Identification of confounders in the association between self-reported diseases and symptoms and self-rated health in a group of factory workers

Identificação de variáveis de confusão na associação entre doenças e/ou sintomas referidos e auto-avaliação de saúde entre trabalhadores de uma indústria

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Abstract

Self-related health is an important predictor of morbidity and mortality, and much of its effect is influenced by the presence of chronic diseases and/or symptoms. The current study aimed to identify confounders in the association between reported chronic diseases and/or symptoms and self-rated health among workers at a metallurgical factory in Santa Catarina State, Brazil. The study design was cross-sectional, with a probabilistic sample of 482 workers. The information was obtained through a self-administered questionnaire and anthropometric measurements. Hierarchical multiple logistic regression models were adjusted. The response rate was 98.6% (n = 475), with 84.8% men, mostly employed on the factory floor (79.4%). Back pain was the most common complaint. The association between chronic diseases and self-rated health showed an odds ratio (OR) of 7.3 (95%CI: 3.7;14.5). After statistical modeling, psychosocial (-25.59%), socioeconomic (-9.29%), and occupational variables (10.54%) were identified as confounders between the outcome and chronic diseases and/or symptoms. The way diseases and/or symptoms act on self-rated health among workers transcends physical aspects.

Health Evaluation; Chronic Disease; Metalmechanic Industry; Occupational Health

Introduction

In the last three decades, self-rated health has been used increasingly as a measure in the psychosocial and gerontological areas, as well as in epidemiological surveys. Studies have systematically supported its reliability and predictive power and demonstrated its association with various measures of morbidity and mortality, even after controlling for other variables, including objective indicators of physical health, age, gender, life satisfaction, income, and others [1].

Few studies in Brazil have focused on self-rated health, particularly among young individuals [2]. In one recent study, the authors observed that among workers in a factory in the State of Santa Catarina, reference to chronic diseases and/or symptoms was the variable most strongly strongest associated with self-rated health [3].

In fact, the results of studies aimed at grasping the meaning of self-rated health for respondents have emphasized the role of diseases and their functional consequences as central aspects in the construction of self-rated health [4,5].

Furthermore, individuals with negative self-rated health are more prone to focus on specific health problems, which is consistent with the biomedical dimension of health, while those with better health use more transcendental concepts, encompassing the adoption of healthy behaviors and psychosocial aspects [4].

Studies on the association between self-rated health and chronic diseases are common, and the results vary according to the design and the target population and diseases [6].

The way illness affects health is influenced by the socio-cultural context. Illness (or the subjective experience of disease) encompasses a complex group of meanings, including trauma, stress, apprehension, and expectations concerning the disease, social relations with friends, material deprivation, and therapeutic experiences [7].

The principal objective of this study was to identify – among the variables analyzed – those with the potential to confound the association between self-reported chronic diseases and symptoms and self-rated health among workers in a factory in Santa Catarina State, Brazil.

Methods

This was an exploratory cross-sectional study conducted in a large metallurgical factory located in a major industrial complex in the State of Santa Catarina. The workers who participated in the study involved mainly industrial production line work (80%), distributed in four shifts (business hours, morning, afternoon, night), as well as those employed in administrative areas (the majority of whom worked the business-hour shift).

Calculation of the sample size was based on an expected 14.8% prevalence of negative self-rated health [8]. The confidence level was set at 95%, with an acceptable margin of error of 3.5%, totaling 371 subjects. This was expanded by 30%, presupposing a 10% non-response rate, plus 20% to allow greater statistical power in the analyses, totaling 482 subjects.

To compose the casual simple sample, the employees were picked from a list provided by the factory, using random numbers and Microsoft Excel (Microsoft Corp., USA). Workers from other units in the same company situated in neighboring cities, the city itself, and other countries were excluded from the study.

The selected workers were contacted using the list of departments and telephone extensions provided by the factory, as well as verification of their attendance at periodical appointments during the data collection (May-July 2005) or through other workers from the same department who were able to advise them of the study.

The data collection included verification of anthropometric parameters (weight, height, and waist circumference) and a questionnaire that the employees were asked to fill out and return within five days.

