



Different Jobs, Different Perceived Stress: A Work-Related Stress Analytical Study

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ABSTRACT

Background: Subjective cognitive decline is considered to be a risk for Alzheimer's disease. However, it can also be associated with non-cognitive variables.

Objectives: This study analyzes the association between Subjective Cognitive Decline (SCD) and variables related to memory, mental health, morbidity, pain, quality of life, loneliness, lifestyle, and social aspects; analyzes predictors of SCD.

Methods: Cross-sectional epidemiological study of a sample of individuals randomly selected from a city census. Telephone interviews were conducted with 1775 individuals aged over 55 years. We administered a 7-item questionnaire on SCD and asked about health, lifestyle, and social variables; we also administered a measure of general mental health, the Goldberg Health Questionnaire, and the health-related quality of life scale COOP/WONCA.

Results: SCD showed statistically significant associations with orientation in time ($r=0.16$), mental health variables ($r=0.41$), quality of life ($r=0.36$), loneliness ($\eta^2=0.04$), disability ($R^2=0.05$), pain ($R^2=0.12$), hearing difficulties ($R^2=0.03$), vision problems ($R^2=0.05$), and chronic disease ($R^2=0.04$). The variables orientation in time, mental health, depression, sleep quality, multimorbidity, and hearing difficulties were identified as predictors of SCD ($p<0.001$; $R^2=0.30$).

Conclusion: The heterogeneity of the variables associated with SCD should be taken into account to differentiate individuals at increased risk of developing Alzheimer's disease from those in whom the condition may be explained by other factors.

Keywords: Subjective cognitive decline; Memory complaints; Loneliness; Pain; Mental health; Quality of life

INTRODUCTION

The European Agency for Safety and Health at Work (2000) defines work-related stress as a condition that "occurs when the demands of the work environment exceed the ability of workers to cope with it". It consists perhaps in an imbalance between individual resources, which also involve forms of adaptation called "coping" and work factors, defined as "stressors" that the worker cannot manage [1].

The evaluation of work-related stress is a legal requirement under

the Legislative Decree 81/08 s.m.i., and generally is carried out by the employer jointly with the RSPP and medical doctor.

Stress represents the second most frequent work-related health problem, affecting about 22% of EU-27 workers [2].

Different studies in the literature show that one of the reasons why it is important to evaluate the work related stress is the ability to reduce the incidence of such reactions and the prevention of their consequences.

In the medical field, if the stressor is not deleted, the subsequent

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reaction to it can become an important pathogenetic cofactor to several psychic and somatic syndromes including anxiety, insomnia, anorexia, panic attacks, irritability, difficulty concentrating and decision [3-5], hypertension and tachycardia [6], gastrointestinal reactions [7-8], reduction of immune system [9-12] and cognitive and emotional disorders decision [3-5].

In the evaluation of work-related stress, the identification of the so called stressors is a priority, in order to plan targeted interventions.

The causes of stress in a working environment are many, and are divided by Hacker (1991) into two macro-categories [13].

-Factors related to work context (i.e. working categories and risk definition conditions);

-Factors related to work content. (i.e. work environment and equipment, planning of tasks).

The work context category includes all the stressors involved in work organization, career development and interpersonal relationships; those that are undoubtedly most responsible for the development of work-related stress are: a reduced participation in the decision-making process, the “horizontal” organizational structure, an organizational structure not clearly defined, discriminatory policies, poor social support by colleagues, interpersonal conflict, unfair distribution of work, conflicting demands between home and work, harassment [14].

The macro-category of work content includes stress-related risk factors due to the work environment and equipment, the division and planning of tasks, work schedules and workloads. The most representative stressors of this category are: shift work, night work, excessive number of hours, unwanted overtime, poor free time, uncertainty or contradictory tasks, monotonous work, work requiring high concentration, problems with maintenance or repair of structures and work equipment, work with exposure to harmful and/or cancer agents [15,16].

According to a detailed review of the literature the European Agency for Safety and Health at Work (2000) pointed out that the work-related stress has to be dealt with the same priority as other health and safety problems in the workplace, through the use of appropriate management protocols [17].

