

Using an integrated approach to the assessment of the psychosocial work environment: the case of a major hospital in Northern Italy

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KEY WORDS

Work-related stress; psychosocial work environment; healthcare workers

PAROLE CHIAVE

Stress lavoro-correlato; ambiente psicosociale di lavoro; operatori sanitari

SUMMARY

Background: *In 2010, Italian regulatory guidelines have been issued consisting of a stepwise procedure for the assessment and management of work-related stress. However, research that empirically examines whether this procedure proves effective in accurately identifying critical psychosocial factors and informing risk management is scarce.* **Objectives:** *To examine the differential sensitivity of two approaches to risk assessment, the first based on objective instruments only, the second consisting of an integrated approach combining different methods and theoretical perspectives.* **Methods:** *We examined a sample of 306 healthcare employees in a large-size hospital in Northern Italy, using a series of tools, both quantitative (an observational checklist and the HSE-IT and MOHQ questionnaires) and qualitative (Focus Groups). Through instrument-specific reference values, we then compared risk profiles between different homogeneous groups within the institution.* **Results:** *The psychosocial work environment resulted to be far more positive when adopting the first compared to the second approach to risk assessment. The latter approach was also more sensitive in detecting between-groups differences in risk profiles. Furthermore, the Focus Groups returned a more context-specific picture of the psychosocial work environment. Finally, going beyond the emphasis on negative working conditions inherent in the other quantitative instruments, the MOHQ allowed for also identifying health-promoting factors in need for improvement.* **Conclusions:** *Although more research is needed to confirm our findings, the present study suggests that using an integrated approach to assess the psychosocial work environment may be the most effective way to accurately identify risk factors and support the management process.*

RIASSUNTO

«L'approccio integrato alla valutazione del rischio stress lavoro-correlato: l'esperienza di un grande ospedale del Nord Italia». **Contesto:** *nel 2010 sono state approvate in Italia le linee guida di indirizzo per la valutazione e gestione del rischio associato a stress lavoro-correlato, costituite da una procedura a step. Tuttavia, ad oggi è scarsa la ricerca empirica che esamina se questa procedura sia efficace nell'individuare con precisione i fattori psicosociali cri-*

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tici e nel valutare la gestione del rischio. Obiettivo: esaminare empiricamente la sensibilità differenziale di due approcci alla valutazione psicosociale, il primo basato sull'uso esclusivo di strumenti oggettivi, il secondo costituito da un approccio integrato che combina diversi metodi e prospettive teoriche. Metodi: Abbiamo esaminato un campione di 306 dipendenti della sanità di un ospedale di grandi dimensioni utilizzando una serie di strumenti, sia quantitativi (una checklist osservazionale e i questionari HSE -IT e MOHQ) sia qualitativi (Focus group). Utilizzando i valori di riferimento specifici degli strumenti, abbiamo poi confrontato i profili di rischio in diversi gruppi di operatori sanitari in seno all'istituzione. Risultati: Una visione più positiva, in termini di stress lavoro-correlato, è risultata dal primo approccio alla valutazione del rischio rispetto al secondo. Quest'ultimo è stato anche più sensibile nel rilevare la presenza di differenze inter-gruppo nei livelli di rischio. Inoltre, i Focus Group hanno fornito informazioni più specifiche e contestualizzate relative alle condizioni psicosociali di lavoro. Infine, l'uso di prospettive teoriche complementari ha contribuito a valutare anche la capacità dell'organizzazione di promuovere condizioni di lavoro che migliorino il benessere dei dipendenti. Conclusione: Anche se sono necessarie ulteriori ricerche per confermare i nostri risultati, il presente studio suggerisce che l'utilizzo di un approccio integrato alla valutazione del rischio stress lavoro-correlato possa essere il modo più efficace per identificare con precisione i fattori specifici e per orientarne il processo di gestione.

INTRODUCTION

With the enactment of the Legislative Decree 81/2008, the assessment and management of work-related stress has become a legal duty for all Italian employers (22). In 2010, the Permanent Consultative Committee for Health and Safety at Work has issued regulatory guidelines containing broad procedural indications to guide employers in assessing and managing the psychosocial risk factors, defined as “those aspects of the design and management of work, and its social and organisational contexts, that have the potential for causing psychological or physical harm” (6). These guidelines consist of a two-step procedure (20). The first step, referred to as the “preliminary evaluation”, is based on an objective assessment and aims to identify, independently of individual perceptions, the presence of organizational and task-related characteristics representing potential psychosocial risk factors. The second step (the “deeper evaluation”), however, consists of a subjective assessment that points to investigating employees’ perceptions of their psychosocial work environment. A crucial aspect of this approach is that employers have the obligation to accomplish the deeper evaluation only under two conditions: 1) the preliminary assessment has revealed groups of workers significantly exposed to adverse psychosocial working condi-

tions; 2) subsequent actions resulted as not effective in improving the risk. This choice may have profound implications for both risk identification and management. In fact, although the procedure outlined by the Consultative Committee has some advantages, above all its brevity and simplicity in accomplishing the risk assessment (22), it is not free of criticisms (7).