For the anthropometric data collection, subjects were standing, barefoot, with light clothing. Weight was measured using a digital scale, model PL-180 (Filizola, São Paulo, Brazil), calibrated regularly, with a capacity of 150kg. Height was measured using the anthropometer connected to the scale. Body mass index (BMI) was calculated and compared to the reference values proposed by the World Health Organization (WHO) [9]. Waist circumference was measured with a tape measure, immediately above the umbilicus and without pressing the soft tissues [10].

The physical data were collected by the principal researcher (D.A.H.), a nutritionist. During some stages, the availability of employees to come to the company clinic for the physical data collection, which was subject to the work demand in their respective units, led to a large flow of workers, making it impossible to check observer reproducibility over the course of the fieldwork.

The questionnaire was prepared by the researchers, based on a literature review of the target theme. It included questions to test the instrument's internal consistency, particularly in relation to the outcome variable and other psychosocial aspects, with a correlation coefficient of 0.5 for these questions. The instrument was pre-tested with 20 employees who came to the company clinic, which allowed a review of its format and content and filling it out by the participants.

Self-rated health (the outcome variable) was collected in five levels (very good, good, fair, bad, and very bad), subsequently dichotomized for analysis, combining the first two categories (positive self-rated health) and the last three (negative self-rated health). Chronic diseases and/or symptoms were listed in the questionnaire: diabetes, hypertension, cardiovascular diseases, back pain, joint pain, and "others". The variable was later dichotomized, so that individuals who reported no disease formed the reference group and those who reported the presence of disease formed the exposed group.

Age (complete years, divided into three ten-year intervals: 20-30 years, 31-40 years, and more than 41 years) and gender were used as control variables.

The independent variables were grouped in blocks, as follows: (a) socioeconomic; (b) occupational; (c) lifestyle; (d) psychosocial; and (e) health situation.
a) Socioeconomic: schooling – last complete grade (primary, secondary, or university); income – per capita monthly income in Brazilian *reais* (divided into tertiles: low, R$60.00-R$ 360.00; medium, R$366.63-R$600.00; and high > R$600.00).

b) Occupational: type of activity – current (factory floor versus administrative); time-on-the-job at the company in months (newcomer, 0-23; intermediate, 24-119; veteran, > 120); physical strain – worker's self-reported performance of physically strenuous work (not strenuous, somewhat strenuous, very strenuous); psychological strain – worker's self-reported performance of psychologically strenuous work (not strenuous, somewhat strenuous, very strenuous); work monotony – worker's self-reported performance of monotonous work activities (no, yes); worker's self-reported job satisfaction (yes, no).

c) Lifestyle: smoking – non-smokers and former smokers versus smokers; alcohol consumption – number of doses consumed per week (no: none; moderate: 1 to 7; and excessive: ≥ 8); physical activity – constructed score, adding codes attributed to the number of days of physical exercise per week (0, 1-2, 3-4, 5-7) and duration in minutes (0, ≤ 20, 21-40, > 40), classified as active with a score of 0-3 e inactive with a score greater than 3 (i.e., the question was posed such that higher scores indicated less physical activity); eating habits – constructed eating quality indicator, based on the sum of the values attributed to weekly frequency of consumption (daily, 4-6, 1-3, < 1, never) of five "healthy" food groups (fruits; leafy vegetables and vegetables; lean meat; low-fat dairy products; whole foods like oatmeal, bread, crackers etc.) and five "unhealthy" foods (cold cuts; butter and whole dairy products; fat meat; fried foods; candy/sweets). Subtracting the score for "unhealthy" from "healthy" foods, scores of 0-15 were considered adequate and less than 0 as inadequate eating habits.

d) Psychosocial: motivation at work – worker's opinion (fully satisfied or satisfied, dissatisfied or very dissatisfied); satisfaction with life – worker's opinion (fully satisfied or satisfied, dissatisfied or very dissatisfied); psychological stress – indicator constructed on the basis of the sum of scores attributed to the frequency of headache, insomnia and/or feeling of anxiety or depression (never, rarely, frequently, very frequently, scores of 0-2 and ≥ 3); close friend – friend or relative with whom the worker can "get something off his chest" when needed (yes, no); financial support – friend or relative worker can count on in case of financial difficulty (yes, no).

e) Health situation: overweight (no: BMI < 25kg/m²; yes: BMI $\geq$ 25kg/m²); abdominal obesity – yes (men $\geq$ 94cm, women $\geq$ 80cm) and no [10]; limiting illness – self-reported illness that limits activities at home or work (no, yes); short sick leave – need for work leave for health reasons for less than 15 days (no, yes); long sick leave – need for work leave for health reasons for 15 days or more (no, yes).