PURPOSE OF THE STUDY

The aim of the study is to evaluate subjective stress in different work populations through the use of a 35-item “questionnaire-indicator tool” developed by HSE (Health and Safety Executive) and adopted also in Italy through a process promoted by INAIL (Italian Institute of Social Insurance for Work Injuries). The sample consists of 1244 subjects: 363 Video Terminal Unit Operators (VDUO), 150 childhood school teachers, 302 kindergarden teachers, 257 cleaning operators, 122 rescuer drivers, 50 social workers.

MATERIALS AND METHODS

The research was conducted using a “questionnaire-indicator tool” developed by the HSE (Health and Safety Executive) for the purpose of assessing the related work stress [18,19]. This questionnaire, administered during the mandatory health surveillance visit, assesses the subjective components of stress, is an easy-to-administer tool with a guarantee of anonymity, usable in all companies with more than 10 workers, compatible with the indications for stress assessment related work contained in the legislation 18/11/2010 of

the Ministry of Labor and Social Policies (referring to the Legislative Decree 81/2008 as amended), as it provides results relating to groups of workers and not only to individual workers [20,21].

Each of the 35 questions of the questionnaire includes a single answer, based on a 5-point Likert scale with 23 items that measure the frequency (answers from ‘never’ to ‘always’) and 12 items that measure the degree of concordance (from ‘strongly agree’ to ‘fully disagree’).

The study was carried out over a calendar year.

The research was carried out starting from a working population of 1244 subjects divided as follows: 363 VDU operators aged between 31 and 66 years (average: 52.8; DS: \pm 8.35), 150 childhood school teachers age between 32 and 66 years (average: 50.5; DS: \pm 8.22), 302 kindergarden teachers aged between 33 and 67 (average: 50.2; DS: \pm 7.34), 257 cleaners aged between 20 and 71 years (average: 45.8; DS: \pm 11.69), 122 rescuer drivers aged between 21 and 65 (average: 38.8 ; DS: \pm 11.5), 50 social workers aged between 37 and 65 (average: 48.4; DS: \pm 8.14).

The VDU operators group used the video terminal for an average of 20 hour/a week, less the 15 minute breaks every 2 hours.

The kindergarden teacher is a professional who deals with the education and care of children in the 0-3 age group; these operators have a contractual obligation of 30 working hours per week.

The childhood school teacher defines the educational objectives of the year through different programming phases, prepares, organizes and carries out recreational-educational activities with children aged 3-6 years. For these workers the number of hours to play weekly is regulated by the national collective agreement of the school sector and amounts to 25 hours per week.

Cleaning operators worked an average of 8 hours per day for 5 days a week, divided into morning and afternoon shifts. They cleaned in hallways and rooms where food was prepared and carried out their work in front of industrial dishwashers from which they took and placed utensils such as crockery and trays for washing purposes.

The rescuer drivers worked divided into 12-hour shifts (7 am-7 pm or 7 pm-7 am) with two weekly rests and took care of driving the ambulance, and assistance and help to the patient transported.

The social worker is a professional figure of reference for social services: he deals with providing individuals, families and groups in difficult conditions with the support needed to improve their situation; these operators have a contractual obligation of 36 working hours per week (Figure 1).

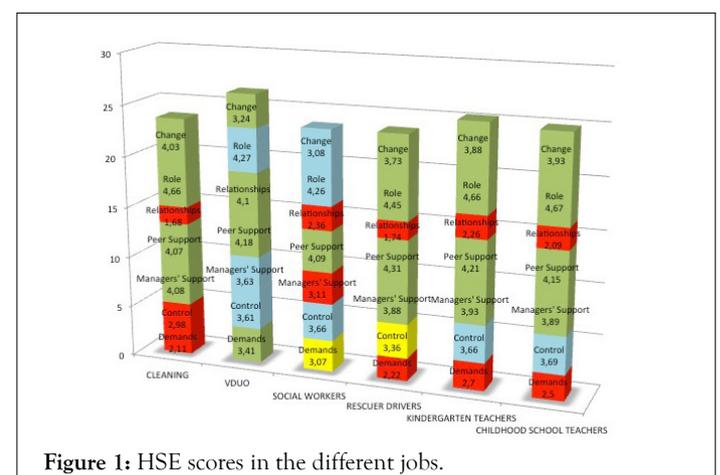


Figure 1: HSE scores in the different jobs.

