The Relationship Between Perceived Health and Psychosocial Risk in Women in The Service Sector (Cleaning)

Short title: Perceived Health-Psychosocial Risk in Cleaners

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Abstract

BACKGROUND: Cleaning is considered a female-dominant occupation. Women cleaning workers present a high risk of suffering impaired health probably as a result of performing low-skilled tasks. However, to date, no studies have been found that examine the health status of female cleaning workers in Spain.

OBJECTIVE: The objectives were to 1) determine the level of perceived health in a sample of female cleaning workers, 2) evaluate the main psychosocial risks they face, 3) explore the relationship between perceived health and psychosocial risk factors, and 4) compare the perceived health of those women who present some psychosocial risk factor and those who do not.

METHODS: This is a multi-centered cross-sectional study carried out in the service sector of a Spanish company. The final sample was composed of 455 female cleaning workers. Sociodemographic variables, perceived health status and psychosocial risk factors were assessed.

RESULTS: Women presented a high perception of health status. The main psychosocial risk was lack of acknowledgement by their superiors, which affected 25.2% (n=111) of the sample. Moderate negative correlations (r=-.222 to -.442; p < .01) were identified between perceived health and evident psychosocial risks. Those women who presented some psychosocial risk (n = 174; 38.3%) had a worse state of perceived health in all variables studied.

CONCLUSIONS: Presence of psychosocial risk had a relationship with a worse health perception. This article highlights the need to orient preventive actions in the psychosocial field. The COVID-19 pandemic represents a new situation to renew the health promotion between cleaning workers.

INTRODUCTION

Advances in security and health in the workplace have caused a paradigm shift that has improved quality of life and promoted health. Work activity not only should not harm the worker, it should allow him/her to achieve optimum levels of quality of work life (1-3). That is, beyond avoiding harm, new tendencies drive health promotion (4-8) that seek to render work activity beneficial to workers. This is an ambitious objective that has not been achieved by all productive sectors due to different reasons. Health promotion requires a long-term investment. For example, improving working conditions (such as reducing workload or working hours, introducing ergonomic improvements, personal protective equipment among other conditions), leading and workers´ skills implies investment that cannot be afforded by all sectors or organizations. In fact, to reduce the accident rate is one of the most relevant challenge across the world (9).

Despite the fact that health is a state of complete physical, mental and social well-being, the evaluation of health status with regard to the prevention of occupational risks tends to be limited to the physical sphere (10). Objective measurements are conducted based upon the task to be performed, with a final assessment of suitable, not suitable or suitable with limitations. This assessment disregards subjective perception or the worker's opinion (10, 11). Likewise, other types of risk, such as psychosocial risk, are frequently disregarded even though these also influence health. This is worrisome, because psychosocial risks have become one of the main causes of absenteeism in the workplace (12). Psychosocial risks are the interactions between the content of the position, the work organization and management, and other environmental and

organizational conditions, on the one hand, and the competencies and needs of employees on the other (13). For example, the presence of mobbing, the absence of support both from other employees and from superiors, and the low acknowledgement of tasks are some of the main psychosocial risks. Thus, psychosocial risks and worker´s perceptions must be considered to preserve health and safety at workplace.

A work activity that is especially relevant in the functioning of any organization is cleaning. In addition, this work is performed for reduced wages and receives minimal acknowledgement due to the low skill level its execution requires. This renders cleaning a difficult task that is on occasion conducted in situations associated with job insecurity and that can negatively affect workers' security and health.

The cleaning workforce is largely composed of women, immigrants, and ethnic minorities who receive low wages and have low education levels (14, 15). Work involving cleaning tasks is characterized as being a solitary job often performed at inopportune times (very early in the morning or at the end of the night, in moments of least production). This is reflected both in work demands and the accidents resulting from them (16-20). In turn, in addition to workload, greater family demands have been placed on women. This phenomenon, known as 'double presence' (21), increases the deterioration of women's health status. Moreover, there is the constant ageing of the population. Age, which is increasingly greater among female workers, is related to an increase in absenteeism related to work accidents and greater severity in those cases where risks are involved (22-26).

In short, women who work in the cleaning sector have a high probability of present a great loss of health. This has been found in USA (14, 27-31), Denmark (32-34) and Brazil (35, 36) across hotel, house and general cleaners. To date, there is only

one study made in Spain which compare Spanish and Brazilian professional, both women and men (35), in hospital cleaning services. However, no studies have been found that examine the health status and psychosocial risks of female cleaning workers in Spain. Thus, it is necessary to study Spanish women in disadvantaged sectors that generate work conditions that may diminish women's health status, such as the cleaning sector.