Losses were defined as workers' refusal to participate in the study or exhaustion of possibilities to locate them in the company during the data collection period. Whenever the employees were not located, co-workers were asked when they might return, and the contact was repeated. The company records were also re-consulted and other shifts and departments were searched.

When questionnaires were returned incomplete, contact with respondents was reestablished (except for economic data and/or when the worker had expressed refusal to participate) in order to complete the incomplete data, particularly for the outcome variable.

The databank was then created in Epidata (Epidata Association, Odense, Denmark), where data entry controls were created. The questionnaires were reviewed manually and keyed-in as the data were collected, and approximately 10% (50) were keyed in twice. Divergent records were identified by Epi Info version 6.04 (Centers for Disease Control and Prevention, Atlanta, USA). Errors reached a maximum of 0.2% in the entry fields. Data on each question were reviewed to identify outliers. All the errors identified were corrected.

A bivariate analysis was done to estimate the magnitude of association between report of chronic diseases and/or symptoms and the other variables, testing hypotheses that were appropriate for the type and scale (Pearson chi-squared, Fisher's exact test). The odds ratios (OR) were also calculated, with 95% confidence intervals (95%CI) [11].

Verification of the set of variables that best fit the logistic model followed the theoretical model for hierarchical entry of variables in each block [12]. Introduction of the blocks in the model began with that theoretically considered most distal to the relationship between chronic diseases and self-rated health. For this work, the socioeconomic block, which influences and is influenced by occupational factors, was the first to be entered. The adoption of habits related to lifestyle is associated with the previous blocks and interferes in psychosocial aspects and the health situation, with the latter measured through reported and/or objective measurements, which do not completely explain the differences in self-rated health but are heavily associated with it (Figure 1).

The permanence of variables in each model was based on their capacity to modify the association (OR) between diseases and symptoms and self-rated health.

Analysis of each variable's influence on the association between chronic diseases and self-

Figure 1

Hierarchical model for entry of variables associated with self-rated health among a group of factory workers.
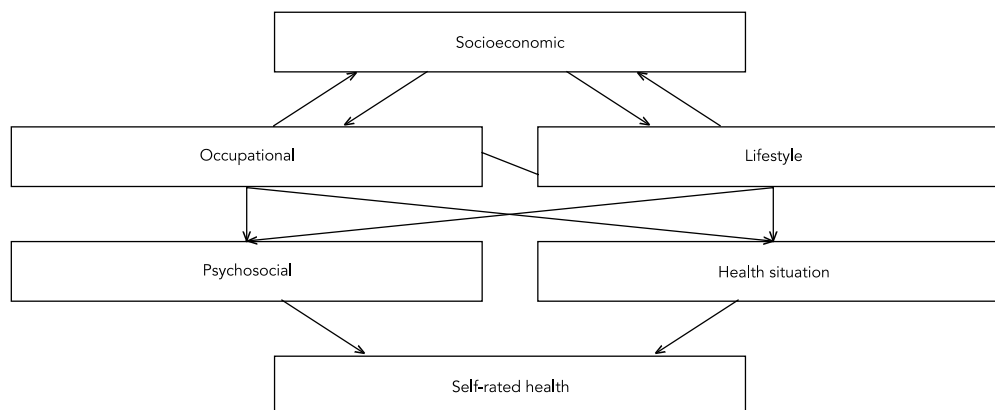
rated health was verified through the modification of the magnitude of the association (OR) between chronic diseases and self-rated health, by adjusting multiple logistic models [13] controlled for gender and age. Modifications greater than 5% in the OR were considered important.

To verify the model's fit, the Hosmer & Lemeshow goodness-of-fit test was used [13]. The Hosmer & Lemeshow statistic is compared to a chi-squared distribution with two degrees of freedom, where high values for the test and low p values indicate low fit for the model.

