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ENHANCING WORKERS' WELL-BEING

Scientific and social relevance of managing stress in the workplace

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Introduction

The main aim of this PhD thesis is to add knowledge concerning which factors and processes contribute to enhance well-being in the workplace and how to manage them. Workers' well-being has been extensively studied under the name of work-related stress and strain. This topic is of strong interest for organisational psychologists since many years and great attention on this argument has been demonstrated both by the attention paid by the academia and the governments' policies.

As a matter of fact, an easily searching activity on Scopus database (which is now one of the most used and well-known database in the psychology field) for the strings 'work-related stress' or 'work stress' in titles, abstracts and keywords results in 4.468 published papers. Research papers belong to various disciplines such as medicine, psychology, social sciences, nursing, engineering, business and management etc., demonstrating that work-related stress is a wide concept and it is well disseminated. The graph presented in figure 1, shows the increasing number of published papers, demonstrating the enhanced attention paid to the work-related stress topic during the years.

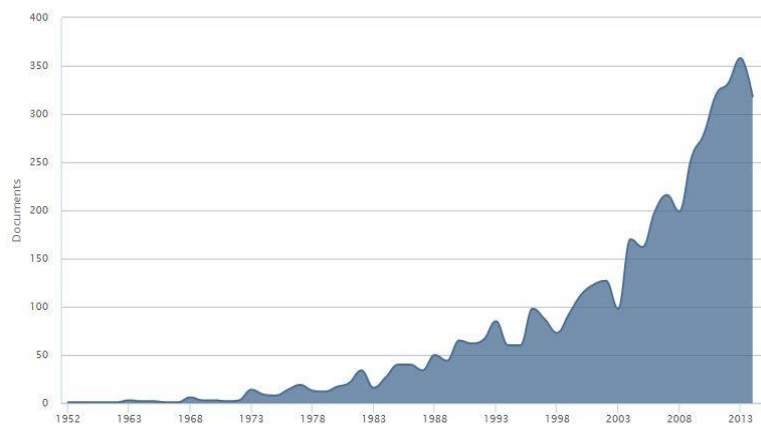


Figure 1 – Distribution of published papers on work-related stress from 1952 to 2014

The first studies on stress raised in the first half of the 20th century thanks to the researches of Selye (1936, 1946) and later with the studies of Lazarus (1966), which investigated psychological stress and the coping processes. Specifically, concerning work-related stress, the first available framework in the literature is the Job Demand and Control model (JDC) developed by Karasek in 1979. This model identified two main characteristics, which could influence workers' well-being: job demands and job decision latitude (usually called job control). Karasek (1979) defined job demands as 'the psychological stressors involved in accomplishing the workload, stressors related to unexpected tasks, and stressors of job-related personal conflict' (Karasek, 1979, p. 291), while job control has been defined as a 'working individual's potential control over his task and his conduct during the working day' (Karasek, 1979, pp. 289-290). Two main dimensions constitute job control: a) decision authority, which refers to the workers' authority to take decisions about job activities; b) skill discretion, which refers to the extent of skills workers use in their job. As presented in figure 2, the combination of these two characteristics results in four main types of job.

Low job demands combined with low control could represent passive job, which is characterized by a decrease in workers' skills, because there is no opportunity for the worker to control over their job and enrich it.

Jobs characterized by low job demands and high job control has been defined as low strain jobs, which constitute an optimal situation because workers have the opportunity to control over their activities, which are here considered as low demanding.

The most harmful job considered by the model is the high strain job, which is characterized by high job demands and low decision latitude. The example often used to describe the high strain job is the assembly line, where workers usually have low control and there is a

high workplace. However, assembly lines are not the only situation that could produce high strain jobs (Fraccaroli and Balducci, 2011). Indeed, other similar work situations of our period, as for example working in a call centre, could be considered, following the Karasek's framework, as a high strain job.

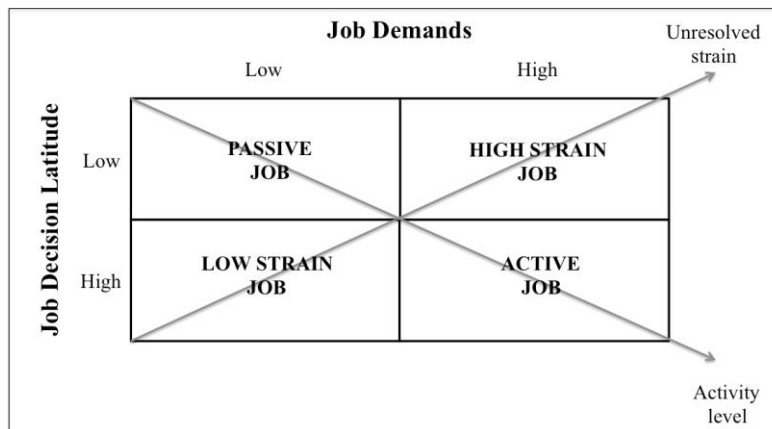


Figure 2 – The Job Demand Control Model (Karasek, 1979)

Karasek also considered the high strain job as the General Adaptation Syndrome (GAS) of Selye (1946). Basically, Karasek posited that the negative effects observed by Selye in their experiments on rats were due to the animals' exposure to a high strain situation as there were high demands and low control.

The last combination of the Karasek model is the active job, which is characterized by high job demands combined with high control and could produce also learning. The active job suggested that high job demands are not negative per se, instead, if they are combined with high control the result could be a positive and engaging job.

Later, Johnson and Hall (1988) extended Karasek's model introducing a new variable: social support both from colleagues and supervisors, which could act as a moderator as job

control. Thus the model became the Job Demand-Control-Support model (JDCS; Karasek and Theorell, 1990).

Social support dimension has been analysed particularly respect to high strain situations, as social support could decrease the effect of strain on workers health. The JDC and JDCS models have been widely and intensively studied also nowadays. Despite this, other models have been developed in order to analyse the role of stressors and effects on strain and workers' well-being, as for example the Effort Reward Imbalance Model (1996) and Job Demands-Resources model.

Siegrist developed Effort-Reward Imbalance model in 1996. The Effort-Reward Imbalance model postulated that the perceived imbalance between efforts (such as job demands or obligations) and rewards (such as wage, promotions, esteem, etc.) could produce strain in workers. In this model the motivation could moderate the relationship between imbalance and strain.

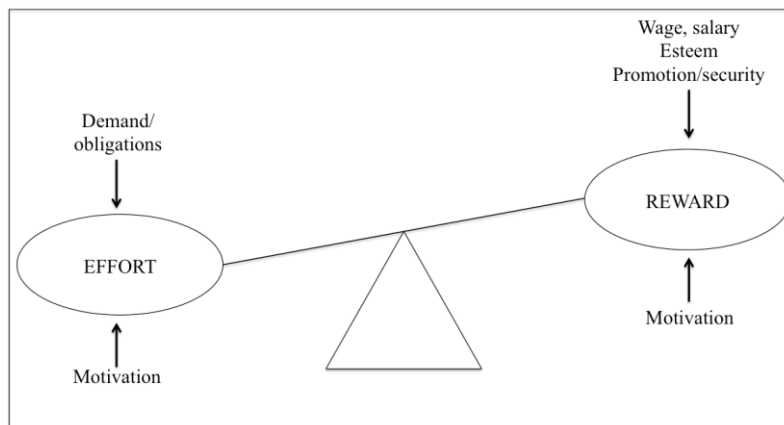


Figure 3 – The Effort-Reward Imbalance Model (Siegrist, 1996)

Siegrist posited that there are three main conditions of imbalance. The first condition occurs when workers accept the imbalance because the effort of trying to modify the imbalance situation is perceived as higher respect to the effort of accepting this imbalance.

