital, an emergency hospital, and a school hospital; the focus of the analysis was the cleaning and sanitary service in the hospital environment. The population was comprised of the hospital cleaning and sanitary workers (field study= 96 workers). Of these 96 workers, 10 were not working at the time, either having been awarded leave or undergoing treatment for a health problem.

The study employed the following instruments: characterization of workers, SF-36 – Medical Outcomes Study 36 - item short-form health survey[12], and the Nordic Questionnaire of Musculoskeletal Disorders[13].

Data collection used the above-mentioned research instruments and was applied by means of individual interviews with each worker between November 2004 and January 2005; the statistical analysis counted on the support of the Minitab version 14 and Statistica version 6 softwares.

The research was approved by the Ethics Committee in Research of the Medical Sciences School, State University of Campinas, under the terms of the National Healthcare Council Resolutions 196/96 and 251/97 (File #159/2004).

RESULTS

From he Workers Characterization form, which was theoretically supported by an adaptation to other investigative processes[6-8], socio-demographic and occupational features of all 86 interviewees were systematized (Tables 1-2).

Table 1 - Distribution of cleaning and sanitary workers according to socio-demographic features - Campinas 2005

Variables	Categories	N	(%)
Gender	Female	56	65.1
	Male	30	34.9
Age Group	20 to 29	13	511
	30 to 39	29	33.7
	40 to 49	25	29.2
	> 50	19	22.0
Marital status	Single	14	16.3
	Married	37	43.0
	Cohabiting without marriage	18	20.9
	Divorced / widowed	17	19.8
Family composition	Up to two persons	30	34.8
	3 persons	16	18.6
	4 persons	20	23.3
	5 or more people	20	23.3
Birthplace	Campinas	28	32.6
	Other city	58	67.4
Home	Campinas	83	96.5
	Campinas Metro Area	03	03.5

(N=86)

The vast majority of the studied workforce was comprised of female workers averaging 41 years of age, married, living with four or more people, born in other cities, and living in Campinas.

Table 2 - Distribution of cleaning and sanitary workers according to occupational features - Campinas 2005

Variable	Categories	N	(%)
Work shift	Rotational shift	47	54.6
	1st (morning)	14	16.3
	2nd (afternoon)	13	15.1
	3rd (evening)	12	14.0
Work displacement time	Less than 30 min	21	24.4
	Over 30 min	65	75.6
Means of transportation	On foot	02	02.3
	Car	03	03.5
	Bus	81	94.2
Daily working hours in the institution	6 hours	34	39.5
	8 hours	27	31.4
	12 hours	25	29.1
Other job	no	83	96.5
	yes	03	03.5
Labor accident or labor-related health problem	Affirmative	63	73.3
	Negative	23	26.7

(N=86)

All 86 interviewees worked under a shifting system (shift work), and the majority of them were in a permanent rotational shifting plan. The majority of workers took over 30 minutes to get to work by bus, worked up to 6 hours daily, did not have another job, and did not present any occupational accident or occupational health problem in the period of the study.

Table 3 displays the HRQL averages achieved by the SF-36 application in all 86 interviewees.

Table 3 - Descriptive analysis of SF-36 domains for cleaning and sanitary workers - Campinas 2005

Domains	Average*	S.D.	C.I.
Functional capacity	86.7	17.1	83.1 – 90.4
Physical aspects	79.1	35.1	71.5 – 86.6
Pain	66.9	24.9	61.5 – 72.3
General health status	51.1	16.9	47.5 – 54.7
Vitality	65.1	19.5	60.9 – 69.3
Social aspects	74.4	26.4	68.8 – 80.1
Emotional aspects	77.5	37.0	69.6 – 85.5
Mental health	72.2	20.5	67.8 – 76.6

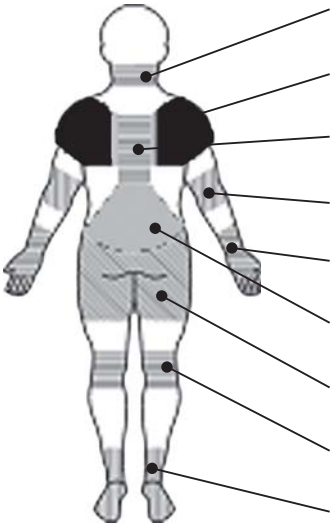
* Score from 0 to 100. (N=86)

In a general perspective, average scores reached 70 or above for the majority of domains. Taking into account that scores of each domain can vary from zero to 100, results showed high average values in the majority of analyzed domains. *Functional Capacity* displayed the highest score, while the *General Health Status*, *Vitality*, and *Pain* domains showed the lowest scores.