The analyses used Epi Info version 6.04 and Stata SE 9 (Stata Corp. College Station, USA).

Before the data collection, the research project was submitted to and approved by the Institutional Review Board of the Federal University in Santa Catarina. Each participant signed a *Free and Informed Consent Form*. In addition, the company demanded a secrecy contract signed by the researcher (D.A.H.).

Results

The response rate was 98.6% (n = 475), with losses distributed homogeneously as to predominant type of activity by workers (1 administrative and 6 factory floor; p = 0.896).

The majority were males (84.8%), with a mean age of 34.5 years (SD = 7.8), distributed in the 20-58-year age range, 79.4% working predominantly on the factory floor, 53.3% having worked for more than ten years at the company, and 73.5%

with more than eight years of schooling. Smoking and excessive alcohol consumption were reported by a minority (12.7% and 6.1%, respectively). Overweight and obesity were observed in 53% of the workers, but mostly without abdominal obesity (65.1%). Negative self-rated health was seen in 16.6% (95%CI: 13.5; 20.4) of the individuals.

Workers were distributed nearly equally in terms of presence or absence of chronic diseases and/or symptoms (51.2% yes). Back pain was the most common complaint (30.9%), followed by "others" (19.6%), joint pain (16.6%), high blood pressure (6.1%), cardiac diseases (2.5%), and diabetes mellitus (1.3%).

Report of chronic diseases was heavily associated with dissatisfaction at work, lack of physical activity, dissatisfaction with life, psychological stress, lack of motivation at work, lack of a close friend, and all the variables related to health situation (p ≤ 0.01). The impossibility of obtaining financial help, lifting heavy weight at work, work on the factory floor, and higher schooling were also significantly associated with reported chronic diseases (data not shown).

Table 1 shows each variable's individual influence on modification of OR between chronic diseases and/or symptoms and self-rated health. When modified at the 10% level, considered significant, both income and schooling from the socioeconomic block influenced the association. Among the occupational variables, psychological strain stood out. No variable related to lifestyle showed important modification. In the psychosocial block, the following variables displayed

Table 1

Odds ratio (OR) for the association between self-reported diseases and/or symptoms and self-rated health after entering each of the variables individually, among workers at a factory in Santa Catarina State, Brazil, 2005. Adjusted for sex and age (n = 475).

Variables	OR	95%CI	Percent modification of OR
Chronic diseases	7.32	3.71; 14.46	-
Socioeconomic	-	-	-
Income	6.14	3.07; 12.28	-16.12
Schooling	8.02	4.01; 16.05	9.56
Occupational	-	-	-
Type of activity	7.49	3.77; 14.88	2.32
Time-on-the-job	7.33	3.71;14.51	0.14
Physical strain	6.76	3.41; 13.42	-7.65
Psychological strain	8.04	4.00; 16.15	9.84
Job satisfaction	7.03	3.53; 13.99	-3.96
Work monotony	7.76	3.83; 15.73	6.01
Lifestyle	-	-	-
Physical activity	6.78	3.42; 13.43	-7.38
Smoking	7.66	3.85; 15.22	4.64
Alcohol consumption	7.27	3.68; 14.37	-0.68
Eating habits	7.01	3.41; 14.43	-4.23
Psychosocial	-	-	-
Satisfaction with life	6.53	3.29; 12.97	-10.79
Control over life	7.12	3.55; 14.27	-2.73
Psychological stress	6.04	3.01; 12.11	-17.49
Work motivation	6.57	3.31; 13.09	-10.25
Financial support	7.21	3.63; 14.32	-1.50
Close friend	7.25	3.66; 14.33	-0.96
Health situation	-	-	-
Overweight	7.78	3.91; 15.48	6.28
Abdominal obesity	7.41	3.74; 14.68	1.23
Limiting disease	6.19	3.10; 12.37	-15.44
Short sick leave	6.73	3.35; 13.49	-8.06
Long sick leave	6.86	3.46; 13.62	-6.28

influence: satisfaction with life, psychological stress, and motivation. In the health situation block, only the report of disease that limited activities at home or work modified the association between the variables (-15.44%). Short and long work leaves, overweight, physical inactivity, and physical stress could be considered potential confounders, considering a 5% modification.