A first one is of a methodological kind and relates to the non-compulsoriness of the subjective assessment (4). Underlying this approach is the assumption that using objective measurement tools is good enough for correctly characterizing the psychosocial work environment and its stress-inducing potential. The competing validity of objective and subjective methods in assessing the psychosocial work environment has been a matter of debate for years (11, 21), with limitations recognized in both measurement approaches (25). On the one hand, subjective methods might not allow for a clear distinction between the actual and the perceived work environment; on the other hand, objective methods are not completely free from interpretation bias and are poorly sensitive to less overt psychosocial factors (e.g., role ambiguity, low social support, etc.) or to subtle contextual variations in exposure (6).

A second methodological criticism to the procedure outlined by the Consultative Committee, that automatically derives from the first, concerns its

exclusive reliance on quantitative tools to measure the psychosocial working conditions. Quantitative instruments, such as observational checklists and questionnaires, can be too generic when it comes to grasp the specificity of the psychosocial context; as a result, this may limit the correct identification of risk factors and the enactment of proper ameliorative measures (16). For such reasons, an increasing number of authors is recommending the use of a mixture of quantitative and qualitative methods (e.g., Focus Group and semi-structured interviews) in the assessment of work-related stress (18).

A final critical point is theoretical in nature and pertains to the perspective on organizational well-being that permeates the regulatory guidelines. These are clearly shaped in light of the traditional view of occupational health and safety, and are profoundly influenced by well-known theories of work stress such as the Job Demand-Control (12) and the Effort-Reward Imbalance (27) models. While these approaches are focused on the examination of potentially harmful psychosocial characteristics, more recent theoretical orientations, developed within the positive psychology perspective (26), are primarily intended to investigate those psychosocial working conditions having the potential for promoting employee well-being (see for instance the line of research based on the concept of work engagement) (3). In Italy, such a positive perspective gained momentum mostly with Avallone and Paplomatas (1), who introduced the construct of organizational health, defined as “those conditions enabling an organization as a whole to build and maintain well-being and high quality of life within its own working community”. Compared to the traditional approach, this orientation may better match with central features of the contemporary world of work; in particular, it emphasizes the importance of building motivating and engaging workplaces, which is key for sustaining employees’ well-being and performance (2), especially in service sectors like healthcare.

The present study

In this study, we assume that possible limitations of the procedure outlined in the regulatory guide-

lines may undermine the validity of the assessment and management of psychosocial risk in work organizations. To date, however, there is a paucity of research testing this hypothesis on an empirical basis. To contribute in this respect, we aimed to examine, using data from a major in Northern Italy, the differential sensitivity in assessing the psychosocial work environment of two different approaches: 1) the first based on the preliminary evaluation only; 2) the second consisting of a combination of the preliminary and the deeper evaluation, and the use of two complementary theoretical perspectives of organizational well-being. The comparison between these two approaches was made possible by the employer’s decision to use both objective and subjective instruments in four of the departments making up the examined hospital.

A characteristic feature of this study rests in the use of an analytical strategy that served our practical goal of showing which can be the implications, in terms of risk assessment and management, deriving from the adoption of either approach. To this end, we employed evaluative tools widely used in Italian companies and we applied instrument-specific reference values to determine the risk levels, as these represent commonly accepted thresholds for enacting risk prevention and intervention plans.

METHODS

Procedure and participants

The present study is based on data collected in the course of a work-related stress assessment carried out in a Northern Italian large-size hospital employing a total of 2368 persons.

Each phase of the work-related stress assessment and management was handled by an internal steering committee made up of key organizational figures, including the top management, Human Resources staff, health and safety representatives, occupational physicians, clinical psychologists, and workers’ representatives. Prior to initiating the audit, a particular emphasis has been placed upon en-

asuring both the support from the different layers of management and the centrality of workers' participation throughout the whole process. All workers have been informed well in advance about the aims and operational aspects of the risk assessment and management project.

In line with the regulatory guidelines, during the preliminary phase (September-December 2010) levels of psychosocial risk were evaluated in all hospital departments and the different healthcare profiles within, henceforth referred to as "homogeneous groups", using a commonly adopted observational checklist (20). Homogenous groups represent aggregations of workers that are assumed to share a number of individual and/or occupational characteristics (such as gender, age, job title, department etc.) likely exposing them to similar psychosocial risk factors (22). For each homogenous group, a separated observational checklist was filled out by the employer in collaboration with the steering committee and other key organizational figures. In the second phase (March-April 2011), the steering group has then selected four departments (i.e., Emergency, Surgery/Orthopaedic/Urology, Oncology and Mental Health) to be included in the deeper evaluation, as they were considered to be more likely exposed to adverse psychosocial working conditions if compared to other work units. All healthcare workers from these four departments (n = 393) were invited to fill-in two questionnaires and take part in Focus Groups.