Results related to Musculoskeletal Disorders achieved after the application of the Nordic Questionnaire in all 86 interviewees are displayed in Table 4.

Table 4 - Distribution of musculoskeletal symptoms per body regions in cleaning and sanitary workers - Campinas 2005

	In the last 12 months, have you had any problems (such as pain, tingling/dormancy) (%)	In the last seven days, have you had any problem (%)
Neck	37.2	15.1
Shoulders	50.0	25.6
Upper back	43.0	17.4
Elbows	22.1	12.8
Fist/hand	34.9	15.1
Lower back	37.2	16.3
Hip/thighs	13.9	07.0
Knees	33.7	11.6
Ankles/feet	27.9	10.5



(N=86)

The Nordic Questionnaire indicated that half of cleaning and sanitary workers reported that the shoulders were the most highly impacted body segment of the musculoskeletal symptoms; for many of them, the problem even interrupted the performance of tasks, leading them to seek professional healthcare assistance.

In order to elaborate on the differences among educated workers, the study employed the averages for SF-36 domains according to the presence or absence of musculoskeletal symptoms found in the Nordic Questionnaire (Table 5).

Table 5 - Distribution of SF-36 domain averages according to the presence or absence of musculoskeletal problems in the previous year, as indicated by the Nordic Questionnaire - Campinas 2005

Domains	Presence of musculoskeletal problems in the last 12 months (87%)	Absence of musculoskeletal problems in the last 12 months (13%)	p*
Functional capacity	85.3	96.8	0.004**
Physical aspects	76.7	95.4	0.159
Pain	62.5	96.0	0.000**
General healthcare status	49.3	63.2	0.008**
Vitality	62.9	80.0	0.004**
Social aspects	73.2	82.9	0.121
Emotional aspects	76.9	81.8	0.454
Mental health	70.9	81.4	0.041**

* Mann-Whitney test's p value / ** Meaningful to 5% significant.

DISCUSSION

The analysis of socio-demographic data on the research subjects (86 workers) observed an average age of 41 years (DP 10.0), with 25 being the minimum and 64 the maximum age.

As per the gender, data collection indicated that 65% of cleaning and sanitary workers studied were females. Other studies[9,14] indicated 90% and 100% of working women, respectively. It should be highlighted that women also perform domestic work, thus adding a double work journey, labor overload, and physical and mental wearing. This double workload can influence their quality of life levels, both by the implication of the social role they take on in family environments - a trace that is very prevalent in the Brazilian culture - and by their role as spouses, mothers,

and housewives[6,8,15]. The study also observed that 3.5% of individuals had a second job, which could configure a third workload for working women.

The comprehensive presence of women in cleaning and sanitary services is grounded in cultural aspects existing in the social environment they live in, which is highly segmented by gender; women are inserted into more precarious jobs, with lower value-added profiles, lower salaries, and with virtually no progression and professional qualification possibility[16].

As per family composition, 65% of researched educated individuals lived with three or more persons. Regarding the marital status, 64% were married or cohabiting without marriage, similar to what has been verified by other authors[8-14], who found the majority of workers to be living in a stable marital union.

The vast majority of the workforce analyzed by the study came from other cities and even from other states (67%); however, these people were living in Campinas (96%) at that present time. The migratory inflows to the region are justified by the attractive job and employment market.

Morning, afternoon and evening rotational shift systems (fixed work in a specific timetable) present a proportional division of cleaning workers (15% per shift). Over half of all assessed people (54.6%) work in the morning and afternoon shifts, when massive amounts of users throng the hospital for healthcare demands.