After multivariate analysis, the psychosocial block showed the highest potential modification of the magnitude of association between diseases and/or symptoms and self-rated health (-25.59%), followed by occupational and socioeconomic variables (10.54% and -9.29%, respectively). Variables related to health situation and lifestyle had practically no effect as confounders,

after adjusting for the other target variables. Even after entering all the blocks of variables, the association between chronic diseases and self-rated health remained highly significant (Table 2).

Discussion

Before analyzing the results of the current study, it is important to emphasize key points that bear on the meaning and scope of some findings. The first point relates to the external validity of the data, where the limitation is intrinsic to the study population consisting of active workers. Individuals selected for the work market are generally younger, healthy, with less probability of sick

Table 2

Odds ratio (OR) from logistic models for evaluating the effect of socioeconomic, occupational, lifestyle, psychosocial, and health situation variables on the association between self-reported diseases and symptoms and self-rated health among workers at a factory in Santa Catarina State, Brazil, 2005. Adjusted for blocks of variables, controlled for sex and age (n = 475).

Models	OR	95%CI	Percent modification of OR *	p	p (model adjustment) **
1	7.32	3.71; 14.46	-	0.000	-
2	6.64	3.29; 13.41	-9.29	0.000	0.27
3	7.34	3.47; 15.50	10.54	0.000	0.05
4	7.66	3.54; 16.56	4.36	0.000	0.29
5	5.70	2.59; 12.58	-25.59	0.000	0.63
6	5.64	2.44; 13.00	-1.05	0.000	0.42

Models: (1) self-rated health and self-reported diseases and/or symptoms, adjusted for sex and age; (2) self-rated health and self-reported diseases and/or symptoms, adjusted for sex, age, and socioeconomic variables (income and schooling); (3) self-rated health and self-reported diseases and/or symptoms, adjusted for sex, age, and socioeconomic (income and schooling) and occupational variables (psychological strain, job satisfaction, and work monotony); (4) self-rated health and self-reported diseases and/or symptoms, adjusted for sex, age, and socioeconomic (income and schooling), occupational (psychological strain, job satisfaction, and work monotony), and lifestyle variables (smoking, alcohol consumption, physical activity, and eating habits); (5) self-rated health and self-reported diseases and/or symptoms, adjusted for sex, age, socioeconomic (income and schooling), occupational (psychological strain, job satisfaction, and work monotony), lifestyle (smoking, alcohol consumption, physical activity, and eating habits), and psychosocial variables (psychological stress and motivation); (6) self-rated health and self-reported diseases and/or symptoms, adjusted for sex, age, and socioeconomic (income and schooling) occupational (psychological strain, job satisfaction, and work monotony), lifestyle (smoking, alcohol consumption, physical activity, and eating habits), psychosocial (psychological stress and motivation at work), and health situation variables (limiting disease and short sick leave).

* Calculated in relation to OR from previous block;

** Hosmer & Lemeshov goodness-of-fit test [13].

leave, layoffs, or early retirements, and thus more likely to participate in cross-sectional studies. This characteristic becomes clear when comparing the lower prevalence rates for negative self-rated health, low schooling, low income, and risk behaviors like smoking and alcohol consumption in the study population as compared to the overall Brazilian population [14]. The employees' privileged situation was further confirmed by comparing our data with those for industrial workers in general in the State of Santa Catarina [8].

Meanwhile, the internal validity is reinforced by the random selection of employees, without replacement, distributed in all the shifts, by the insistence in locating them, and by the homogenous distribution of the few losses, thus allowing extrapolation of the data to the other workers in the factory.

Analysis of data from the *National Sample Household Survey* (PNAD) from 2003 [14] showed that some one-third of the Brazilian population reported chronic diseases. Diabetes, high blood pressure, back pain, cancer, and rheumatism were the most common complaints, similar to those observed in our study. Among the workers evaluated, the prevalence of complaints was higher (51.2%) and was associated with self-rated health, whereby subjects who reported some disease and/or symptom showed seven times the odds of rating their health negatively.