In all, 306 healthcare workers responded to the questionnaires (response rate 78%). As shown in table 1, 62% of the sample was composed of women. Mean age and mean overall job seniority were 43 years old (SD 7.7) and 18 years (SD 10.5), respectively. The majority had a secondary education (50%), while about a third held a university degree. For each department, three occupational profiles were identified, namely registered nurses (68%), physicians (19%) and auxiliary staff (13%), for a total of twelve homogeneous groups. Overall, the sample was representative of the population of healthcare workers operating in the four selected departments.

Table 1 - Sample socio-demographic characteristics (n=306)

| Factors | N. | % |
|-----------------------------------|-----|-----|
| <i>Gender</i> | | |
| Male | 91 | 30% |
| Female | 190 | 62% |
| Missing | 25 | 8% |
| <i>Age groups</i> | | |
| 18-34 | 27 | 9% |
| 35-44 | 114 | 37% |
| 45-54 | 94 | 31% |
| > 55 | 20 | 6% |
| Missing | 51 | 17% |
| <i>Educational qualifications</i> | | |
| Primary education | 0 | 0% |
| Secondary education | 176 | 50% |
| University degree | 21 | 7% |
| Doctoral education or equivalent | 74 | 24% |
| Other education | 2 | 1% |
| Missing | 33 | 11% |
| <i>Length of service</i> | | |
| < 5 years | 22 | 7% |
| 5-14 years | 40 | 13% |
| 15-24 years | 123 | 40% |
| > 25 years | 94 | 31% |
| Missing | 27 | 9% |
| <i>Occupational profile</i> | | |
| Registered Nurses | 192 | 68% |
| Physicians | 59 | 19% |
| Auxiliary staff | 40 | 13% |
| <i>Hospital departments</i> | | |
| Department of Emergency | 101 | 33% |
| Surgery/Orthopaedy/Urology | 61 | 20% |
| Oncology | 29 | 9% |
| Department of Mental Health | 115 | 38% |

Instruments

Observational checklist

We carried out the "preliminary evaluation" by means of the observational checklist devised by the National Network for the Prevention of Work-related Psychosocial Disorders (20), an instrument aimed to examine objective indicators of work-related stress (22). These indicators are subdivided in

three areas, with a variable number of items, all to be answered using a dichotomous response format (yes/no): 1) sentinel events (10 items, including injuries, sick leave, turnover, notifications of work-related stress, etc.); 2) factors related to work content (i.e., work environment and equipment, 13 items; task planning, 6 items; workload and work pace, 9 items; work schedule, 8 items), and 3) factors related to work context (function and organizational culture, 11 items; organizational role, 4 items; career path, 3 items; autonomy in decision making and job control, 5 items; interpersonal relationships at work, 3 items; home/work balance, 4 items).

For the purposes of this study, we considered only data concerned with factors related to work content and context. Information for filling out the checklist were gathered from different sources, such as Human Resources Office's databases (relative to the previous six months), organizational charts, job descriptions and company procedures. Responses to each item were discussed and approved by the members of the steering committee. Following the instructions of the observational checklist manual (20), for each homogenous group we then calculated a separate score in relation to each content and context factor, by summing up the relative dichotomous items. We finally assigned each factor to one of the three possible risk levels (low, medium, high), based on the factor-specific score ranges in accordance with the manual (see table 2 for details). Interventions are recommended for all factors falling in the medium and high risk categories.

Self-reported questionnaires

The "deeper evaluation" was conducted by means of the Italian validated version (24) of the HSE-Indicator Tool (HSE-IT; 9) and the Multi-dimensional Organizational health Questionnaire (MOHQ) - healthcare version (1).

The HSE-IT (9) is a 35-item instrument developed to assess exposure to psychosocial risk factors based on traditional models of work stress (e.g., Job Demand-Control model) (12). Participants were asked to answer each item using a five point Likert-type scale (from 1="never" to 5="always" or from 1="strongly disagree" to 5="strongly agree").

The HSE-IT measures seven factors: "demands" (8 items), "control" (6 items), "support from management" (5 items), "support from colleagues" (4 items), "role" (5 items), "change" (3 items) and "relationships" (4 items). For each factor, scores were calculated by taking the average of the respective items. Higher scores indicate a more positive perception of psychosocial working conditions. Internal reliability of all factors was satisfactory, with all Cronbach's alphas higher than the recommended threshold of 0.70, with the only exception of "relationships", which obtained a Cronbach's alpha of 0.66. Scores were then compared with the Italian normative data available on the Italian Workers' Compensation Authority website (www.inail.it), based on 6300 respondents from various economic and productive sectors. Each factor was coded in one the following four groups based on the percentile distribution of the normative sample: "excellent performance" (≥ 80 th percentile), "good performance" (≥ 50 th and < 80 th percentiles), "clear need for intervention" (≥ 50 th and > 20 th percentiles) and "urgent need for intervention" (< 20 th percentiles). We categorized "excellent performance" and "good performance" as low risk, "clear need of intervention" as medium risk and "urgent need of intervention" as high risk.