The questionnaire, administered on the occasion of health surveillance visits provided for by current legislation and preceded by the compilation of a brief survey of socio-demographic data, consists of 35 items, concerning working conditions considered to be potential causes of work-related stress corresponding to six risk factors or organizational dimensions defined by the “Management Standards” model [22].

These seven dimensions are: the Demands (workload, work organization, work environment) control (autonomy in the performance of their work), support from management and colleagues (encouragement, support and resources provided by the company), relationships (promotion of a kind of work that avoids conflicts and face any unacceptable behavior), role (awareness of the role in the organization) and change (perception of the extent to which the organizational changes, of any size, are managed and are communicated in the corporate environment .

The HSE analysis tool provides average scores for each dimension and allows to identify the organizational performance present in each of them, analyze it and compare it with the reference data, given by the medium from 136 different work organizations [18,19].

The study was performed according to all the requirements concerning approval by ethical regulation and all the participants were informed about the meaning of the protocol and the finalities of the research.

The Italian version of Indicator Tool was administered to each participant after they had signed a written consent to the study and being informed about the processing of their personal data [20]. They had also agreed the data would be treated anonymously and private.

The returned questionnaires were examined for the correct and complete compilation: with no multiple answers or non-answers. The answers were included in the software, and each record was then checked to avoid input errors and modified if necessary.

Data analysis

The data obtained from the questionnaires were analyzed using specific software which allows the comparison with the reference population. The software used allows to compare the organizational performance in the management of work related stress with the ideal conditions/state.

Based on the analysis of the results obtained from the use of specific software, we got for each homogeneous group of workers, different results marked by a “color code” (Table 1) [23].

Table 1: Meaning of the colour code.

High level of performance; it is necessary to keep it	
Good level of performance	
Clear need for corrective action	
Need for immediate corrective action	

The red color indicates a serious situation that requires immediate corrective action the values falling below the 20th percentile. The yellow area indicates a clear need for corrective action, with values below the average but above the 20th percentile. In the case of

values that fall in the blue area there is a good level of performance, which requires some interventions, with values above the average but below the 80th percentile. The green area indicates a good level of performance, which is to be maintained over time, with the fulfillment of Management Standard and values higher than the 80th percentile.

Statistical analysis

T Test was performed to analyze the differences between the means of the variables as age and scores resulting by test

RESULTS

Results are summarized in table 2.

Table 2: Scores obtained in the investigated dimensions by the studied population.

	Cleaner VDUO	Social Workers	Rescuer Drivers	Kindergarten Teachers	Childhood School Teachers	
Demands	2,11	3,41	3,07	2,22	2,70	2,50
Control	2,98	3,61	3,66	3,36	3,66	3,69
Manager's Support	4,08	3,63	3,11	3,88	3,93	3,89
Peer Support	4,07	4,18	4,09	4,31	4,21	4,15
Relationships	1,68	4,10	2,36	1,74	2,26	2,09
Role	4,66	4,27	4,26	4,45	4,66	4,67
Change	4,03	3,24	3,08	3,73	3,88	3,93

DEMAND Dimension

Regarding to VDUOs, the “Demands” dimension were located in the green area (above the 80th percentile). The green area regarded all the items with the exception of questions 9 (which fell into blue area) and 16 (which have fallen back into the blue area).

Concerning teachers, they showed to be part of the red area (below the 20th percentile). Even the single items obtained a critical score, with the exception of question 20 (yellow area) and 9 (green area).

The outcome of the test fell into the red area, with more minor criticalities found exclusively in items 9 (green) and 20 (blue) hens we considered the category of educators.

The cleaning and washing operators have obtained a very critical overall score in the demand dimension (red area) with the exception of questions 9 and 20, which resulted into the green area, showing a score higher than the 80th percentile.

The rescuer drivers obtained a score below the 20th percentile (red area) in the application, with one exception, also in this case for items 9 and 20 (green area); social workers showed an overall score between the 20th and 50th percentiles (yellow area), the most critical items were 6, 16, 18 and 22 (Table 3) [24].

Table 3: Results of Test t considering the means of the scores in the investigated dimensions Only statistically significant differences were reported.