The important role of the most common diseases and symptoms in the population in the association with self-rated health was also demonstrated by Molarius & Janson [6], who concluded that although some chronic diseases show a strong association with negative self-rated health (e.g., rheumatoid arthritis, neurological diseases, and cancer) at the individual level, their reduced prevalence in the overall population, particularly among young individuals, means that common symptoms and diseases (e.g., musculoskeletal pain, weakness, fatigue, and depression) show higher relevance in the association between self-rated health and mortality, calculated through population-attributable risk.

Back pain (the most common complaint among workers in this study) is one of the most common health problems not only among workers [15] but also in middle-aged and elderly individuals [6], combining with other musculoskeletal problems as the most important causes of absenteeism and disability among Brazilian workers [16].

Although back pain is not exclusive to manual workers, its effects (incidence, severity, and

incapacity) are associated with more physically demanding activities [15].

Our study clearly showed the effect of socioeconomic variables as potential confounders. Alone, the income variable attenuated the magnitude of the association between diseases and/or symptoms and self-rated health by more than 15%, but adjustment for schooling reduced its potential effect, given that schooling enhanced the association between the two main variables. Our data also indicate that workers with worse schooling and greater physical strain (more commonly observed in manual workers in our sample) are more susceptible to the effects of disease on self-rated health.

There is evidence that pain can be experienced more intensely by manual workers, given its effect in limiting their work capacity [17]. Blank & Diderichsen [17] emphasized the differences between workers through the term "double suffering", indicating both the increased presence and greater intensity of illnesses experienced by manual workers.

Additionally, among individuals with chronic diseases, worse income predicts unfavorable modifications in physical function [18].

The perception of pain or illness varies according to social group. Perception of pain as a serious illness increases in the upper as compared to lower classes. However, observation shows that it is not the perception of pain that varies, but the continuity of activities and search for relief [7].

In addition, the cultural context modulates what is perceived as natural. Sen [19], expounding on the limits of self-reported measures of illness, highlights that people living in places with better access to education and medical care are in better condition to diagnose and interpret signs and symptoms. In places where the diseases are very common, people tend to take certain signs and symptoms for granted. This may at least partially explain the behavior of the schooling variable (opposite to that of income) in strengthening the association between chronic diseases and self-rated health in the sample population, whereby individuals with less schooling may consider back pain as a "natural" consequence of their work activities.

The importance of psychosocial variables in this study becomes even clearer when evaluating the profile of the most prevalent symptoms and diseases among the subjects (back pain, joint pain, and "others"), in which the literature clearly demonstrates the determinant effect of psychosocial factors [15].

The way chronic disease acts on self-rated health transcends the eminently physical domain, as the current findings reinforce (introduction of health situation variables had only a slight modification on the OR for the association between the two variables). The effect of disease is associated with the complexity of the therapeutic process and the psychological and financial resources available to the individual to deal with the illness. Disease jeopardizes people's quality of life, altering the reproduction of social conditions for existence by limiting the performance of their everyday and occupational activities [7].

Ormel et al. [20] highlight that the severity of incapacity caused by disease, the loss of psychological and/or financial resources, and the patient's psychological characteristics have greater determinant power than the nature of the situation per se.

Still, the influence of variables related to the physical and health situation cannot be overlooked. Limitation of daily activities and short sick leaves are relevant to workers. Results by Whitehall, in one of the most famous international studies on public employees, point to the possibility of using sick leaves as a global measure of health (or lack thereof), thanks to their association with mortality. However, the authors did not observe a linear association between the variables: risk of death increased when their were more than five medical leaves in the last ten years, while lower rates showed a protective effect [21]. A sick leave cannot always be considered a sign of disease. The use of sick leave to deal with stress or strain, prevent diseases, and support family members has been reported [22].

Fundamental characteristics of disease and/or other aspects not evaluated in the current study, like intensity and severity, may be important factors in the explanation of the association between reported chronic diseases and/or symptoms and self-rated health. This observation was reinforced by the current study, since none of the blocks of variables introduced into the modeling was sufficient to eliminate the relationship between chronic diseases and self-rated health.

The tendency is that with the passing years and resulting increase in prevalence of chronic diseases, their weight in self-rated health will increase [23]. Still, Shittker [24] suggests the opposite. Among the individuals evaluated, with increasing age, mental health aspects such as depressive symptoms increased their association more with self-rated health (when compared to chronic physical conditions).