The MOHQ - healthcare version (1) is a 139-item instrument designed to examine healthcare workers' perceptions of several dimensions related to organizational health. A total of 12 dimensions are measured by the MOHQ - healthcare version: "physical environment" (8 items), "perception of top management" (9 items), "perception of colleagues" (7 items), "organizational efficiency" (10 items), "equity" (4 items), "conflict" (4 items), "stress factors" (3 items), "safety" (7 items), "prevention quality" (5 items), "fatigue" (6 items), "isolation" (3 items) and "innovation" (9 items). Since our interest was to examine exposure to psychosocial working conditions, in the present study we did not use the four MOHQ dimensions measuring individual well-being and job satisfaction. Participants were asked to answer each item using a four point Likert-type scale (from 1="never" to 4="often" or from 1="insufficient" to 4="good"). Higher scores indicate a better perception of di-

mensions related to organizational health. Internal reliability of all factors was satisfactory, with Cronbach's alphas higher than the 0.70, with the only exception of two dimensions, i.e. "perception of colleagues" (Cronbach's alpha of 0.62) and "equity" (Cronbach's alpha of 0.40). For each dimension, scores were calculated by taking the average of the respective items. Based on reference values (1), we categorized mean scores for each dimension into three groups: "positive" (mean scores $\geq 2,9$), "fair" (mean scores between 2,6 e 2,9) and "critical" (mean scores $< 2,9$).

Focus group

Focus groups were ran to obtain context-specific information concerning the psychosocial work environment in the different homogeneous groups examined. All employees participating in the questionnaire assessment also accepted voluntarily to take part in the Focus Groups. A total of 28 Focus Groups were realized. All groups were conducted by two psychologists (one as moderator and one as observer) included in the internal steering committee. In each Focus Group, we decided to mix healthcare profiles from the same department so as to facilitate the emergence of factors possibly linked to problematic relations between them. To avoid participants feeling uncomfortable with expressing their opinions freely, in each individual Focus Group we did not include employees with hierarchical ties.

Analytical strategy

Quantitative part

With regard to the observational checklist, for each of the twelve homogeneous groups scores related to the psychosocial factors were calculated using the Excel scoring sheet available on the Italian Workers' Compensation Authority website (www.inail.it). Cronbach's alphas and group-specific means for each HSE-IT's and MOHQ's factor were computed using the SPSS statistical package version 20 (SPSS inc.). For all homogeneous groups, we determined the risk level associated with

each psychosocial factor based on the instrument-specific reference values described above. Therefore, homogenous groups were considered to be significantly different, in relation to each psychosocial factor, when diverging risk levels were observed. We adopted this simple analytical strategy in line with our purpose of showing the practical implications that might result from using the first rather than the second approach to risk assessment and management. In fact, reference values of the instruments used in this study are commonly adopted by Italian companies as thresholds to establish risk levels and implement subsequent measures to improve the psychosocial work environment.

Qualitative part

In the course of several meetings, the group of psychologists from the steering committee jointly discussed the contents emerged during the Focus Groups, isolating the most significant themes (both as a whole and specific to the homogeneous groups). Since the purpose of this activity was to unveil the presence of psychosocial risk factors at the group level, we only identified themes that were shared between members, excluding those raised by single persons.

RESULTS

Observational checklist

As shown in table 2, the observational checklist did not reveal any difference between homogenous groups in the level of risk associated with all of the psychosocial factors examined. Out of ten factors, seven resulted in the low risk category, while three (i.e., "organizational role", "career path" and "work schedule") fell in the medium risk category. No psychosocial factors could be assigned to the high risk category in any of the homogenous groups.