The interviewees mostly (94%) used the bus as their means of transport, frequently in times when urban traffic grows heavy. Most of the time, the worker stands up (vertical position), counting on the vehicle's support bars, a position that raises their shoulders way above their heads, and causes them to support the whole body weight; such a position leads to a strain of body segments, mostly the thorax upper portion. Displacement time spent (home/work/home) reaches over one hour for 76% of workers, and the observed labor daily averages between 6, 8 and 12 hours, proportionally.

Workers were asked whether or not they had experienced any labor accident or health problem resulting from work conditions, and the positive responses (27%) were followed by the following remarks, *…I've been working for six years without any medical sick note,* or *…I've been working here for eight, nine, ten, twelve, and fourteen years, with no needle accident*. Behind these comments we recognized a certain sense of pride for the length of time without work leaves, or without any accident occurrence, especially those produced by piercing-cutting instruments. In the reported accidents there were incidences of cuts, repetitive strain injury, perforation, falls, and twisting injuries. Dermatitis, muscle pain, stress, hypertension, rhinitis, and tendinitis were also reported. Similar data were achieved by other studies[6-7,16].

As for the HRQL of the hospital's cleaning and sanitary workers, results of the present study showed high average values (over 70) for the majority of the analyzed SF-36 domains.

The *Functional Capacity* domain, which assesses the presence and the extent of restrictions related to the individuals' physical capacity, displayed the highest scores, ahead of all other groups, pointing out to being in good shape. This characteristic was also perceived by the analysis of the *Physical aspects* domain. Being relatively high, such domains evaluate the existing limitations concerning the kind of labor in the workers' daily life activities. SF-36 lowest scores were found in the *General Health Status*, *Vitality*, and *Pain* domains. Another study measured HRQL in hospital workers and similarly pointed to a higher endangerment score in the *Vitality* and *Pain* domains[17].

The application of a generic assessment instrument might explain why HRQL showed such high scores in this study; the instrument may not have distinguished the QL endangerment because of the specificities of the work, especially the ones related to hospital cleaning and sanitary workers.

Although fatigue and work capacity[8] were not objects of investigation, there is a growing body of workers with either labor restrictions or functional incompatibility who confirm conditions of functional aging, that is, precocious aging; this trend was pointed out by the domains that indicated HRQL endangerment processes.

Results of musculoskeletal symptoms obtained by the application of the Nordic Questionnaire for the prior 12 months are quite significant (87%). Half of the workers referred to musculoskeletal problems in the shoulder region, and 43% displayed pain in the upper portion of the back. The neck region and the lower portion of the back also showed relevant numbers (37%).

The occurrence of musculoskeletal symptoms in several body regions was observed regardless of the considered period (12 months or seven days), and the highest body region scores in the annual and weekly prevalence reports also confirmed problems such as pain, and shoulder and upper back tingling/dormancy.

A comparative analysis between the subjects of this study and those from a nursing team showed that the occurrence of musculoskeletal symptoms indicated a significant difference in workers in the following body regions: shoulders, upper back, and neck. The nursing team's results overcome the first in the loins and in the dorsal regions[17].

The difference between the groups of workers identified by the Nordic Questionnaire, in which musculoskeletal symptoms were present or absent, and the results achieved by the application of the generic QL assessment questionnaire (SF-36), revealed a significant difference among *Functional capacity*, *Pain*, *General health general status*, *Vitality*, and *Mental health* domains. Such results may suggest that those who presented musculoskeletal symptoms might have an endangered quality of life.

The implementation of new methodologically-aligned studies, broader sample sizes, and employment of specific instruments will certainly contribute to a growing knowledge of HRQL in hospital cleaning and sanitary workers.

CONCLUSIONS

The results obtained with the application of the Nordic Questionnaire indicated the occurrence of musculoskeletal symptoms in hospital cleaning and sanitary workers in the following body segments: shoulders (50%), upper back, neck, and lower back.

The difference between the groups of workers indicated in the Nordic Questionnaire and obtained by the application of the Quality of Life generic assessment questionnaire (SF-36), who had present or absent musculoskeletal symptoms, revealed strong significance in the *Functional Capacity*, *Pain*, *General health status*, *Vitality*, and *Mental health* domains.

The results presented here are relevant and ratify the need for other studies.

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