The second condition occurs when workers accept a high imbalance for a certain period aiming to gain a reward in the future (as for example a promotion).

The third situation of imbalance is due to overcommitment which is characterized by a high need for control and others' approval which could also be related to an overestimate of coping abilities and an underestimate of the efforts.

After the Siegrist's conceptualization, the most used model, which will be intensively used and discussed in this thesis, is the Job Demands Resources model (JD-R, Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Bakker & Demerouti, 2007; Bakker, Demerouti, & Sanz-Vergel, 2014). Since it has been published in 2001, JD-R model obtained high popularity among researchers and currently, it is recognized as one of the leading job stress models, along with the Job Demand Control model of Karasek (1979) and the Effort Reward Imbalance Model of Siegrist (1996) previously described (Schaufeli & Taris, 2014). Central components of this model, which are usually considered as antecedents, are job demands and job resources.

Job demands has been defined as 'those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs' (Demerouti et al., 2001, p.501), while job resources has been defined as 'those physical, social, or organizational aspects of the job that may do any of the following: a) be functional in achieving work goals; b) reduce job demands and the associated physiological and psychological costs; c) stimulate personal growth and development' (Demerouti et al., 2001, p.501). One of the main characteristics of the JD-R model is its

flexibility as job demands and job resources are not fixed, but could be changed due to the specific occupation under study.

Job demands and job resources trigger two different processes, which compose the JD-R model: the health impairment process and the motivational process. The health impairment process postulates that high job demands may enhance the likelihood of strain (exhaustion) in workers, and therefore lead to further negative consequences related to the depletion of energy and to health problems (Bakker, Demerouti, & Schaufeli, 2003a).

The second one, namely the motivational process, postulates that high job resources could increase engagement, which in turn could lead to positive outcomes such as job performance. Despite job demands and job resources initiate different processes they have also joint effects. For example, there are two possible ways in which job demands and job resources could interact (Bakker, Demerouti, & Sanz-Vergel, 2014).

The first possible interaction is that job resources buffer the impact of job demands on strain. The second possible interaction occurs when job demands amplify the impact of job resources on work engagement.

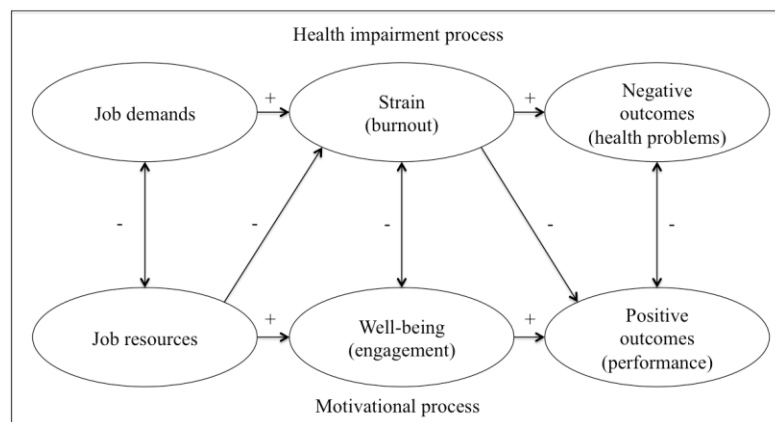


Figure 4 – The revised Job Demands-Resources Model (Schaufeli & Taris, 2014)

The JD-R model has been widely studied in the last fifteen years and many extensions of this model have been tested during this period. As reported by Schaufeli and Taris (2014) in their critical review of the JD-R model, this model has been studied in a relatively loose way and actually there is no single JD-R model. Three of the four studies that will be presented in this thesis are based on the JD-R model and provide a contribution in extending the model.

This brief overview of the main tested models concerning workers' well-being highlights that those models has some characteristics in common. The first one is that all the models presented rely on a balance between different aspects in order to influence workers' strain (e.g. the balance between high/low job demands and job control, or the interaction between job demands and job resources etc.). The second common characteristic is that there is an overall common process which is that there are some antecedents (which could be called psychosocial risk factors, or stressors) which could lead to strain (which is often interchangeably used with exhaustion, or stress), which in turn could lead to negative outcomes (both related to health or to organizational consequence such as absenteeism).

As previously reported, great attention to work-related stress and well-being has been widely demonstrated also by governments' policies and the topic is strongly relevant especially nowadays. In fact, as reported by Fraccaroli and Balducci (2011), changes in the labour market affected the quality of working life even in the Scandinavian countries (e.g. Pejtersen and Kristensen, 2009; Sverke, 2009). Thus, also the recent economic crisis could have severely affected the quality of working life, especially in Italy.

As reported by Leka, Griffiths and Cox (2003) work-related stress has been recognised worldwide as a major challenge to workers' health and the healthiness of their organisations (c.f. International Labour Organization [ILO], 1986, 1992)

The European and American agencies started considering work-related stress since a long time. Firstly, the National Institute of Occupational Safety and Health (NIOSH) in 1999 published the report 'Stress at Work' which defines work-related stress as 'the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker. Job stress can lead to poor health and even injury' (p. 6). Similarly, in 2004 also the European Union reached the Autonomous Framework Agreement on Work-related Stress, which postulates that 'stress is a state, which is accompanied by physical, psychological or social complaints or dysfunctions and which results from individuals feeling unable to bridge a gap with the requirements or expectations placed on them. [...]. Moreover, different individuals can react differently to similar situations and the same individual can react differently to similar situations at different times of his/her life' (ETUC, UNICE, UEAPME, CEEP, 2004 p. 4). One of the main aims of this agreement was to enhance awareness and understanding on work-related stress on employers and employees.

Taking the example of Italy, work-related stress has been introduced in 2008 as a risk factor, which is mandatory to assess in line with the other risk factors such as chemical risk, biological risk and so on. Two years later, the Italian Government provided also some guidelines on how to assess work-related stress in the workplace, but after five years there are still no official available data on the presence of stress or on which kind of psychosocial risk factors are the most frequent in the Italian workplaces. According to this, Peirò and Molina (2013), citing the European Survey of New Emerging Risk – Psychosocial Risk (Rial-González, Cockburn, & Irastorza, 2010), reported that there is a strong lack of activity of psychosocial risk assessment because only 26% of factories in the EU-27 have procedures aimed to cope with work-related stress.

In order to assess work-related stress many models and methods especially in Europe have been developed. A recent review of the scientific research and institutional experiences on the evaluation development of psychosocial risks in Europe collected by Peiró and Molina (2013), highlighted that the most used method in Italy is the INAIL one. The INAIL method consists of a phased approach that aims to identify the organisational dimensions associated with risk factors from the scientific literature. This method was based on the Management Standard Model developed by HSE (Health and Safety Executive), which is a public body of the United Kingdom, which is responsible for the encouragement, regulation and enforcement of workplace health, safety and welfare and for research on occupational risks. The aim of the INAIL method is reducing work-related stress levels in organisations. Despite the intensive application of this method, a recent study raised issues concerning its reliability (Balducci & Piattella, 2014).