HSE-IT

Table 3 shows that, according to the HSE-IT instrument, the vast majority of psychosocial fac-

Table 2 - Means and risk levels at the observational checklist by occupational profile

| Psychosocial factors | Score range | | | Emergency Unit | | | Surgery | | | Oncology | | | Mental health | | |
|-----------------------------------|-------------|---------------|--------------|----------------|------------|-----------------|---------|------------|-----------------|----------|------------|-----------------|---------------|------------|-----------------|
| | Low Risk* | Medium Risk** | High Risk*** | Nurses | Physicians | Auxiliary staff | Nurses | Physicians | Auxiliary staff | Nurses | Physicians | Auxiliary staff | Nurses | Physicians | Auxiliary staff |
| <i>Work context</i> | | | | | | | | | | | | | | | |
| Function and organization culture | 0-4 | 5-7 | 8-11 | 3* | 3* | 3 | 3* | 3* | 3* | 3* | 3* | 3* | 3* | 3* | 3* |
| Organizational role | 0-1 | 2-3 | 4 | 3** | 3** | 3** | 3** | 3** | 3** | 3** | 3** | 3** | 3** | 3** | 3** |
| Career path | 0-1 | 2 | 3 | 2** | 2** | 2** | 2** | 2** | 2** | 2** | 2** | 2** | 2** | 2** | 2** |
| Job control | 0-1 | 2-3 | 4-5 | 1* | 1* | 1* | 1* | 1* | 1* | 1* | 1* | 1* | 1 | *1* | 1* |
| Interpersonal relationships | 0-1 | 2-3 | | 1* | 1* | 1* | 1* | 1* | 1* | 1* | 1* | 1* | 1* | 1* | 1* |
| Home/work balance ◊ | | | | 0* | 0* | 0* | 0* | 0* | 0* | 0* | 0* | 0* | 0* | 0* | 0* |
| <i>Work content</i> | | | | | | | | | | | | | | | |
| Work environment and equipment | 0-5 | 6-9 | 10-13 | 4* | 3* | 2* | 2* | 2* | 2* | 2* | 2* | 2* | 2* | 2* | 2* |
| Task planning | 0-2 | 3-4 | 5-6 | 2* | 1* | 1* | 2* | 2* | 2* | 2* | 2* | 0* | 2* | 2* | 1* |
| Workload and work pace | 0-4 | 5-7 | 8-9 | 3* | 3* | 1* | 3* | 3* | 3* | 3* | 3* | 1* | 3* | 3* | 2* |
| Work schedule | 0-2 | 3-5 | 6-8 | 4** | 4** | 4** | 4** | 4** | 6** | 4** | 4** | 4** | 4** | 7** | 4** |

Note: for each factor higher scores reflect more negative working conditions.

◊ In the factor “home/work balance” for a total score equal to zero you must enter -1, instead for a score greater than zero you must enter the value 0.

Table 3 - Means and risk levels of the seven HSE-IT factors by occupational profile

| Psychosocial factors | Emergency Unit | | | Surgery | | | Oncology | | | Mental health | | |
|-------------------------|----------------|------------|-----------------|---------|------------|-----------------|----------|------------|------------------------------|---------------|------------|-----------------|
| | Nurses | Physicians | Auxiliary staff | Nurses | Physicians | Auxiliary staff | Nurses | Physicians | Auxiliary staff [§] | Nurses | Physicians | Auxiliary staff |
| Mean | | | | | | | | | | | | |
| Demands | 3.21** | 3.08*** | 3.23** | 2.81*** | 3.34** | 3.41** | 3.50** | 2.75*** | - | 3.45** | 2.87*** | 3.64* |
| Control | 3.18** | 3.33** | 3.29** | 3.05** | 3.45** | 2.70*** | 3.43** | 3.28** | - | 3.37** | 3.09** | 3.24** |
| Support from Management | 3.23** | 3.20** | 3.35** | 3.24** | 3.96* | 3.32** | 3.34** | 3.90* | - | 3.43** | 3.07** | 3.69** |
| Support from colleagues | 3.71** | 3.64** | 3.34** | 3.67** | 3.96* | 3.25*** | 3.77** | 3.79** | - | 3.69** | 3.30** | 3.71** |
| Relationships | 3.59** | 3.53** | 4.03** | 3.76** | 4.25* | 3.78** | 4.04** | 4.00** | - | 3.72** | 3.71** | 3.74** |
| Role | 4.13** | 4.01** | 4.33** | 4.13** | 4.49* | 4.06** | 4.12** | 4.17** | - | 3.90*** | 4.05** | 4.07** |
| Change | 2.95** | 3.04** | 3.13** | 3.20** | 3.67* | 2.80** | 3.38** | 3.61* | - | 3.14** | 2.96** | 3.37** |

Note: all scales range from 1 to 5, with higher scores reflecting more positive working conditions.

*Low risk (very good or good performance); **Medium risk (clear need for intervention); ***High Risk (urgent need for intervention).

[§]Scores not available due to insufficient number of participants.

tors resulted in the medium risk category in all homogenous groups. Differences were mainly observed in relation to the factor “demands”, which resulted in the high risk category among physicians in all departments (except Surgery), and among registered nurses in Surgery. The HSE-IT revealed a high risk also in relation to “autonomy” and “social support from colleagues” among auxiliary staff in Surgery, and to “organizational role” among registered nurses in the Mental Health department. The few low risk factors were observed mainly among physicians in Surgery, which reported positive psychosocial conditions in five out of the seven factors. Moreover, auxiliary staff in the Mental Health department were at low risk for “demands”, while physicians in Oncology were at low risk for both “managerial support” and “change”.