	Social Workers	Cleaner
Demands	3,07*	2,11*
Control	3,66*	2,98*
Manager's Support	3,11*	4,08*
Peer Support		
Relationships		
Role	4,26*	4,66*
Change	3,08*	4,03*

(Note: *p= <0.05)

Control Dimension

The result of control dimension fell in the blue area for the VDU operators, with a greater criticality found in question 30 (my working hours can be flexible) which fell back into the yellow area. The same dimension evaluated in both teachers and educators fell in the blue area, with high critical points in questions 2 (red area) and 30 (yellow area). Concerning washing and cleaning workers, the outcome of the control dimension fell into the red area, with high criticality for all items, while for rescuer drivers it was situated into the yellow area, with a lower severity for items 10, 19, 25 (blue area). With regarding to social workers the dimension of the control fell in the blue area, with a high criticality (yellow area) only for question 2 (Table 4).

Table 4: Results of Test t considering the means of the scores in the investigated dimensions Only statistically significant differences were reported.

	Social Workers	VDUO
Demands		
Control		
Manager's Support	3,11*	3,63*
Peer Support		
Relationships	2,36*	4,10*
Role		
Change		

(Note: *p= <0.05)

Managers support dimension

The dimension of support from the superiors obtained an overall score in the blue area for VDUOs; with a high criticality only to question n. 35 (my boss encourages me to work). The cleaning and washing workers, the childhood school teachers, the kindergarten teachers and the rescue drivers have obtained a score higher than the 80th percentile for the aforementioned dimension, particularly crucial score were observed in question 35 (red area). Social workers, on the other hand, obtained an overall score lower than

the 20th percentile, only question 8 appeared somewhat critical.

Peer support dimension

This dimension has obtained an overall score higher than the 80th percentile for VDUOs, rescue drivers and kindergarten teachers, with the achievement of management standards for all items. Also for cleaners and washing and social workers this area fell into the green area, with a greater criticality, however falling back into the blue area, to the item 24. The childhood school teachers showed a criticality to item 31, despite having obtained an overall score for the dimension above the 80th percentile (Table 5).

Table 5: Results of Test t considering the means of the scores in the investigated dimensions Only statistically significant differences were reported.

	Social Workers	Kindergarten Teachers
Demands		
Control		
Manager's Support	3,11*	3,93*
Peer Support		
Relationships		
Role	4,26*	4,66*
Change	3,08*	3,88*

(Note: * p= <0.05)

Definition of the role dimension

This dimension has obtained an overall score between the 50th and 80th percentiles for VDUOs, childhood school teachers, kindergarten teachers and cleaners. A high criticality was observed only for item 17. The childhood school teachers totaled an overall score higher than the 80th percentile; achievement of management standards for all items was reported. Even the rescuer drivers obtained a very satisfactory overall score (green area), showing a decrement of score only for item 17, which fell back into the yellow area. On the other hand, for social workers this area resulted into the blue area, only question 17 revealed a possible problem, also for this task.

Quality of relationships dimension

This dimension situated into the green area for VDUOs, for which the only critical question (yellow area) appears to be the 21th. For cleaners and caretakers, social workers, rescuers, educators and teachers this area was particularly critical, with an overall score of less than the 20th percentile for individual items (Table 6).

Table 6: Results of Test t considering the means of the scores in the investigated dimensions. Only statistically significant differences were reported.

	Social Workers	Childhood School Teachers
Demands		
Control		

Manager's Support	3,11*	3,89*
Peer Support		
Relationships		
Role	4,26*	4,67*
Change	3,08*	3,93*

(Note:* p= <0.05)

Change dimension

The purpose of the change dimension has obtained an overall score higher than the 80th percentile for VDUOs. The item that has deviated the most from the standard items was found to be 26. The overall score and the individual items resulted into the green area regarding to cleaners and washing both. Social workers totaled an overall score between the 50th and 80th percentiles, with a criticality in items 26 and 28, which fell back into the yellow area. For rescuer drivers, childhood school teachers and kindergarten teachers, the overall score and the score of the individual items resulted into the green area (Table 7).

Table 7: Results of Test t considering the means of the scores in the investigated dimensions. Only statistically significant differences were reported.