Another method used to investigate work-related stress recently published is the StART method (STress Assessment and Research Toolkit) developed by Guglielmi and colleagues (2013a), whose main aim is to understand how to detect and manage psychosocial risk factors in organisations.

The development of the StART method rose from three main issues concerning work-related stress: thresholds, measures and types of data. The first issue concerning thresholds refers to the fact that comparing stress to other workplace risks there is no possibility to define a clear threshold which could distinguish who is stressed (or exactly under what conditions automatically workers will experience stress) respect to who is not. The second issue concerning subjective and objective measures is due to the fact that both of these measures could be affected by different kind of systematic bias, which could be reduced by the combined use of both types of measures. The last issue concerns the need for using both qualitative and quantitative data

because of two main reasons: a) different typologies of data collection could increase the reliability of the measure; b) the use of quantitative and qualitative data allows understanding not only levels of measurement, but also enhancing knowledge about organization-specific processes and dynamics.

Thus, the StART method is composed by different stages, which integrate subjective and subjective measures and quantitative and qualitative type of data. For that reason, the StART method is based on the mixed methods research approach which ‘provides a better understanding of research problems, as only one type of data could provide an incomplete understanding’ (Creswell & Plano Clark, 2011, p. 5). StART represents a very flexible method for two main reasons: it allows for choosing the appropriate instruments based on the type of information that has to be detected and/or the peculiarities of the context; provides to firstly collect data through qualitative approach, which will be useful in order to subsequently design the quantitative instrument to use. Thus, in line with the JD-R model, also StART method is characterized by flexibility.

According to this, in order to enhance knowledge concerning which factors and processes contribute to create healthy workplaces, this thesis is composed by four different studies aiming to understand (using both subjective and objective measures and both qualitative and quantitative data): a) the role of relevant antecedents (e.g. leadership, job demands, work-family conflict, social support etc.) and outcomes (e.g. workplace phobia, absenteeism etc.) of work-related stress; and b) how to manage psychosocial risk factors in the workplace.

Specifically concerning relevant antecedents and outcomes of work-related stress, three main studies will be presented.

The first study, presented in chapter 1, will focus on the role of leadership styles in

determining workers health. The choice to focus on leadership is based on the relevance of this dimension in understanding workers' well-being and work team characteristics. In fact, as reported also by the European Agency for Safety and Health at Work, leadership is one of the key determinants of employee well-being and it is essential to promote and sustain a safe and healthy workplaces (2014). Many studies investigated the effect of different leadership styles on workers' well-being and work team climate, but there is a lack of studies that analyse the disagreement between how a leader rates her/himself as a leader and how their supervisees perceived him/her. Thus, the aim of the first study will be to analyse whether disagreement between supervisor and supervisees could affect workers health (particularly emotional exhaustion, work engagement and general health) and work team variables (such as social support and conflict among colleagues).

The second study, presented in chapter 2, will focus on the role of job demands and work-family conflict in determining strain and subsequently absenteeism using the health impairment process of the JD-R model. Work-family conflict is a main theme concerning workers' well-being as also the International Labour Organization (Gospel, 2003) highlighted the role of work-family conflict as an emerging risk factor in the quality of working life. Thus, the aim of this second study is to better comprehend which are the relationships between job demands, work-family interface and workers' health and how them could potentiate absenteeism (measured through objective data) in the workplace.

The third study presented in chapter three, considers psychosocial risk factors, well-being and absenteeism. The aim of this study is to analyse the role of an under-recognized health outcome (namely workplace phobia) in the JD-R model, particularly analysing also its relationship with absenteeism. Workplace phobia has been considered as an anxiety disorder and

it has been previously studied only in clinical context. Thus, there is a need to analyse workplace phobia in organisational settings, particularly because previous study suggested that work-related factors could trigger the process which lead to workplace phobia and in turn to absenteeism (measured through objective data).

Consistent with what previously described about how to manage psychosocial risk factors in the workplace in order to increase workers' well-being, the last study presented in chapter 4 will focus on an application of the StART method using the JD-R model. Trying to answer to the social increasing aspect concerning workers' well-being, the main aim of this last study is to analyse how mixed methods research enables both the identification of particular demands and resources on the workplaces which could influence workers' well-being and the analysis of how this approach is useful to concrete suggestions to organizations in how they may enhance workers' well-being through the implementation of organizational initiatives.

Subsequently to the four studies, the thesis concludes with a conclusion section including main results, limitations, strengths, future research directions and practical implications of the studies presented.

Chapter 1

Am I who they think I am? How disagreement between supervisor and supervisees affects employees' well-being and work teams

Introduction

Nowadays organizations and work teams have increasingly to face demands both from external sources (e.g., economic issues related also to the economical crisis) and from internal ones (e.g., workplace diversity). Facing those kinds of demands may be very challenging for organizations. Supervisors play a central role in coordinating work teams to respond to such pressures and help subordinates to work together effectively. Staff engagement, an essential component of that effort in modern organizations, is considered to be largely a matter of quality of leadership (cf. West, Dawson, Admasachew, & Topakas, 2011). The leadership style of supervisors plays a central role not only in the group's productivity but also enhancing the workers' well-being (Arnold, Turner, Barling, Kelloway, & Mc Kee, 2007).

From the Burns' (1978) conceptualization of the leadership construct, which comprises a continuum between transformational and transactional leadership, and the subsequent Bass research (1985), with a first study of Burn's theory, a large number of papers has been published on the leadership construct. According to Bass and Avolio (1990), there are three main leadership styles, transformational, transactional, and *laissez-faire*, all of which represent 'the paradigm for understanding both the lower and higher order effects of leadership style' (p.3).

Transactional leadership refers to the exchange relationship between the leader and his supervisees to meet their own self-interests. The transactional leader offers contingent reinforcement to supervisees. On the other hand, the transformational leader inspires,

intellectually stimulates, and considers the workers as individuals (Bass, 1990). In contrast to these two leadership styles, which are generally seen as proactive, the laissez-faire leader is characterized by avoiding decisions and is classified as reactive (Yammarino & Bass, 1990; Yammarino, Spangler, & Bass, 1993).

Some studies have investigated the relationship between leadership style and different outcomes on individuals and work teams, with somewhat contradictory results. In fact, although the negative effects of laissez-faire leadership seem to be established (e.g. Skogstadt, Einarsen, Torsheim, Aasland, & Hetland, 2007), the differences between transactional and transformational leadership style are not well defined so far (Avolio, Bass, & Jung, 1999).

For example Bass and Riggio (2006) argued in principle that transformational leaders seem to find ways to solve conflict between subordinates by emphasizing organization's interests over individual's own interests. In contrast, transactional leaders seem to reduce conflict because they look for expedient compromises that are rewarding. However, Doucet, Poitrasa and Chênevert (2009) reported that transformational leadership was able to reduce relational conflicts, while for transactional leadership no such results were found.

Leadership styles could also have an impact on subordinates' individual outcomes, such as burnout and work engagement, a motivational state considered by some authors as the opposite of burnout (González-Romá, Schaufeli, Bakker, & Lloret, 2006). Zopiatis and Costantis (2009) found that the transformational leadership style was protective against burnout. In particular, transformational leadership was positively correlated with personal accomplishment and negatively with emotional exhaustion and depersonalization, while transactional leadership had a negative but weak correlation with emotional exhaustion and depersonalization. Furthermore, a mixed methods study of Elshout, Scherp and van der Feltz-Cornelis (2013) found

a positive association between transactional leadership style and lower levels of employee satisfaction, as well as higher sickness absence rates, in contrast to the transformational leadership style. On the other hand, Breevaart, Bakker, Hetland and Demerouti (2014) reported that cadets on a sail ship were more engaged when their leaders both showed more transformational leadership and provided contingent reward (which is the first and most effective component of transactional leadership).