MOHQ

As shown in table 4, the MOHQ instrument revealed a considerable number of differences between homogeneous groups with regard to the or-

ganizational health dimensions considered. Four dimensions, i.e. “stress factors”, “fatigue”, “isolation” and “equity” were critical among almost all homogenous groups. On the contrary, both “perception of colleagues” and “prevention quality” were positive across most homogenous groups. A more varied situation was observed for the other six dimensions, i.e. “organizational efficiency”, “psychical environment”, “perception of top management”, “safety”, conflict” and “innovation”, with the latter two being critical for a higher proportion of homogeneous groups. Although no clear patterns could be detected, as a whole more critical factors could be observed among registered nurses and auxiliary staff in all of the four departments. In particular, within Surgery physicians reported half the number of critical factors if compared to the other two groups. Concerning differences between departments, results suggested a generally more positive situation in Oncology, although the picture was incomplete in this department as no scores could be calculated for auxiliary staff due to insufficient number of participants.

Table 4 - Means and relevance of the twelve MOHQ dimensions by occupational profile

| Organizational health dimensions | Emergency Unit | | | Surgery | | | Oncology | | | Mental health | | |
|----------------------------------|----------------|------------|-----------------|---------|------------|-----------------|----------|------------|------------------------------|---------------|------------|-----------------|
| | Nurses | Physicians | Auxiliary staff | Nurses | Physicians | Auxiliary staff | Nurses | Physicians | Auxiliary staff [§] | Nurses | Physicians | Auxiliary staff |
| | Mean | | | | | | | | | | | |
| Physical environment | 2.70** | 2.72** | 2.83** | 2.78** | 3.21* | 2.93* | 3.10* | 3.08* | - | 2.75** | 2.70** | 2.49*** |
| Perception of management | 2.64** | 2.70** | 2.92* | 2.78** | 3.22* | 2.54*** | 3.06* | 3.18* | - | 2.84** | 2.86** | 2.82** |
| Perception of colleagues | 3.15* | 3.11* | 3.11* | 3.19* | 3.13* | 3.05* | 3.32* | 3.14* | - | 3.31* | 3.19* | 3.14* |
| Organizational efficiency | 2.82** | 2.91* | 3.01* | 2.78** | 3.26* | 2.87** | 3.25* | 3.38* | - | 2.90* | 2.82** | 2.92* |
| Equity | 2.32*** | 2.30*** | 2.50*** | 2.35*** | 2.68** | 2.46*** | 2.50*** | 3.10* | - | 2.36*** | 2.45*** | 2.46*** |
| Conflict | 2.52*** | 2.39*** | 2.59*** | 2.57*** | 2.95* | 2.29*** | 3.00* | 2.70** | - | 2.63** | 2.46*** | 2.75** |
| Stress factors | 1.82*** | 1.50*** | 1.59*** | 1.67*** | 1.89*** | 1.80*** | 2.24*** | 1.60*** | - | 2.00*** | 1.65*** | 1.88*** |
| Safety | 2.72** | 2.83** | 2.74** | 2.82** | 3.18* | 2.93* | 3.17* | 2.64** | - | 2.73** | 2.69** | 2.50*** |
| Prevention quality | 2.88** | 3.25* | 3.08* | 2.97* | 3.43* | 2.94* | 3.10* | 3.60* | - | 3.01* | 2.88** | 2.89** |
| Fatigue | 1.70*** | 1.82*** | 1.96*** | 1.53*** | 1.99*** | 1.99*** | 1.88*** | 1.83*** | - | 2.01*** | 1.86*** | 1.83*** |
| Isolation | 2.35*** | 2.14*** | 2.21*** | 2.52*** | 2.38*** | 2.33*** | 2.40*** | 2.20*** | - | 2.40*** | 2.30*** | 2.39*** |
| Innovation | 2.41*** | 2.74** | 2.68** | 2.56*** | 2.91* | 2.75** | 2.84** | 2.80** | - | 2.52*** | 2.40** | 2.57*** |

Note: all scales range from 1 to 4, with higher scores reflecting more positive working conditions.

*Positive (scores ≥ 2,9) ; **Fair (scores > 2,6 and < 2,9); ***Critical (scores ≤ 2,6).

[§]Scores not available due to insufficient number of participants.

Focus Groups

The following themes, shared by most participants, emerged from the Focus Groups:

1. Strong work motivation and commitment to healthcare work (high sense of social utility).
2. High resiliency resources, enabling workers to cope with lengthy periods of demand/resource imbalance within the healthcare institution.
3. Work overload as a result of financial cuts made to the healthcare system at the national level. However, potentially stressful working conditions seemed being effectively compensated by existing positive resources such as high group cohesion and co-workers' reciprocity in supporting each other, and, among physicians and auxiliary staff, adequate man-

agerial support. In departments where managerial support is lacking, the likelihood of resource depleting conflicts was perceived to be higher.