	Social Workers	Rescuer Drivers
Demands	3,07*	2,22*
Control		
Manager's Support	3,11*	3,88*
Peer Support		
Relationships	2,36*	1,74*
Role		
Change	3,08*	3,73*

(Note:* p= <0.05)

Our research verified the above indicated statistically significant differences between the means of scores in several dimensions of the different considered jobs; the results can be so summarized:

a) In the Table 3 we can verify that the Social Workers presented mean scores less than Cleaners in the dimensions named "Manager's Support", Role and Change, instead the Cleaners show mean score less than Social Workers in the dimensions as "Demands" and "Control" these differences appeared statistically significant (p<0.05);

b) In the Table 4 we can observe that the Social Workers showed mean scores less than VDUO in the dimensions "Manager's Support" and "Relationships" (p<0.05);

c) In the Table 5 we can note mean scores less in the Social Workers with regard to dimensions "Manager's Support", Role and Change, considering Social Workers and Kindergarten Teachers, these differences appeared statistically significant (p<0.05);

d) The same result appeared when we matched Social Workers and Childhood School Teachers (Table 6; p<0.05);

e) Particularly important seemed the differences between Social Workers and Rescue Drivers observed in the Table 7 where we can see that the Social Workers exhibited mean scores less than the Rescue Drivers in the dimensions as "Demands", "Manager's Support", "Relationships" and "Change" (p<0.05);

f) Cleaners show less mean scores than VDUO in the dimensions "Demands and "Relationships", instead in the dimensions "Role" and "Change" the VDUO present score less than Cleaners (Table 8; p<0.05);

g) In the Table 9 and Table 10 we can evaluate that Kindergarten Teachers and Childhood School Teachers perceived more distress than VDUO in the dimensions as "Demands" and "Relationship", nevertheless VDUO show mean scores less than the first in the two dimensions as "Role" and "Change", this last difference appears statistically significant too (p<0.05), but, in our opinion, it is not important (Table 8);

Table 8: Results of Test t considering the means of the scores in the investigated dimensions. Only statistically significant differences were reported.

	Cleaner	VDUO
Demands	2,11*	3,41*
Control		
Manager's Support		
Peer Support		
Relationships	1,68*	4,10*
Role	4,66*	4,27*
Change	4,03*	3,24*

(Note:* p= <0.05)

h) Rescue Drivers showed mean scores less than VDUO in two dimensions as "Demands" and "Relationship", this result appears in the Table 11 and it is statistically significant (p<0.05).

DISCUSSION

Chronic stress is defined as a condition in which the subject undergoes a series of chronic stressors events perceived as stressful that determine the onset of psychic and physical changes of such magnitude that prevent the individual to restore its homeostasis.

The first definition of stress dates back to 1956, when Hans Selye (1907-1982) with his works "The Stress of Life" he clarified this concept. To the doctor Austrian stress was defined as a condition in which the subject does finds to be subjected to a series of chronic stressors that determine the onset of psychic and physical changes of such a magnitude to prevent to the body to restore homeostasis. Therefore, he defined as "syndrome of adaptation" that physiological response that the organism puts in place to do face various types of stressors such as physical, mental, social or environmental.

The adaptation syndrome evolves into three distinct phases:

-Alarm phase, in which the body implements a series of mechanisms defined as "coping", both physical and mental, to cope with stress;

-Resistance phase, characterized by an increase in the circulation of

hormones of “Stress resistance” such as cortisol;

-Exhaustion phase in which, due to the perpetuation of stimulation stressors, the aforementioned compensatory mechanism fails and yes they produce the negative psychophysical effects of stress. The adaptation response may, therefore, become dysfunctional (Table 9).

Table 9: Results of Test t considering the means of the scores in the investigated dimensions. Only statistically significant differences were reported.

	VDUO	Kindergarten Teachers
Demands	3,41*	2,70*
Control		
Manager's Support		
Peer Support		
Relationships	4,10*	2,26*
Role	4,27*	4,66*
Change	3,24*	3,88*

(Note:* p= <0.05)

In this case yes has the transition from “eustress” as a physiological response to stressors, a “Distress” or a “mal adaptive” response characterized by impairment of both social and work activities [25].