There are also few studies on the relationship between leadership style and general well-being of individual employees. For example, Guglielmi, Simbula, Mazzetti, Tabanelli and Bonfiglioli (2013b) found that higher levels of transformational leadership were associated with less general dysphoria (which refers to anxiety and depressive symptoms) through the mediation of work engagement, although no significant correlation was found between transformational leadership and general dysphoria.

In order to understand the role played by transformational and transactional leadership styles on work team dynamics and individual outcomes, it has been hypothesized that:

Hypothesis 1. Leadership styles would affect both work team characteristics and individual health, especially:

Hypothesis 1a. Transformational leadership style would positively affect social support, work engagement and general health; and negatively affect conflict and burnout.

Hypothesis 1b. Transactional leadership style would positively affect social support, work engagement and general health; and negatively affect conflict and burnout.

Measurement challenges

Studying leadership style also poses measurement challenges. The first studies on leadership styles were conducted by interviewing leaders (e.g. Bass, 1985), but most since have

measured leadership style by what supervisees think about their own supervisor. Other constructs strictly related to leadership style and the relationship with the members of a group, such as the leader-member exchange construct (LMX; e.g. Li, Shang, Liu, & Xi, 2013), are also usually measured through supervisees' perceptions. To the best of our knowledge, there are no studies that investigated leadership style by directly comparing leaders' and subordinates' perspectives on how supervisors concretely behave in the workplace.

What the literature has not embraced yet is the possibility that the measurements of leadership style from employees and supervisors might differ in value. This difference or disagreement is important because previous studies obtained data from only one or the other source. Either of these approaches disregards the possibility that the disagreement or difference in values represents a more dynamic interplay between supervisors and subordinate in which the leader self-image of the former is contrasted with the appreciation of the observed image by the latter. Therefore, it has been hypothesized that:

Hypothesis 2. The amount of disagreement between supervisors' self-rating and supervisees' ratings with respect to the leadership style would affect both team work characteristics and individual health, especially:

Hypothesis 2a. Disagreement on transformational leadership style would negatively affect social support, work engagement and general health; and positively affect conflict and burnout.

Hypothesis 2b. Disagreement on transactional leadership style would negatively affect social support, work engagement and general health; and positively affect conflict and burnout.

The role of work environment

Findings from the literature suggested that generally there is a positive impact of transformational leadership style on individual and work team outcomes, while the impact of transactional style seems to be more uncertain.

One reason for the disagreements in results cited above may be that the effect of leadership style or other associations are not absolute but instead are affected by contextual factors, such as economic sector, or even macro-level dynamics such as whether the economy is expanding or contracting. As noted by Pearce and Herbik (2004) researchers have long considered team size as an important issue in research on teams, as larger teams may result in greater psychological distance among individuals. For example Yang, Huang and Wu (2011) found that in the condition of high collaboration, small (< 16 members) and medium team size (16-45 members) reported higher levels of overall project performance than large work teams (> 45 members). In line with these findings, it has been hypothesized that:

Hypothesis 3. There is a difference on leadership style, work-team dynamics and individual outcomes between employees working in different work team size.

Furthermore, aiming to understand the role played both by the work environment and the disagreement on leadership styles between supervisors and their supervisees, it has been hypothesized that:

Hypothesis 4. Work team size and disagreement on leadership styles (transformational and transactional) might have an effect on both work team characteristics and individual outcomes.

Methods

Research design and Study population

A cross-sectional study was conducted in four companies of a large retail corporation located in Northern and Middle Italy. In order to analyse the role played by the work team size, supermarkets spread over all the territory, of two different sizes (small and medium), were chosen. The size of the supermarket was obtained from company records. Small supermarkets were those with an area up to 1.000 square meters; medium supermarkets had an area between 1.000 and 2.500 square meters. The organizational structure of these companies allowed to distinguish between small and medium supermarkets (based on supermarket's area and consequently number of workers). The participants were recruited by job group in proportion to the percentage distribution of job positions within the entire organization. Each supermarket has one overall supervisor (manager), so that is equivalent to a supervisor's group of employees, defined here as a 'team'. Data were collected through a questionnaire, which included questions related to the name of the supermarket and the role of the workers, in order to ensure the nested structure of the data. A questionnaire was completed for each participant (worker or supervisor) with the assistance of a researcher during a face-to-face interview within the workplace, which usually took about half an hour. During this short meeting, the researcher explained the project and then asked the questions.

Measures

The questionnaire was composed of scales on leadership styles, work team and individual characteristics. To measure leadership style as transformational and/or transactional (not mutually exclusive), two different subscales were used.

Transformational leadership. Measured as individualized consideration by the Multifactor Leadership Questionnaire (MLQ-5; Bass & Avolio, 2000), using the four items for this dimension, all scored on a Likert scale that ranges from ‘1’ (totally disagree) to ‘5’ (totally agree). One example item of this dimension is ‘Treats each of us as individuals with different needs, abilities, and aspirations’. Items were then averaged. This subscale has been chosen because empirical evidence indicates ‘individualized consideration’ as the most influential component of leadership behaviour in the workplace (cf. Sarros, Gray, & Densten, 2002). Furthermore, individualized consideration has been defined by Bass as the style which occurs when a leader pays attention to the differences among supervisees and discovers what motivates each individual (Rafferty & Griffin, 2006). In addition, these authors stated that individualized attention allows leaders to become familiar with supervisees, enhances communication, and improves information exchange. Therefore, this dimension appears as the most appropriate to study the disagreement between supervisors and employees as it focuses on the individual relations between the two parties. In fact, in a recent study by Tse and Chiu (2014), individualized consideration was considered as individual-focused, which means that it aims to influence each employee by considering his or her unique features.

Transactional Leadership. Measured by MLQ-5 items about contingent rewards (Bass & Avolio, 2000), with a Likert scale that ranges from ‘1’ (totally disagree) to ‘5’ (totally agree). One example item of this dimension is ‘Expresses his/her satisfaction when I do a good job’. Items were then averaged. Contingent rewards dimension has been chosen as it is considered as more strictly related to the transactional leadership construct than the other subscales (Avolio, Bass, & Jung, 1999). One item of this subscale was removed upon request of the corporate

management, thus the scale was composed by three items; statistical implications will be discussed in the results section.

Conflict with colleagues. The level of relational conflict in the workplace was measured by 4 items extracted from the conflict scale of Amason (1996). One example item is ‘there are conflicts between members of the work team’ Each item ranged from ‘1’ (totally disagree) to ‘4’ (totally agree) and the average of these was used.

Social Support. Measured with a four-item scale that ranges from ‘1’ (totally disagree) to ‘4’ (totally agree) from the Job Content Questionnaire (JCQ) developed by Karasek (1985; Italian validation by Cenni & Barbieri, 1997). One example item is ‘People I work with are helpful in getting the job done’. Again the average score was used.