Therefore, the objectives of the present study are to (1) determine the level of perceived health in a sample of female cleaning workers in Spain, (2) evaluate the main psychosocial risks they face, (3) explore the relationship between perceived health and psychosocial risk factors, and (4) compare the perceived health of those women who present some risk and those who do not. We propose the above to subsequently recommend strategies for the improvement of quality of work life and health promotion.

SUBJECTS AND METHODS

Subjects

This study was approved by the Work Security and Health Committees and by the director of Lacera Group (Ref. 2015/01). All of the study participants signed an informed consent form.

The study's target population comprised 2637 workers, especially cleaning personnel from the service sector of Lacera Group, distributed nationwide (Spain). The workers included in the study had held the job for a minimum of 1 year. Partially retired individuals were excluded due to their reduced work time (less exposure to risk).

Of the 2637 individuals, 502 workers under contract (19.0%) completed the questionnaires. Of them, 217 were obtained during on-site training sessions. A 100% response rate was obtained given the presence of the authors who assisted the workers

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in filling out the questionnaires. The rest ($n = 285$) were collected through remote training sent via the postal service. A total of 350 remote training questionnaires were mailed. Of these, 28 (5.6%) were returned due to errors in the mailing addresses, 13 (2.6%) were incomplete or missing the worker's identification and 24 (4.8%) were not returned by the workers.

From the first sample of 502 workers, an initial analysis determined that the sociodemographic and work characteristics of men ($n = 47$) were quite different from those of women. Therefore, it was decided that the study should be limited to women. Thus, the final sample comprised 455 women dedicated to cleaning activities and with the job position of cleaning workers. The average age was 49.13 years old ($SD = 9.10$), the majority were Spanish (97.4%; $n = 443$) and single (62.0%; $n = 225$), and the majority were concentrated in Asturias (43.7%; $n = 199$) or Galicia (20.6%; $n = 94$). The majority were not limited in carrying out their work duties because of a medical occupational examination (94.6%; $n = 210$) or disabilities (90.8%; $n = 413$).

Design

This is a multi-centered cross-sectional study in which the characteristics of a sample of women have been described and the characteristics of those women who presented some psychosocial risk were compared with those who presented no risk. Therefore, a retrospective ex post facto quasi-experimental design (there has been no randomization) involving two groups has been used. One of these groups is quasi-control (those women who presented no psychosocial risks) (37).

Variables and Instruments

The sociodemographic variables used in the study were gender, age, province of residence, nationality, civil status and the existence of a recognized disability.

The questionnaire *SF-36 Health Survey* (SF-36) is a recognized health questionnaire that has been validated in Spanish (10, 11, 38). It is used in medical studies and offers a general perspective of individuals' health status, with the advantage that it is easy and quick to fill out and easy to evaluate. It is a self-reporting questionnaire that the worker can fill out on his/her own. In addition, by allowing for the numerical valuation of various aspects related to individuals' health, it serves as an excellent tool for any study regarding health. The questionnaire allows a subjective opinion of the worker's health to be acquired that can be contrasted with the objective results derived from health monitoring (38, 39). It contains 36 questions that address different aspects related to the daily life of the individual filling out the questionnaire. The questions are grouped into 8 sections that are assessed independently, leading to the 8 dimensions measured by the questionnaire: body pain, mental health, emotional role, social function, physical role, vitality, physical function and general perception of health status. All of these dimensions are measured on a scale of 0 to 100 where 100 is the optimum level of health. Related to psychometric properties, in a meta-analysis of 9 studies with Spanish population ($n = 15{,}701$ participants), the estimate of Cronbach's alpha coefficients ranged from .74 (social function) to .91 (physical role). Thus, Cronbach´s alpha exceeded the minimum recommended value (.70) for group comparisons (11). Moreover, construct validity, predictive validity and sensitivity to change in quality of life have been reported (11).

The *Mini Psychosocial Factor Method* (MPF) (40) performs a psychosocial analysis simplified by a 15-item questionnaire that has been developed in Spanish (41). The average time required to complete it is 9 minutes. Its simplicity and speed of execution make it recommendable for the work environment. The values of each

category are calculated by the means of the items that make up each category. The instrument gathers information relative to (1) pace of work, (2) mobbing, (3) human and work relations, (4) perception of health status, (5) acknowledgement of tasks, (6) autonomy, (7) compensation and (8) support at work, both from other employees and superiors. The items are rated using a Likert scale with scores ranging from 1 to 10 that define 3 levels of risk. Scores below 4 signify an evident risk, and scores below 7 and above 4 signify the suspicion of risk. Cronbach´s alpha is .75 and factorial validity and concurrent validity are good (40).