It is widely documented that workers subjected to chronic psychological stress show a series of consequences such as concentration and memory impairment, poor learning, allergies, headaches, disorders of the eating behavior, nervousness, depression, anxiety, and irritability [26].

The psychometric properties of the HSE questionnaire were analyzed by several studies that confirmed the factorial structure and showed significant associations with other indices related to work-related stress, such as anxiety, dissatisfaction from work and the frequency of sick leave (Table 10).

Table 10: Results of Test t considering the means of the scores in the investigated dimensions. Only statistically significant differences were reported.

	VDUO	Childhood School Teachers
Demands	3,41*	2,50*
Control		
Manager's Support		
Peer Support		
Relationships	4,10*	2,09*
Role	4,27*	4,67*
Change	3,24*	3,93*

(Note:* p= <0.05)

From the results of these studies, the HSE questionnaire is considered a valid and reliable instrument for the assessment of

work-related stress. In particular, it allows to easily obtaining an evaluation on the different kind of organization of work, in order to identify where it is possible to reduce the risk of stress.

The questionnaire is compatible with the guidelines for the evaluation of work-related stress in the European legislation, as it provides results for groups of workers, not only for individual workers. Furthermore, it appears to be a particularly useful tool as it can be used both in a preliminary stage of analysis, to get directions on some aspects for instance the physical environment or the role within the organization, the control, etc.), and in a phase of in-depth evaluation of the subjective perception of stress (Table 11).

Table 11: Results of Test t considering the means of the scores in the investigated dimensions. Only statistically significant differences were reported.

	VDUO	Rescuer Drivers
Demands	3,41*	2,22*
Control		
Manager's Support		
Peer Support		
Relationships	4,10*	1,74*
Role		
Change		

(Note:* p= <0.05)

In our study we investigated the subjective perception of stress in 1244 subjects belonging to different companies and with different tasks in order to assess which dimensions were at greatest risk regarding work related stress and were the jobs more harmful considering the stress.

For the VDU operators the results showed a very satisfactory overall score (green area) for the demand dimension, documenting an excellent level of tolerance with respect to workload and demand working [27].

The control dimension, which concerns the autonomy of the workers on the modalities of carrying out their working activity, has fallen back for the VDUOs in the blue area, with a greater criticality to the question 30, documenting a good level of autonomy from such workers, but with inflexible working hours [28].

The area of managers support, which includes the encouragement and resources provided by the employer, obtained an overall score between the 50th and 80th percentile (blue area) with a very high criticality to the question 35. This situation suggests good support from superiors but little encouragement in carrying out the activity.

The peer support dimension has instead obtained an overall score for the individual items very satisfactory, with achievement of management standards, deposing for excellent support from colleagues. The area of relationships, which includes the promotion of positive work to avoid conflicts and deal with unacceptable behavior, resulted in the green area for VDUOs.

The role dimension, which verifies the awareness of the worker in relation to the position he holds in the organization and ensures that conflicts do not occur, obtained in the VDUOs an overall

score that situated in the blue area. The purpose of change, which assesses how organizational changes of any size are managed and communicated in the corporate context, has fallen into the green area, emphasizing an excellent level of satisfaction.

For the cleaning operators, the demand dimension resulted into the red area, configuring a poor level of tolerance with respect to workload and organization, with one exception in the “I have to work very hard” and “I have to do my job quickly”, relapses in the green area. This result supports a situation of perception of poor organization in the absence of an excessive workload.

The purpose of the control has obtained, in this category of workers a very negative overall result (red area), with medium-high criticality for all the items, denoting a low autonomy of the workers with respect to the modalities of carrying out their working activity.

The area of managers' support was achieved in the green area, with a good performance for all the items except for the question “my boss encourages me in my job”, which scored less than the 20th percentile, creating a sensation subjective of good support from superiors but little encouragement in pursuing work objectives. The dimension of the colleagues' support has obtained an excellent overall score, with satisfaction of management standards for all items except “colleagues give me the help and support I need”, however relapsed into the blue area, documenting a medium-high level of satisfaction in peer relationships [29].

On the contrary, the dimension of relations has obtained an overall score and for single items very negative (red area). This result, in stark contrast to what is said above, is due to the presence of a tense work environment, in which phenomena such as mobbing and with a scarce attention to personal problems possibly exposed by workers may be present [14].