Information on chronic diseases and symptoms was self-reported in our study. The specificity of such data may not be high. In addition to the possibility of over- or underreporting, the diseases and symptoms in the "others" category

are unknown and are widely representative in the target population, both in terms of their association with self-rated health and measurement of the variable with chronic diseases. Still, exclusion of the "others" category from the analyses would mean assuming the absence of other diseases and/or symptoms besides those listed in the questionnaire and thus underestimation of the most truthful association among the variables. Studies that have analyzed the disease profile in Brazilian workers allow supposing that repetitive strain injuries, digestive, renal, and neurological problems, and cancer constitute the "others" group [16].

In our study, psychosocial variables and other aspects related to worker satisfaction were measured with a structured questionnaire, which may have limited the understanding of the findings. As a function of the study's objectives and characteristics, data collection on some variables like smoking, eating habits, and physical and psychological demands in the workplace was limited to few questions. Since this was an exploratory study, the priority was the breadth of information rather than depth of analysis. However, both the literature review and the factor analyses that oriented the construction of psychometric scores used in the study are positive points, in addition to the constant analysis of scales and cutoff points for the variables during construction of the model.

More studies are recommended, in greater depth, to measure aspects related to control and physical and psychological demands at the workplace, using the internationally validated model proposed by Karasek [25], in addition to qualitative approaches that allow a more in-depth understanding of the dimensions involved in self-rated health among workers and other population groups in Brazil.

The study's cross-sectional design did not allow inferring cause-and-effect relationships. It is not possible to determine whether the confounding factors in the association between reported symptoms and chronic diseases are causal agents or consequences. Longitudinal studies are thus needed to understand the causal direction in our findings, considering the important role of chronic diseases as predictors of decline in self-rated health and as an important cause of mortality, as negative self-rated health, leading to an increase in chronic diseases.

The individual experience of health/illness cannot be appropriately understood through population surveys and involves modifications in the person's daily routine. The history of an illness can be interpreted as that of a life altered by the disease, with all the specificity of the surrounding social and cultural context. Thus, qualitative studies are necessary to better understand the meaning and effect on the workers and seek the response for the questions raised. In addition, the qualitative research method would allow a better understanding of the work process and other psychosocial aspects.

Psychosocial, socioeconomic, and occupational variables acted as potential confounders in the association between diseases and/or symptoms and self-rated health in the study population, which reinforces the importance of considering that disease certainly transcends its causes and consequences, although it represents what is usually considered a physical side of health.

The attempt to reduce the impact of chronic diseases and/or symptoms on self-rated health among the workers evaluated here requires that the attendant measures be based on the concept of the worker as a complex subject.

Resumo

A auto-avaliação de saúde representa importante preditor de morbimortalidade, sendo grande parte de seus efeitos influenciados pela presença de doenças crônicas e/ou sintomas. Objetivou-se identificar os fatores que confundiram a associação entre doenças crônicas e/ou sintomas referidos e a auto-avaliação de saúde entre trabalhadores de uma indústria metal-mecânica de Santa Catarina, Brasil. Estudo transversal com amostra probabilística de 482 trabalhadores. As informações foram obtidas usando-se questionário auto-administrado e medidas antropométricas. Foram ajustados modelos hierarquizados de regressão logística múltipla. A taxa de resposta foi de 98,6% (n = 475), 84,8% homens, empregados no setor produtivo (79,4%). Dor nas costas foi a queixa mais comum. A associação entre doenças crônicas e auto-avaliação de saúde apresentou uma razão de chances de 7,3 (IC95%: 3,7; 14,5). Após modelagem estatística, variáveis psicossociais (-25,59%), sócio-econômicas (-9,29%) e ocupacionais (10,54%) foram identificadas como fatores de confusão entre o desfecho e doenças crônicas e/ou sintomas. A forma como as doenças e/ou sintomas atuam na auto-avaliação de saúde entre trabalhadores transcende aspectos físicos.

Avaliação em Saúde; Doença Crônica; Indústria Metalurgica; Saúde do Trabalhador

Contributors

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