Concerning the measure of individual characteristics, burnout and engagement dimensions have been chosen, both of which have important implications for workers’ stress and health, as noted above. Those variables are widely used, for example in the Job Demands-Resources Model developed by Demerouti and colleagues (2001). Individual general health measure has also been included.

Burnout. Measured as emotional exhaustion, which is the basic individual stress dimension of burnout, referring to ‘feelings of being overextended and depleted of one’s emotional and physical resources’ (Maslach, Schaufeli, & Leiter, 2001, p. 399). Emotional exhaustion was measured using that scale of the Maslach Burnout Inventory (MBI) (Schaufeli, Leiter, Maslach, & Jackson, 1996; Borgogni, Galati, & Petitta, 2005). One example item is ‘I feel emotionally drained from my work’. The 5 items were scored on a 7-point frequency Likert scale (0= ‘never’ to 6=‘every day’) and then summed.

Job engagement. It is a multidimensional construct defined as a positive, fulfilling, work-related state of mind characterized by vigor (energy and mental resilience while working), dedication (sense of enthusiasm) and absorption (being fully concentrated on work) (González-Romà, et al., 2006). In this study the short version of the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006); Italian version by Balducci, Fraccaroli, & Schaufeli, 2010) was used, consisting of three items for each dimensions: vigor, dedication and absorption. One example item is ‘At my work, I feel bursting with energy’. All nine items were scored on a 7-point scale ranging from ‘0’ (never) to ‘6’ (always) and then averaged.

General Health. General health was measured by the Italian version of the GHQ-12 (General Health Questionnaire; Goldberg 1992; Italian version by Fraccaroli and Schadee, 1993). It is composed of two main dimensions: general dysphoria (items related to anxiety and depressive symptoms) and social dysfunction (relating to the performance of daily activities and self-evaluated coping ability). One example item is ‘been thinking of yourself as a worthless person?’ Each item was rated on a 4-point scale ranging from 0 (never) to 3 (always), and then averaged. Higher scores indicate poorer general health.

Statistical analysis

SPSS version 20.0 was used to analyse the data. Pearson correlation coefficients and Cronbach’s Alpha coefficients have been computed in order to assess internal consistency.

Disagreement between Supervisors and Workers (DSW) has been defined by comparing the answers to corresponding questions asked to each group. For example, the supervisors rated the item ‘I spend time teaching and coaching my supervisees’, while the workers answered ‘My supervisor spends time teaching and coaching me.’ Thus, for each worker the following formula has been calculated:

$$DSW = |\text{score reported by the supervisor} - \text{score reported by the worker}|$$

Absolute value of DSW has been chosen, since the main interest was not in the fact that the supervisor perceives him/herself better or worse with respect to the workers but the magnitude of any disagreement between ratings.

To test Hypothesis 1 and 2, simple linear regression analyses were performed separately to test the effect of each leadership style (transformational and transactional) and the DSW of leadership styles (transformational and transactional) on the work team variables (conflict between the members of the group and social support) and the individual variables (burnout, engagement and general health).

To test Hypothesis 3, analysis of variance (ANOVA) was used to investigate whether there were any differences related to the size of the supermarkets.

In order to test Hypothesis 4, multilevel analyses were performed to test the impact of DSW of leadership styles and supermarket size on each individual and group outcomes, clustering on supermarket as the higher-level construct. Gender, age and organizational seniority were included in the models. To account for workers' dependence on their own supervisors, we computed the intraclass correlation coefficient (ICC; Hox, 2010), which is a group homogeneity measure referring to the correlation among the members of the group (in our case the group is composed by the workers of each supermarket), relative to the difference among groups (i.e. the 24 supermarkets). It is based on the assumption that the more the workers share common experiences, the more they are similar. The ICC formula is:

$$ICC = (\text{variability between groups}) / (\text{variability within groups} + \text{variability between groups})$$

Results

Participants, descriptive analysis and correlations

Participants of this study were 492 in total (68.9% were females), working in 24 supermarkets. The average age was 40.7 years ($SD = 8.2$) and the average seniority was 13.8 (9.3). There were 24 supervisors and 468 employees, for a mean of 19.5 employees per supermarket ($SD = 14.2$). There were 369 employees working in 14 medium supermarkets (mean of employees interviewed: 26.4; $SD = 14.9$) and 99 employees working in 10 small supermarkets (mean of employees interviewed: 9.9; $SD = 4.3$). Results presented in table 1 show descriptive statistics and correlations between variables. Concerning transformational and transactional leadership styles, they had almost the same mean value and standard deviation, showing that the supervisors in this sample were about equally likely to use both styles simultaneously, while there was a bigger difference between the two leadership styles in DSW size. Although one item of the transactional leadership subscale was deleted upon request of corporate management, the Cronbach's Alpha value of this dimension was good (.71). All the alpha values met the threshold of .70 except for the social support, which was still very close to the value suggested by Nunnally & Bernstein (1994). All of the correlation coefficients were in the expected direction. Of note, the direction of the relationships between leadership styles and work group and individual outcomes were generally similar for transformational and transactional leadership styles but the magnitude of the coefficients were quite different in some cases. In fact, bigger differences could be found between DSW and outcomes comparing the two leadership styles.

Table 1 - Descriptive statistics, Pearson correlation coefficients, and Cronbach's Alpha (N=468)

Variables	M	SD	α	1	2	3	4	5	6	7	8	9	10	11	12
1.Gender ^a	.30	.46	-	-											
2.Age	40.50	8.20	-	-.01	-										
3.Tenure	13.45	9.21	-	.10*	.66***	-									
4.Size ^a	.21	.41	-	-.03	-.04	-.03	-								
5.Transf.	3.55	1.06	.81	.04	-.08	-.10*	-.14**	-							
6.Transac.	3.63	1.02	.71	.04	-.10*	-.09	-.14**	.77***	-						
7.DSW Transf.	1.17	.96	-	-.04	.08	.10*	.10*	-.91***	-.71***	-					
8.DSW Transac.	.95	.76	-	-.02	.07	.03	.05	-.52***	-.66***	.59***	-				
9.Conflict	2.76	.99	.75	-.03	-.06	.04	.09*	-.32***	-.32***	.29***	.19***	-			
10.Social Support	3.16	.56	.69	.09*	-.03	-.05	-.03	.29***	.33***	-.27***	-.20***	-.47***	-		
11.Burnout	13.75	7.51	.85	-.10*	.14**	.16***	.11	-.26***	-.25***	.20***	.09*	.27***	-.23***	-	
12. Work engagement	4.80	1.05	.89	.03	-.090	-.18***	-.11*	.42***	.38***	-.37***	-.20***	-.31***	.28***	-.43***	-
13.General Health	.90	.45	.86	-.19***	.071	.07	.12**	-.23***	-.21***	.19***	.10*	.26***	-.17***	.47***	-.35***

Notes. *p<.05; **p<.01; ***p<.001

^a Male=1; 29.9%; ^b Medium=1; 78.8%

In particular, the relationship between DSW of transactional leadership style and outcome considered (work team and individual variables) reported generally lower correlation coefficients respect to the relationships between DSW of transformational leadership style and the outcome considered.