The areas of role and change have fallen into the green area, both in the overall score and in the results of the individual items, indicating an excellent awareness of the worker with respect to the position he holds and an equally good management of organizational changes in the company context.

For the task of social workers, the demands area has obtained an overall negative score (yellow area), with greater criticality for the questions “I have unreachable deadlines”, “I do not have the possibility to take sufficient breaks”, “I get pressure to work over time”, “I have deadlines that are impossible to meet”. This result underlines the perception by these workers of an excessive workload, of the requests that cannot be achieved and not achievable within the work shift, an inadequate attention to the management of problems related to the environment in which social workers perform their business (Relationships of work-related psychosocial risks, stress, individual factors and burnout Questionnaire survey among emergency physicians and nurses [30].

The control dimension has obtained an overall score in the blue area, with a high criticality (yellow area) for the question “can I decide when to take a break”, configuring an overall medium-high level of satisfaction but with the impossibility to perform breaks when deemed appropriate.

The area of managers support fell into the red area, with a bad performance on all the items except for the question “I receive supporting information that helps me in the work I do”, denoting a poor support of this category by the superior but good communication. The size of the support on the part of colleagues has instead obtained an overall score that fell in the green area,

with one exception to the question “colleagues give me the help and support I need”, however relapse in the blue area. Therefore for this area social workers have a good level of satisfaction linked to positive relationships between colleagues.

The relations dimension, even for social workers, obtained an overall score for individual items very negative, indicating the presence of a conflictual environment with respect to the needs of the individual.

The area of role has fallen into the blue area, with a good level of satisfaction with respect to the identification of the role held, with the exception of the question “I understand how my work fits into the general objectives of the organization” (red area).

The purpose of change fell in the blue area with medium-high criticalities to the questions “I have sufficient opportunities to ask the managers for explanations about changes in the work” and “the staff is always consulted about changes in work”. The overall level of communication and management of changes in the company context is therefore to be good even if with little support from the superiors, as pointed out above, and a poor consideration of the individual opinion of the worker.

For the task of rescuer drivers, the areas that deviated most from the management standards, with an overall result falling into the red area were the demand and the relationships. For the latter also all the items fell into the red area, denoting the presence of a tense environment prone to aggression through bullying and harassment [31].

For the demand dimension, only the items “I have to work very hard” and “I have to do my job very quickly” got a good score. This result leads us to consider a subjective perception of excessive workload for the rescuer drivers, but that requires not negligible timing and therefore to be considered in the interventions.

The control dimension also obtained an overall low-medium score (yellow area).

The area of colleagues support and change have fallen into the green area, both in the overall result and for the individual items, outlining a situation of excellent management and communication of changes (for example change of workstations, change of shifts of work, etc.) and an efficient support from the colleagues.

The area of managers support also achieved an excellent score, with an overall result and for all the items that fell into the green area except for the question “my boss encourages me in my work”. Also in this case the support from the superiors does not seem to be accompanied by an encouragement in giving more to work [32].

For the rescuer drivers, the purpose of the role obtained an overall score higher than the 80th percentile, defining an excellent awareness of the role covered; only the question “I understand how my work fits into the general objectives of the organization” fell back into the yellow area, denoting the presence of poor information, for the company, regarding the role of the rescuer driver in relation to the structure company.

The kindergarten teachers and childhood school teachers for the area of demand obtained an overall score lower than the 20th percentile, with a very low satisfaction level. Also in this case, despite the high work load, decision-making autonomy is left to these operators on the speed with which to carry out the tasks and on the management of the tasks themselves.

The purpose of control for these tasks fell in the blue area; with high criticality for the questions “I can decide when to take a break” (red area) and “my working hours can be flexible” (yellow area). This situation indicates a reasonable level of satisfaction with regard to the control over work, with the exception of working hours, considered to be rigid.

Also for these tasks, the results concerning the support from the managers suggest that these offer support to their employees but not an encouragement with respect to the objectives to be pursued (overall score and for all items in the green area with the exception of question 35) [33].