Procedure

Once the sample and the evaluation instruments were determined, a questionnaire was prepared with the tools described. In addition to the instruments, instructions for filling out the questionnaire were included as well as an explanation of the study's objectives, a confidentiality agreement regarding the data obtained and an informed consent form. The need to perform simple tests was established given the cultural level of the sample. The use of new technologies was ruled out due to a high level of digital illiteracy. To facilitate the reading and comprehension of the questionnaire, large print text was used. Both the questionnaires provided in person and those submitted from a distance were analyzed by the author and transferred to a data collection sheet.

MPF scales were used to identify workers with psychosocial risks. When a worker presented a scale with an evident risk, she was included in the at-risk group. If she presented no scale with a risk, she was included in the without-risk group.

Data analysis

To determine the sample's characteristics, a descriptive analysis was conducted (percentages, averages and typical deviations). The pairwise deletion method was used

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for lost cases. That is, workers who were missing some piece of data for evaluation were retained in the analysis. Thus, all available cases were analyzed for each variable. The accuracy of the total sample size was established using classical estimation assuming finite ($N = $ 2637) population sizes (42), where the case of maximum uncertainty was assumed ($\pi = 1 - \pi = 0.5$), 95% confidence level ($Z_{1-\alpha/2} = 1.96$) and margin of error 5%. The required minimum sample size was 336 ($n = 336$). However, in this study were collected 445 participants.

Pearson correlation analysis was used to determine the relationship among the different variables studied. For the valuation of the correlation, scores above 0.3 were considered moderate, and those above 0.5 were considered high (43).

Before comparison between groups (workers with and without evident psychosocial risks) data were screened for normality of distribution using Kolmogorov-Smirnov normality test. For the comparison of means, the Student´s t-test was used and the variance homogeneity was assessed. Depending on the result of Levene´s test, the corresponding correction was used. In all cases, $p < 0.05$ was considered statistically significant. Statistical power (alpha $= 0.05$) and effect sizes for the comparisons were provided. To calculate the effect size between the groups, the formula consistent in the ratio between the mean difference of each group and the typical deviation of the total sample was used (43). In the valuation of the effect size, the general recommendations of Cohen (1988) were considered, applying the following criteria: $d = 0.20$ (small effect), $d = 0.50$ (moderate effect) and $d = 0.80$ (large effect). It was also considered that values near 0.30 could be relevant for clinical practice (44). Statistical analysis were performed with the SPSS program (15.0 for Windows version) and G*Power 3 (45).

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RESULTS

Perception of health status descriptions

Regarding the perception on health status (Table 1), participants presented high health values, especially in the dimensions of emotional role ($M = 92.11$; $SD = 24.33$), physical function ($M = 89.81$; $SD = 16.13$) and social function ($M = 89.36$; $SD = 18.65$), with the lowest value categories being vitality ($M = 68.84$; $SD = 20.45$) and body pain ($M = 77.15$; $SD = 24.02$).

Insert Table 1 here

Descriptions of psychosocial factors

With regard to psychosocial factors (Table 1) the variables with the highest scores were perception of health status ($M = 6.23$; $SD = 2.08$) and autonomy ($M = 6.13$; $SD = 1.68$). From a qualitative perspective, evident risk ranged between 25.2% (acknowledgement of the task) and 2.3% (mobbing; Table 1). In turn, 62.6% ($n = 276$) of the workers did not present an evident risk, 19% ($n = 84$) presented only one risk, 10.7% presented two risks ($n = 47$) and the rest presented 3 or more risks (7.9%; $n = 34$).

MPF and SF-36 Correlations

Table 2 presents the coefficients of the correlation between the MPF and the SF-36 in which statistically significant correlations were observed. The higher positive values ($r > .50$) were between Health Status Perception (subscale of MPF) and Vitality, Physical Function, Mental Health, Body Pain, and Social Function (subscales of SF-36).

Insert Table 2 here

Comparisons between those workers who presented some risk and those who did not

For all the variables, with the exception of age, participants who presented some evident risk also perceived poorer health status, with effect size above 0.50 in 6/7 factors

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analyzed (Table 3).