4. An overall positive perception regarding conditions of the physical work environment.
5. In the Emergency and Mental Health departments, individual security was judged as poor due to an elevated exposure to threat and aggressions.
6. A low degree of job satisfaction has emerged among auxiliary staff from Surgery due to organizational constraints created by a merge between three departments (i.e., Surgery, Orthopaedics and Urology). This organizational restructuring has led auxiliary staff to receive diverging indications from medical staff on

how to manage patients' care delivery (role conflict).

7. An overall lower degree of job satisfaction and personal fulfilment among registered nurses.

DISCUSSION

This study, based on a sample of healthcare workers of a large-size hospital in Northern Italy, points to the emergence of substantially diverging pictures of the psychosocial work environment when adopting two different approaches to risk assessment, one based exclusively on the preliminary evaluation and one including both the preliminary and the deeper evaluation and combining complementary theoretical perspectives of organizational well-being.

In fact, the preliminary evaluation (objective assessment), as performed using the organizational checklist, returned a by far more favourable picture of the psychosocial working conditions than the deeper evaluation (i.e., subjective assessment). In addition, the organizational checklist did not show any difference between homogenous groups with respect to the psychosocial factors considered. The self-reported questionnaires, in contrast, revealed a number of psychosocial working conditions with the potential of harming workers' health and well-being. They also provided a more articulated and multi-faceted account of the psychosocial context, by pointing to divergent risk profiles among the homogeneous groups.

Although collecting more data is inherently associated with the achievement of more rich and detailed information, our results suggest that limiting the analysis of the psychosocial work environment to the preliminary evaluation may profoundly affect the assessment and management of work-related stress among Italian companies. In fact, in accordance with the Permanent Consultative Committee's guidelines, the evaluation process may end, thereby excluding the accomplishment of the deeper assessment, if based on the preliminary evaluation the psychosocial factors examined do not reach the threshold indicating a significant risk. Since measures are enacted contingent on these

threshold, there may be circumstances in which actions are not taken because of a potentially suboptimal evaluation of the psychosocial risk. For instance, with regard to the hospital departments examined in the present analysis, if the organization had relied exclusively on the results of the preliminary objective evaluation, it would have considered taking actions only in relation to a small amount of psychosocial risk factors and it would not have contemplated the presence of any risk difference between homogenous groups.

There may be several reasons for these divergent findings. A first one relates to the fact that it is oftentimes difficult to deduct the risk associated with psychosocial factors at work from objective features of the organization (6). For instance, evaluating the risk connected to role stress based on items included in the observational checklist such as "employees are aware about their company's hierarchical structure" or "employees' roles are clearly defined" might be problematic. On the one hand, it may be not consequential that knowing the hierarchical structure results in low stress. For example, an employee may be well informed of people sitting at the different layers of management, but at the same time he/she can experience a high role stress because of managers exhibiting poor communication or ineffective leadership practices. On the other hand, it may be hard locating objective information that are suitable for answering the dichotomous items making up the observational checklist. This problem may mostly apply to those psychosocial factors, such as role ambiguity and conflicts, interpersonal relationships, organizational cultures, leadership quality, etc. (13), that are difficult to measure using external indicators.

A second possible reason is that, since the observational checklists are usually filled in by steering committees consisting of key organizational figures such as the employer and workers' representatives, results of the objective evaluation may heavily depend on the power structure of the assessment group. For instance, in companies with a culture characterized by poor employees' participation, the effective contribution given by the workers and/or their representatives in filling out the observational checklist may be limited. This is likely to result in

risk underestimation, since in many occasions employers might display a tendency to escape the identification of critical factors requiring potentially costly interventions. In this respect, we agree with de Falco et al. (10), who defined “inter-subjective”, instead of “objective”, those instruments that rely on the interaction between different organizational figures in order to evaluate the psychosocial work environment. The term “objective” might be more appropriate to use in relation to observational instruments, such as RHIA (15), that make use of trained external observers for conducting the assessment.

A third reason relates to the dichotomous response format of the items forming the observational checklist, which in some circumstances may lead to polarizing the answers in a way that psychosocial factors with moderate risk levels remained unidentified.

A fourth and final reason is that the observational checklist, as other similar methods, might be able to detect manifest differences while proving less effective in capturing more subtle variations in psychosocial exposure (6). This limitation could underlie the fact that we have found very few differences between homogeneous groups in terms of risk levels.

