Research checklist

STROBE Statement—Checklist of items that should be included in reports of cross-sectional studies

<table>
<thead>
<tr>
<th>Item No</th>
<th>Manuscript submitted</th>
<th>Recommendation</th>
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<tbody>
<tr>
<td></td>
<td>“cross-sectional survey” in abstract</td>
<td>(a) Indicate the study’s design with a commonly used term in the title or the abstract</td>
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<td></td>
<td>(b) Provide in the abstract an informative and balanced summary of what was done and what was found</td>
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A cross-sectional survey using a self-administered questionnaire was conducted among 3173 employees. Psychosocial factors included psychological demands, decisional latitude, and social support using Karasek’s model. The health indicator studied was self-reported health. Adjustments were made for covariates. Job strain and iso-strain were significantly associated with poor self-reported health. Among covariates, occupational profile and an unsatisfactory ergonomic score were also significantly associated with poor self-reported health.

Introduction

Background/rationale 2 Over the last 10 years the healthcare sector has undergone considerable restructuring and downsizing aimed at reducing healthcare costs and improving system efficiency. These changes have led to work overloads. The French military hospitals, spared these trends so far, are now subject to the same requirements as those in force in civilian hospital facilities. Explain the scientific background and rationale for the investigation being reported

Objectives 3 To investigate the associations between psychosocial risk factors and self-reported health, taking into account other occupational risk factors, in the three military hospitals in Paris. State specific objectives, including any prespecified hypotheses

Methods

Study design 4 The study was cross-sectional, and used an anonymous self-administered questionnaire. Present key elements of study design early in the paper

Setting 5 The target population of this study was made up of staff from the Paris military hospital group (PMHG), comprising Bégin hospital in Saint-Mandé, Percy hospital in Clamart (both Paris suburbs), and Val de Grâce hospital in Paris, amounting to 1807 military staff and 1366 civilian staff in January 1st 2009, 2108 being female staff. Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection
and 1065 male. Between February 3rd 2010 and 1st March 2010, 3173 questionnaires were distributed across the three hospitals. The closing date for return of the questionnaires was set for the 30th April 2010.

| Participants | 6 | Civilian and military staff belonging to PMHG. | (a) Give the eligibility criteria, and the sources and methods of selection of participants |
| Variables | 7 | All the variables were described in detail in the paragraph “Instrument and study variables” | Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable |
| Data sources/measurement | 8* | It was a self administered questionnaire | For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group |
| Bias | 9 | Adjustments were made for covariates: age, gender, civil or military status, work injury, ergonomic, physical and chemical exposures, and occupational profile. We made a comparison of respondents and non-respondents | Describe any efforts to address potential sources of bias |
| Study size | 10 | It was described in the paragraph “Instrument and study variables” | Explain how the study size was arrived at |
| Quantitative variables | 11 | It was described in the paragraph “Instrument and study variables” | Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why |
| Statistical methods | 12 | It was described in the paragraph “Statistical analysis” | (a) Describe all statistical methods, including those used to control for confounding (b) Describe any methods used to examine subgroups and interactions (c) Explain how missing data were addressed (d) If applicable, describe analytical methods taking account of sampling strategy (e) Describe any sensitivity analyses |
| Results | 13* | In all, 3173 questionnaires were distributed to all the military and civilian staff. 1728 questionnaires were returned, of which 26 could not be used on account of too many missing data. | (a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed |
Descriptive data  
Characteristics of participants were given in Table 2

Outcome data  
Report numbers of outcome events or summary measures

Main results  
Results for univariate and multivariate analysis were given in Table 3 with OR and IC95%. The multivariate analyses were performed using stepwise descending logistic regression, including the explicative variables associated with the variable to be explained in univariate analysis with a significance level below 20%.

Category boundaries were given for age.

Other analyses  
Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses

Discussion  
Psycho-social risk factors (job strain and iso-strain) were found to be associated with poor perceived health. These associations remained strong even after adjustment on socio-demographic variables and job characteristics (ergonomic score, occupational exposures, occupational profile). Among the job characteristics, two variables were associated with poor perceived health – a non-satisfactory ergonomic score and the occupational profile.

Potential limitations to this study include the cross-sectional nature which precludes identifying causal risk factors for perceived poor health. However, previous studies comparing cross-sectional and prospective analyses on the same data have provided elements supporting at least to some extent the validity of cross-sectional results.[39, 40] Another limitation is the moderate rate of

(b) Give reasons for non-participation at each stage
(c) Consider use of a flow diagram
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participation and different response rates between civilian and military staff and according to professional categories, which raises the issue of selection bias. This selection bias may have affected the absolute levels of the variables measured. This is illustrated if we consider the civilian personnel who more frequently reported poor health status but who were somewhat under-represented in the sample, so that caution is required in interpreting the level of association observed for the perceived health status variable, which was close to being significant. Also, a healthy worker effect may have operated, leading to an underestimation of the associations between occupational factors and poor perceived health.

Interpretation 20 Overall, this study was the first on this scale in military hospital setting, and the associations evidenced between psycho-social risk factors and perceived health were measured after adjustment on co-variables, in particular occupational risk factors. One of the strong points of the study is that it simultaneously explores psycho-social risk factors and other risk factors as possible determinants of health status. Consequently, this study efficiently integrated variables linked to the job, and also enabled the collection of considerable data on the feelings and perceptions of staff in their workplace.

Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence.

Generalisability 21 Discuss the generalisability (external validity) of the study results.

Other information

Funding 22 Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based.

*Give information separately for exposed and unexposed groups.