Insert Table 3 here

DISCUSSION

This article relates psychosocial risks and perceived health in a sample of female cleaning workers in Spain. Thus, the main strength of this study is that it contributes evidence regarding a demanding job that is mainly performed by women and which has not been the subject of any studies to date in this location. In general, perceived health in the sample was good, with an absence of extreme values. Regarding the promotion of quality of work life, the main psychosocial challenge is to improve acknowledgement of the task performed by these women. One of every four of these women feels that her hierarchical superiors do not acknowledge the work she performs or her accomplishments. This is paradoxical given that cleaning duties are essential work that is not valued when done well and when done badly can keep organizations from functioning. This finding highlights the need to sensitize organization members, particularly hierarchical superiors, to acknowledge the task performed by these women. The less evident risks concern relationships with the rest of the employees. This can be because of the type of task performed, which is characterized by high levels of autonomy and the solitary execution of work. Each worker performs her cleaning functions in a limited area and without interacting with her fellow workers except in border zones.

With regard to the relationships identified between perceived health and psychosocial risk factors, it can be noted that, indeed, the factor perception of health status in both scales presents a positive correlation. However, pace of work (46-48) is directly related to psychological demands (demands, work volume, time pressure and

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interruptions in work), and autonomy refers to management of the worker's demands and her ability to make a decision regarding said management (40, 49, 50). In this manner, the data obtained support the theory that the adjustment between workers' individual characteristics (skills) and the demands of the work or task (pace of work and autonomy) are related to health status (51-54).

In fact, women who presented some psychosocial risk had a worse perception of their own health status in all of the factors assessed. This is a ground-breaking result, given that, to date, various studies have observed a direct relationship between high levels of psychosocial risk and harm to workers' health (15, 46, 53, 55-58) but without considering the worker's own perception of his/her health status. Typically, health promotion in organizations uses objective measurement techniques applied by the Health Monitoring System (3, 4, 10). However, in this study, greater correlations have been observed between subjective perception and health status than between pace of work and health status. Likewise, in this study, the population's age did not significantly impact health, unlike what other studies propose (35, 36, 59).

Despite the physical nature of cleaning activity and the ageing of worker population, perception of health status and psychosocial risks have been shown to present a greater relation to objective health than to the demands of the task. The subjective perspective in health analysis and the evaluation of psychosocial risks is not currently included in Spanish policies regarding work security and health. The inclusion of this novel perspective will allow recommendations of an organizational and/or psychosocial nature to be made, such as the need to increase supervision or strengthen the training of certain workers. This implies a paradigm shift in the Health Monitoring System, given that current recommendations and limitations focus exclusively on the

physical plane. For example, recommendations such as the need to supervise a person with greater frequency were not found in Spain. To carry out this paradigm shift, new instruments should be incorporated into the prevention of occupational risks, such as those employed in this study. Furthermore, this research supports previous investigations that highlight the influence of psychosocial risks on workers' health and its association with diseases such as burnout, mobbing, stress or depression. Mental health is becoming one of the main concerns and a challenge at the workplace (60).

To conclude, we must be cautious when generalizing the results of this study because a convenience sample of a single company group was used. A future line of research would be to validate this study's data with a broader sample and in different companies of the sector. In turn, it should be considered that this is a cross-sectional study and therefore, causality cannot be inferred among the different relationships observed. Thus, another future line of research would be to conduct longitudinal studies in which the influence of the factors analyzed can be assessed with work absenteeism or accident rates. Finally, and given that there are cognitive elements in the psychosocial factors such as coping strategies used by workers, a suggested line of research could be the assessment of different dimensions of personality. This could be implemented through the assessment of elements such as impulsiveness or sensation seeking to address a behavior safety approach.

Additionally, the last year events related to COVID-19 pandemic have brought a new scenery to cleaning workers. Health status and psychosocial risks could get worse for the professionals of this sector. Indeed, there has already been an increase of cases of chemical intoxication and psychosocial pressure since the beginning of COVID-19

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pandemic (61, 62). This represents a new challenge to renew the health promotion between cleaning workers.

Despite these limitations, these results highlight the value of workers' subjective perception as a tool for evaluating risks, highlighting the need to orient preventive actions in the psychosocial field. In particular, the lack of acknowledgement of the task by hierarchical superiors is the main problem that needs to be addressed.

ETHICAL APPROVAL (name of institute and number)

This study was approved by the Work Security and Health Committees and by the director of Lacera Group (Ref. 2015/01)

INFORMED CONSENT

All of the study participants signed an informed consent form.

CONFLICT OF INTEREST

The authors do not have any financial interests that may be interpreted as influencing the research.