On the opposite, our findings suggest that self-reported questionnaires may be generally more sensitive than objective methods in capturing the presence of work-related psychosocial risk factors. This may ensue from the fact that employees' perceptions of the psychosocial context are shaped through their day-to-day work experiences. Indeed, the impact that objective features of the organization may have on health and well-being derives to a large extent from the way work systems and procedures are transformed by contingent practices and inter-personal interactions, as well as by coping resources available to both the individuals and the work groups. These processes may contribute to explain why, compared to the observational checklist, self-reported questionnaires provided a more critical and heterogeneous breakdown of the psychosocial work environment. A further advantage of using also subjective tools in addition to objective ones is that the first may increase the lev-

el of employee participation, which represents a key factor to the success of the intervention stage (4, 14).

Obviously, self-reported questionnaires are themselves not free of limitations. In particular, a well-known concern is that employees' perceptions are influenced by individual factors (such as personality and moods) and methodological artefacts (e.g., common method variance) (25), possibly threatening their validity in assessing the psychosocial work environment. In our study, however, these limitations are reduced since: 1) we used validated questionnaires such as the HSE-IT and the MO-HQ; 2) we obtained a high response rate, which exclude results being affected by selection bias; 3) we analysed data at the group level and 4) we did not examine relationships between exposure and individual outcomes, thus excluding any possible impact of common method variance on our results.

Another indication provided by this study is the usefulness, while assessing the psychosocial work environment, of complementing quantitative with qualitative instruments (such as Focus Groups). Qualitative approaches may indeed provide a more tailored and dynamic account of the psychosocial context, counterbalancing the low degree of specificity typical of quantitative methods. The Focus Groups enabled us to go beyond the micro-reality of the examined institution by elucidating the role of macro-level factors in influencing the psychosocial context (see for instance the role played by the current crisis of the healthcare system). They also permitted to unveil the presence of resources such as group cohesion and co-workers' support, which served as factors buffering the negative impact of psychosocial exposures on employees. In addition, the inclusion of different healthcare profiles in the Focus Groups facilitated the emergence of psychosocial problems resulting from inter-group interactions, whereas quantitative tools allowed for considering intra-group phenomena only. For such reasons, the use of qualitative methods is particularly beneficial when the assessment is carried out with the primary aim of identifying psychosocial risk factors existing in specific work settings (16). As argued by Murphy (19), intervention efficacy is in fact heavily dependent on how the assessment

proves capable of detecting risk factors that are specific to the organizational contexts under evaluation. For the above-mentioned reasons, recently many authors have started to indicate the use of mix-method qualitative-qualitative approaches as particularly appropriate in the field of occupational health psychology (18).

A final indication of the present study is that the use of a complementary questionnaire such as the MOHQ, focused on the examination of positive organizational factors, may supply crucial information on the capability of a workplace to set conditions enabling organizational health and employees' well-being to be sustained and promoted. Notably, in our study the MOHQ was the instrument providing the most critical and diversified picture of the psychosocial work environment. In the case examined in our study, results obtained using the MOHQ suggested the need for the organization to engage in a more holistic approach to intervention, by taking not only initiatives to reduce negative psychosocial factors, as intrinsic in the classical approach to health and safety (17), but also by focusing on measures supporting an organization's effectiveness in promoting positive working conditions (such as equity, innovation, prevention and safety cultures) (1). This approach diverges substantially from the one put forth by the regulatory guidelines, and it also contrasts with the widespread use in Italy of tools recommended by national authorities (such as the observational checklist and the HSE-IT) that are heavily influenced by classical perspectives of occupational health and safety.

This study presents some limitations. One is that we did not employ common statistical techniques to examine differences between homogeneous groups in the levels of risk. In particular, as we did not adjust for any confounder, we cannot exclude that an unequal between-group distribution of some characteristics influencing the exposure to adverse psychosocial factors may have biased the results. However, the use of this analytical strategy can be also a strength of the present study, since it reflects the criteria used by most of the Italian companies to identify risk factors and take decisions about measures needed. Another limitation is that none of the instruments we used in-

cluded items evaluating emotional demands, which represent a key psychosocial risk factor in health-care workers (8). This could have affected the completeness of the assessment, resulting in an underestimation of the risks associated with the psychosocial work environment.

In conclusion, the present study suggests that, in line with recent perspectives (25), using an integrated approach to the assessment of the psychosocial work environment may be the most effective way to accurately identifying risk factors and informing the management process. Although more empirical research is needed to confirm our findings, our study points to the recommendation of using both objective and subjective approaches of measurement right from the initial stages of the risk assessment. Furthermore, mixing quantitative/qualitative tools and using complementary theoretical approaches, as developed in light of both traditional work stress perspectives and more recent organizational health frameworks, may provide a more thorough and context-specific view of the psychosocial work environment, helping companies to build not only risk-free work environments but also organizational cultures promoting an enduring state of well-being, motivation and performance among employees.

NO POTENTIAL CONFLICT OF INTEREST RELEVANT TO THIS ARTICLE WAS REPORTED

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