Impact of leadership styles and DSW of leadership styles on work team and individual variables

Transformational and transactional leadership each had positive associations with social support and engagement and negative associations with conflict, burnout and general health (table 3), thus Hypothesis 1 (both H1a and H1b) is confirmed. Also disagreement on transformational and transactional leadership style are related to conflict, social support, burnout, engagement and general health, thus Hypothesis 2 (both H2a and H2b) is confirmed. This means that disagreement between supervisor and supervisees could enhance conflicts and decrease the social support in the work team. Furthermore, the disagreement on leadership styles has an effect at the individual level, as it affects burnout, engagement and general health. This relationship is stronger between disagreement on transformational leadership style respect to the disagreement on the transactional leadership style especially for its effect on burnout and general health.

Table 2 - Separate linear regression analyses. Impact of leadership styles and DSW leadership styles on work team and individual outcomes (n=468)

	Conflict	Social Support	Burnout	Engagement	General Health
Main Effects	β	β	β	β	β
Transformational leadership	-.32***	.29***	-.20***	.42***	-.23***
Transactional leadership	-.32***	.31***	-.25***	.38***	-.21***
DSW Transformational Leadership	.29***	-.27***	.20***	-.37***	.19***
DSW Transactional Leadership	.19***	-.23***	.10*	-.20***	.10*

Notes. *p<.05; **p<.01; ***p<.001

Differences between working in a small or in a medium work team

ANOVA results (table 3) showed that there are some differences between medium and small work team. Concerning leadership styles, employees working in small work teams perceived their supervisors as more transformational and transactional compared to their working in medium work teams. Concerning DSW on leadership styles, a higher disagreement as been found in medium work teams respect to small work teams. On the contrary, no differences on disagreement on transactional leadership style have been found. Regarding work team characteristics, employees working in small work teams perceive lower levels of conflict respect to their colleagues working in medium work teams. Furthermore, employees working in small work teams reported lower levels of burnout, general health and higher levels of work engagement. No differences were found on social support between employees working in small and medium work teams, thus, Hypothesis 3 was partially confirmed.

Table 3 – Analysis of variance.

Differences between people working in medium and small work team size (n=468).

Variables	Medium	Small	F	p
Transformational Leadership	3.47 (1.09)	3.83 (0.86)	9.02	.003
Transactional Leadership	3.56 (1.02)	3.90 (0.94)	8.82	.003
DSW Transf. Lead.	1.22 (1.00)	1.00 (0.76)	4.17	.042
DSW Transac. Lead	.97 (0.78)	.87 (0.68)	1.36	.244
Conflict	2.82 (0.97)	2.59 (1.04)	4.25	.040
Social Support	3.15 (0.56)	3.19 (0.58)	.40	.529
Burnout	14.18 (7.28)	12.13 (8.16)	5.89	.016
Engagement	4.74 (1.03)	5.03 (1.07)	6.04	.014
General Health	.93 (0.46)	.79 (0.43)	6.86	.009

Impact of DSW leadership and work team size on work team and individual variables including clustering effect

According to the fourth hypothesis and to the fact that many differences has been found between employees working in small and medium work teams, the role played by DSW on leadership styles and the size of work teams on both work team and individual variables have been analysed through a multilevel analysis. In order to analyse the role played by clusters, the ICC coefficient has been computed. The numeric value of the intraclass correlation tends to be small and positive very frequently (Zyzanski, Flocke, & Dickinson, 2004). Furthermore, several authors provided guidelines for interpreting the magnitude of the intraclass correlation with small, medium, and large values of the intraclass correlation coefficients reported as .05, .10, and .15 (Hox, 2002).

Table 4 – Multilevel Analysis. Impact of DSW leadership styles and supermarket size on work team and individual variables considering clustering (n=468)

Variables	Work team characteristics				Individual characteristics					
	Conflict		Social Support		Burnout		Engagement		General Health	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
DSW transf.	.31***	.06	-.15***	.03	1.63***	.44	-.04***	.06	.09**	.03
DSW transact.	.04	.07	-.03	.04	-.043	.54	.04	.07	-.01	.03
Size ^b	.19	.20	-.02	.10	2.00	1.4	-.22	.14	.11	.06
Gender ^a	-.06	.09	.10	.05	-1.86*	.72	.05	.10	.18***	-.04
Age	-.02*	.01	.00	.00	.04	.05	.01	.01	.00	.00
Tenure	.01*	.01	-.00	.00	.09	.05	-.02**	.01	.00	.00
ICC	16.62		10.57		12.19		5.19		2.04	

Notes. *p<.05; **p<.01; ***p<.001;

^a Male=1; 29.9%; ^b Medium=1; 78.8%

Results presented in table 4 showed a strong clustering – which means that the between-groups variability is bigger respect to the variability within groups - concerning the effect on conflict. In other words, each group of workers belonging to the same supermarket had more in common with each other, concerning this variable, than with workers in other supermarkets. A moderate level of clustering was found for social support, burnout and work engagement, while a low clustering effect for general health was found. Furthermore, multilevel analysis showed that disagreement on leadership style has an effect on all the variables considered. On the contrary, disagreements on transactional leadership and size of the work team have no effect on the variables considered.

Discussion

In this moderately large study of supermarket workers and their supervisors, attention has been given on how leadership style and discordant perceptions of supervisors from their supervisees were associated with work team dimensions, such as social support and conflict, and individual outcomes such as burnout, engagement and general health. The effect of work team – measured in terms of small vs. medium-size supermarkets - has also been studied, to assess how this could affect team work and individual variables concerning workers' well-being.

According to this, the results of the third hypothesis – which posits that there is a difference between small and medium work teams in leadership styles, work team variables and individual variables - showed that there were some differences between small and medium supermarkets concerning both leadership styles and work team and individual variables. Concerning leadership styles, people working in small supermarkets perceive their supervisors as more transformational and transactional, although there was no difference on the disagreement of transactional leadership. Overall, work team variables and employee health indicators, were more favourable in small compared to medium-sized supermarkets,

except for social support, which showed no significant differences. The low level of variability of social support could explain this result.

These findings suggest that the proximity between supervisor and their supervisees (due to the smaller workplace) could decrease the DSW only concerning the transformational leadership, which refers to all the leader's behaviours aiming to inspiring and stimulating the workers. The fact that no difference was found between people working in small and medium supermarket on the DSW of transactional leadership could be explained by the fact that transactional leadership is related to contingent reinforcements to the workers which could be more explicit respect to the inspiring behaviours of the supervisor. In other words, it is more likely that people better understand each other when talking about contingent rewards respect to how a leader effectively motivates and inspires each supervisee. According to this, there were higher levels of DSW of transformational leadership respect to disagreement on transactional leadership.

Concerning the role of leadership, although no direct causal links can be proved by this cross-sectional research, results suggest that both leadership styles (transactional and transformational) and the DSW of both those leadership styles separately influence work team variables (enhancing social support and reducing the conflict between workers), as well individual variables (enhancing engagement and general health, and reducing burnout).

However, in multilevel analysis that accounted for size of the work team, only transformational leadership showed an effect on all these outcomes, meaning that would be the disagreement between how supervisors think they behave and how their supervisees perceive their style on transformational leadership will have the strong influence on the work team and the individual well-being. Therefore, although as shown by the means of transformational and transactional leadership styles supervisors actually seemed to behave

both as a transformational and a transactional leader, is the transformational leadership style that might really positively influence both work team and individual health.

In particular, the higher the disagreement between how leaders perceive themselves and what their supervisees think about their leadership style, the more the supervisees tend to perceive negative outcomes concerning both work team (low social support and higher level of conflict), and individual well-being (higher level of burnout and lower level of engagement and general health).