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Table 1. Descriptive data regarding health status and qualitative assessment of psychosocial factors.

	Total (N = 455)							
	M	*(SD)*						
Age	49.13	9.10						
SF-36 Health Survey								
Emotional role	92.11	24.33						
Physical function	89.81	16.13						
Social function	89.36	18.65						
Physical role	86.08	29.73						
Mental health	80.16	18.01						
Body pain	77.15	24.02						
Vitality	68.84	20.45						
	Total (N = 455)		*Absence risk*		*Suspicion of risk*		*Evident risk*	
Mini Psychosocial Factor Method	*M*	*(SD)*	*n*	*%*	*n*	*%*	*n*	*%*
Acknowledgement of the task	5.10	2.47	62	14.1%	268	60.8%	111	25.2%
Compensation	6.00	1.91	104	23.6%	288	65.3%	49	11.1%
Health status perception	6.23	2.08	113	25.6%	283	64.2%	45	10.2%
Pace of work	5.82	1.81	83	18.8%	318	72.1%	40	9.1%
Relationships	5.96	1.49	74	16.8%	341	77.3%	26	5.9%
Autonomy	6.13	1.68	95	21.5%	330	74.8%	16	3.6%
Support	5.84	0.99	28	6.3%	398	90.2%	15	3.4%
Mobbing	5.32	1.00	23	5.2%	408	92.5%	10	2.3%

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Table 2. Coefficients of the correlation between age, health status and psychosocial risks.

		Age	Body pain	Mental health	Emotional Role	Social function	Physical role	Vitality	Physical function
Age	*r*	--	-.151**	-.085	-.008	-.128**	-.139**	-.094*	-.258**
	N	--	445	447	449	450	449	448	450
Pace of work	*r*	-.099*	.336**	.324**	.161**	.309**	.251**	.402**	.291**
	N	441	431	433	435	436	435	434	436
Mobbing	*r*	.041	-.040	.015	.069	-.004	.007	-.019	.010
	N	441	431	433	435	436	435	434	436
Relationships	*r*	-.083	.058	.156**	.034	.063	.061	.202**	.038
	N	441	431	433	435	436	435	434	436
Health status perception	*r*	-.217**	.545**	.552**	.361**	.509**	.485**	.656**	.592**
	N	441	431	433	435	436	435	434	436
Acknowledgement of the task	*r*	-.007	.164**	.199**	.042	.129**	.101*	.183**	.069
	N	441	431	433	435	436	435	434	436
Autonomy	*r*	-.060	.246**	.291**	.135**	.261**	.216**	.344**	.184**
	N	441	431	433	435	436	435	434	436
Compensation	*r*	-.036	.248**	.325**	.103*	.223**	.175**	.331**	.146**
	N	441	431	433	435	436	435	434	436
Support	*r*	-.091	.162**	.199**	.049	.149**	.130**	.246**	.098*
	N	441	431	433	435	436	435	434	436
Total factors evident risk	*r*	.036	-.363**	-.404**	-.222**	-.403**	-.294**	-.442**	-.315**
	N	441	431	433	435	436	435	434	436

r = Pearson correlation coefficient.

** The correlation is significant at the 0.01 level (bilateral).

* The correlation is significant at the 0.05 level (bilateral).

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Table 3. Age and health status perception (comparison of those workers who did and did not have some psychosocial risk).

	Total (N = 455)		Some risk (n = 174)		No risk (n = 276)		t (d.f.)	p	(1 - β err. prob)	d
	M	(SD)	M	(SD)	M	(SD)				
Age	49.13	9.10	49.12	9.59	48.79	8.96	0.4 (480)	.705	0.10	0.04
Body pain	77.15	24.02	65.98	29.05	84.63	18.97	7.6 (260.99)	< .001	1.00	0.78
Mental health	80.16	18.01	71.86	22.20	84.56	12.97	6.9 (244.78)	< .001	1.00	0.71
Emotional role	92.11	24.33	85.52	32.85	96.22	15.68	4.1 (221.03)	< .001	0.99	0.44
Social function	89.36	18.65	81.43	24.90	94.33	11.39	6.5 (220.19)	< .001	1.00	0.69
Physical role	86.08	29.73	72.87	41.05	94.06	20.99	6.4 (229.84)	< .001	1.00	0.71
Vitality	68.84	20.45	59.14	24.06	75.30	15.48	8.0 (259.35)	< .001	1.00	0.79
Physical function	89.81	16.13	83.12	22.95	94.14	10.02	6.1 (217.78)	< .001	1.00	0.68

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