The areas of support from colleagues, role and change for the tasks of childhood school teachers and kindergarten teachers have obtained an overall score and for the individual items excellent, with satisfaction of standard management, deposing for good support among colleagues, a good definition of the role and a good tolerance to changes. Only the item “colleagues are willing to listen to my problems at work” has fallen back into the blue area for the task of kindergarten teachers, documenting an inadequate willingness to listen to personal situations.

The area of relationships is instead relapse for both the tasks in red area, deposing for the presence of a poor attention to the individual problems and a tense working environment, inclined to the typical problems of the professions defined “of help” as burnout [34].

As regards the comparison between the various tasks, the demand dimension fell into the red area for all tasks, with the exception of VDU operators and social workers (relapse in the yellow area anyway), underlining the presence of an excessive workload for the aforementioned workers [27].

The control dimension has obtained an overall negative score for cleaning and washing workers and for rescuer drivers, these tasks are in fact those with less decision-making freedom with respect to the autonomy of the workers on how to carry out their work. The activity of the cleaning and washing workers is very stereotyped, while for the rescuer drivers the way the work is carried out is linked to the presence of guidelines for the management of emergencies and good practices.

The area of support by managers totaled a positive score, highlighting a situation of optimal performance for all tasks with the exception of social workers (red area). For this task it is very often impossible to identify a manager, who can be framed a few times in the figure of the coordinator, who hardly supports the work of these operators, who are very often forced to work in difficult environments (prisons, etc.) [35].

The colleagues support dimension obtained an overall score in the green area for all tasks; this situation indicates the presence of a collaborative and listening environment [36].

The area of relation totaled a very negative score for all tasks with the exception of VDUOs. This underlines a difficulty in relations with users by these professions (parents of children, patients) [37].

The area of the role and the change have obtained positive scores for all the groups, therefore our study shows that these workers have an optimal awareness relative to the position they hold in the company organization and an excellent adaptation to any organizational changes in the company context [38].

Kindergarten teachers and childhood school teachers have a higher stress level than Video Terminal Operators (VDUO). One of the

most important causes of stress is the reduced Job Control which in case of teachers is difficult to evaluate. This is due to the reactivity of the children and to classes not homogeneous that contribute to create an important emotional workload. In our research we tried to measure this level of workload [39].

The VDUOs appeared less subjected to stress. We need consider that our VDUO sample did not include computer programmers, but was constituted by VDUOs that operated without particular challenging work schedule. In fact they could be considered our control group. The social workers showed mean scores less than other jobs, indeed such job requests an important emotional involvement and the results of this job do not always depend on the worker, this feature could appear very stressful surely together acted troubles regarding the Change, Role and Manager’s supports, they have lower mean scores in these dimensions [40,41].

CONCLUSION

From 31/12/2010 the obligation to assess work-related stress risk comes into force. This assessment obligation was explicitly introduced in art. 28 of Legislative Decree 81/08, in which it is envisaged that the employer evaluates all the risks including those connected to work-related stress, according to the contents of the European agreement of 8/10/2004.

Considering that the effects of stress appear in different areas (emotional, cognitive, behavioral, psychosomatic), it is a priority for the employer to identify the areas capable of causing it.

This evaluation is carried out by completing the INAIL checklist by the employer with a medical doctor and by RSPP and then by submitting questionnaires, which are subjective tools that make it possible to identify accurately the most stressful factors.

The most accredited questionnaire is the “questionnaire-indicator tool”, proposed by INAIL and developed by the HSE (Health and Safety Executive).

The results of the HSE questionnaire allow to identify the specific factors, of content and context, on which action is needed to reduce the risk of work-related stress.

From our research it emerged that for the majority of the tasks analyzed, the stress level for some areas such as that of relationships was found to be very high, therefore further research should be focused on identifying the causes of the triggering factors and on correcting the situations defined critical.

Our study verified in a sample quantitatively adequate an important association between stress and job in cleaning workers, the cause capable of explaining this reported higher stress could be a low level of education, particularly regarding the training. This result would underline the crucial importance of the training as required by European and Italian laws in order to prevent work diseases.

In particular with regard to social workers, likely both work context and work content play an important role because they show alterations in the dimensions as Role, Change and Manager’s Support?

Our results seem to suggest that the levels of stress in some areas turned out to be higher in some tasks. Such results allow the correction of situation defined as critical through new and original protocols, compared to the technological procedures already known.

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