This relationship is especially true for conflict, social support and burnout levels, where the values of the clustering index (ICC) were higher. This result means that people working in the same workplace (i.e. the same supermarket) reported similar levels of conflict, social support and burnout, and that those levels mainly depends on the disagreement between how supervisors report they behave as transformational leaders and how their supervisees perceive them.

These results highlight that not only the level of leadership style as perceived by the workers is important, but also that the fact that workers have a similar perception of the leadership behaviours as their supervisor is relevant. If supervisors fail in estimating how supervisees perceive/describe/assess their style as a leader, that disagreement has a negative impact at both work team and the individual. Furthermore, following Weick's construct of 'sensemaking' (cf. Weick, 1990), DSW about leadership style is very similar to a failed shared sensemaking. As reported by Weick, systems tend to become less reliable when operators do not share a compatible (even not identical) description of facts, events and behaviours. When shared sensemaking fails (no matter the causes), inefficient and unsafe behaviours become more frequent. Although data used in this study do not deal with safety, it seems that Weick's suggestion may be useful to understand why DSW has been found related to unfavourable outcomes. Further research would explore which could be the possible causes

of the development of this disagreement between supervisors and workers and how this disagreement could be reduced in order to have more efficient work teams and healthy workers.

Finally, lower levels of clustering (i.e. lower levels of correlations between members belonging to the same supermarket) have been found for the relationship between DSW of leadership styles and general health. This could be explained by the fact that general health of the individuals could be affected also by other personal factors or situations not strictly related to the workplace context (e.g. family problems, individual characteristics).

Strengths and limitations

This study presents some limitations. A first limit concerns the cross-sectional design of the study, which prevents to establishing the direction of the hypothesized causal relations or reversed causal hypothesis. Consequently, there is a need for more longitudinal studies so that the causal relationships can be further investigated. Secondly, data collected derived from self-report questionnaires increasing the chances of common method variance effects (P.M. Podsakoff, Mac Kanzie, Lee, & Podsakoff, 2003). In the future other type of measurement could be used to avoid this problem. One example could be the direct observations of the leaders' behaviours through checklists. Another limitation is the fact that the study was conducted in companies belonging to the same corporation, thus other studies should be conducted in other organizations also not related to the retail sector.

This study also has some strengths. One of the most important is that by rewording the questions it has been possible to compute a closely corresponding measure of disagreement between supervisors and their supervisees and this is the first study, which uses this kind of measure of disagreement. In addition, supermarkets' workers were randomly selected to participate in the study so it is possible to reject some possible selection bias.

Practical implications

Concerning the practical implications, results of this study suggested that if this discordance itself has an impact, beyond that of the absolute rating of leadership, then it may be important to intervene not only on supervisors' leadership style (for example proposing behavioural changes to the supervisor) but also on the relationship between supervisors and their supervisees in order to decrease the disagreement between them.

Furthermore, results concerning the differences between small and medium work teams suggest that also in big companies, an organizational structure composed by small groups could result in higher levels of social support, job engagement and general health and in lower levels of conflict and burnout.

Conclusion

In conclusion, future studies on leadership should focus not only on how much a given leadership style is a transactional or a transformational one, but also on the extent of common perceptions about leadership style between leader and supervisees. Interventions dealing with the possible disagreement between how supervisors perceive themselves and what their supervisees think about them could lead to a better work climate in the workplace, in terms of less conflict and an enhanced social support. Workers would also benefit from this, since less emotional exhaustion and more engagement also seem to be related to such coherence of perception.

Chapter 2

How job demands affect absenteeism?

The mediating role of work-family conflict and exhaustion¹

Introduction

Working conditions in modern society are characterised by increasing psychosocial risk factors, such as job demands, in facing daily work activities. These demands could lead to consequences affecting both the worker (e.g. adverse health conditions, including depression), and the organisation (i.e. sickness absence) in terms of decreased organisational productivity (Cooper, Liukkonen, & Cartwright, 1996; Sutherland & Cooper 1990).

For example, a study conducted by Stewart, Ricci, Chee, Hahn and Morganstein (2003) reports that, among workers in the United States, the average depression-related absenteeism productivity loss is almost 1 hour every week, which is equivalent to almost 8.3 billion dollars US. Also in the European context, the European Foundation for the Improvement of Living and Working Conditions (European Foundation for the Improvement of Living and Working Conditions [Eurofound], 2012) claims that absenteeism produces high costs for society in terms of lost productivity, and puts a burden on most social security systems.

Looking at the relationship between psychosocial risk factors and a) workers' health, b) sickness absence within organisations, and, increasingly, c) public health issues, the work-family interface plays a central role. The interface of work and family life, in relation to workers' health and wellbeing, has become a topic of growing prominence (Clays, Kittel, Godin, De Bacquer, & De Backer, 2009), because work-family conflict (WFC) reflects the interaction between work and personal life (Wang, Schmitz, Smailes, Sareen, & Patten,

¹ The final publication is available at Springer via <http://dx.doi.org/10.1007/s00420-015-1048-8>. International Archives of Occupational and Environmental Health, 2015.

2010). In fact, in the 24/7 economy, employers often expect their employees to put in extra time and to take jobs with non-standard work schedules (Presser, 2005), which could have a strong negative influence on the work-family interface and workers' health (Olsen & Dahl, 2010). Also, the International Labour Organization (ILO) in 2003 highlighted the role of WFC as an emerging risk factor in the quality of working life (Gospel, 2003). Hence, the aim of this study is to better comprehend how job demands, work-family interface and workers' health could potentiate absenteeism in the workplace.

Job Demands-Resources Model and absenteeism

The relationship between psychosocial risk factors, workers' health and withdrawal behaviours has been studied comprehensively using various models. One of the most used is the Job Demands-Resources Model (Demerouti et al., 2001; Bakker & Demerouti, 2007; Bakker, Demerouti, & Sanz-Vergel, 2014), which has made its way into the literature, confirming the relationship between psychosocial characteristics and outcomes such as absenteeism (Demerouti et al, 2011). This model assumes that employees' wellbeing is related to a wide range of workplace characteristics classified into two overarching categories, namely job demands and job resources. Job demands refer to 'those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and/or psychological costs'. In contrast, job resources refer to 'those physical, psychological, social or organizational aspects of the job that a) are functional in achieving work goals, b) reduce job demands and the associated physiological costs, or c) stimulate growth and development' (Bakker, Demerouti, & Euwema, 2005, p. 170). This model represents a flexible instrument that enables researchers and practitioners to examine a wide variety of work-related factors that affect employees' wellbeing, thereby allowing the choice of these factors to be tailored to the specific occupational context under study (Bakker & Demerouti, 2007). Furthermore, this model

consists of two main processes: the health impairment hypothesis and the motivational hypothesis. The first hypothesis could be useful in understanding absenteeism in organisations, because it is strongly related to adverse mental health conditions, and postulates that high job demands (e.g. work overload) may increase the likelihood of burnout in workers and may therefore lead to further negative outcomes related to the depletion of energy and to health problems (Bakker, et al., 2003a). Specifically speaking, according to the health impairment hypothesis, perceived job demands could lead to job strain such as feelings of exhaustion, which are related to increased sickness absenteeism (Bakker et al., 2003a).

Although job demands are not necessarily considered as negative, they may become job stressors when meeting those demands requires considerable effort from which the employee does not sufficiently recover (Meijman & Mulder ,1998).

Many studies have demonstrated the relationship between specific job demands and poor health among workers. A recent study published by Shütte, Chastang, Malard, Parent-Thirion, Vermeylen and Niedhammer (2014), based on the European Working Conditions Survey 2010 and taking into consideration 25 psychosocial risk factors simultaneously, showed that 13 of these factors were significantly related to poor well-being between both genders. Two of those 13 were the quantitative demands factor and the work-life imbalance factor. Moreover, many studies (e.g. Bakker et al., 2003a) demonstrated the relationship between specific job demands and burnout measured with emotional exhaustion, which is the central component of burnout (Van Dierendonck, Schaufeli, & Buunk, 2001). Emotional exhaustion refers to ‘feelings of being overextended and depleted of one’s emotional and physical resources’ (Maslach et al., 2001 p. 399). The relationship between job demands and emotional exhaustion has been widely demonstrated among different occupational groups (Demerouti et al., 2001).

It has been suggested that sickness absence could be a coping mechanism to deal with stressful job demands, instead of merely a behavioural reaction to dissatisfaction (Johns 1997; Kristensen 1991). In fact, sickness absence could constitute a strategy to save energy, provide an opportunity for recuperation, and detach oneself from a stressful, non-rewarding, non-supporting, and conflictual work environment (Anagnostopoulos & Niakas, 2010). In the correlating literature, two different kinds of absenteeism are defined: voluntary and involuntary absenteeism. The first one is measured in terms of frequency, i.e. by the number of spells or times an individual has been absent during a specific period, irrespective of the length of each of those spells (Demerouti, Bouwman, & Sanz-Vergel, 2011). In contrast, involuntary absenteeism is measured in terms of duration, i.e. by the total length of time an individual has been absent over a specified period, regardless of the number of absence spells (Bakker, Demerouti, de Boer, & Schaufeli, 2003b). Bakker et al. (2003b) defined voluntary absenteeism as a function of employees' motivation, while involuntary absenteeism has been defined as the inability (rather than unwillingness) to go to work, as a result of illness or other exceptional circumstances. In that sense, according also to the studies of Bakker et al. (2003b) and Schaufeli, Bakker and van Rhenen (2009), which showed that absence duration is related to the health impairment hypothesis of the JD-R model, involuntary absenteeism (measured as absence duration) seems to be the right way to analyse the relationship between job demands and absenteeism.

Some studies have investigated the relationship between workers' health and absenteeism. Burnout levels are associated with higher absence rates (Anagnostopoulos & Niakas, 2010; Bourbonnais & Mondor, 2001); with respect to the health impairment process, antecedents of burnout (e.g. increasing workload) appear to have an impact on higher rates of sickness absence (Rauhala et al., 2007), while job demands are predictors of burnout and indirectly of absence duration (Bakker et al., 2003b).

Work-family conflict

As recently demonstrated (Schütte et al., 2014), WFC is one of the key factors that could lead to poor mental well-being. Work-family conflict is defined as ‘a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect’ (Greenhouse & Beutell, 1985, p. 77). In other words, the participation in one role is more difficult because of concurrent participation in the other role (Proost, H. De Witte and De Witte, & Schreurs, 2010).

However, if work-family conflict is a central construct in the occupational health field, the corresponding literature is somewhat contradictory in respect of the role played by this variable in the health impairment process. Simbula, Mazzetti and Guglielmi (2011) considered WFC as a job demand that affect emotional exhaustion; Clays and colleagues (2009) considered WFC as an antecedent of sickness absence, mediated by environmental psychosocial factors, while Olsen and Dahl (2010) found associations between a particular job demand (working irregular working hours) and both sickness absence and work-family conflict, and furthermore, that working irregular working hours with no flexibility caused work-family imbalance. Moreover, also Grandey and Cropanzano (1999) investigated the effects of work role stressors on WFC. In their study, role stressors have been measured as role conflict and role ambiguity, which are considered two of the most important job demands in the JD-R model (Bakker et al., 2014).

Overall, the relationship between WFC and sickness absence is somewhat uncertain. The review on the outcomes of work-family conflict (Allen, Herst, Bruck, & Sutton, 2000) revealed the need for more research aimed at examining work-related behavioural outcomes such as absenteeism, because at the time there was only a handful of studies on the subject, whose results were inconsistent in describing whether there is a relationship between WFC and absenteeism. Other studies investigated the association between work-family conflict and

sickness absences, but, to date, the relationship is still not fully explained. For example, Jansen et al. (2006), in his longitudinal study, found that in both men and women there is evidence that WFC can be considered a predictor of sickness absence. Also, Donders (2005) found positive associations between work-to-family interference and repeated or extensive sick leave among Dutch university employees, both male and female. However, other studies suggested that there is no association between the work-home interference and sickness absence (e.g. Clays et al., 2009). More recently, a meta-analysis of Amstad, Meier, Fasel, Elfering and Semmer (2011) took into consideration the relationship between WFC and absenteeism, categorized as a work-related outcome. The results showed that WFC has an effect on absenteeism, although more research is needed.

Based on what has been said so far, there exists a clear need to better define the roles played by job demands, work-family conflict, and adverse mental health conditions (e.g. emotional exhaustion) in determining sickness absences using the Job Demands-Resources Model (in particular the health impairment hypothesis), which clearly defines how to analyse the relationships between those constructs. The current study aims to contribute to the extension of the JD-R model, through the investigation of the impact of job demands on absenteeism, by adding work-family conflict and emotional exhaustion as mediators operating in serial. Therefore, the main of this study is to better understand the entire process that links job demands to absenteeism, considering work-family conflict and emotional exhaustion as subsequent mediators of this relationship.

JD-R model has been studied with many extensions (Schaufeli & Taris, 2014), and some studies investigated the subsequent mediation in the JD-R model (e.g. Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2008; Guglielmi, Panari, Simbula, & Mazzetti, 2014). Thus, our first hypothesis is:

Hypothesis 1. Job demand will be positively related to absenteeism through the subsequent mediation first of work-family conflict and then emotional exhaustion.

Secondly, two exploratory hypotheses have been developed in order to understand the roles of work-family conflict and emotional exhaustion separately. The first one focuses on the role of emotional exhaustion, and practically tests the health impairment hypothesis:

Hypothesis 1a. Emotional Exhaustion mediates the relationship between job demands and sickness absence.

The second one is related to the role of work-family conflict in the health impairment hypothesis:

Hypothesis 1b. Work-family conflict mediates the relationship between job demands and sickness absence.

Methods

Participants and design

Data were collected on 245 Italian workers, who were participants in a project aimed to assess work-related stress in a logistics company located in Northern Italy. The main activity of the company is to deliver food and goods to grocery stores. The employees participated in the study voluntarily; 51.4% of them were female (mean age of 43.9 years; s.d. = 8.89) and 58.4% were married. Most of the workers have at least one child (60.8%). The mean occupational tenure was 14.64 years (s.d. = 10.07). Concerning the working hours, the reported mean number of working hours in a week was 38.06 (s.d. = 5.35). After an informative session on work-related stress, lasting 1 hour, the participants completed a questionnaire. The Human Resources department provided the data concerning sickness leave. To relate this data to the questionnaire data, a personal code was created to link the two together. As previously stated, high rates of work-family conflict could produce higher levels of absenteeism, corresponding to workers' potential use of sickness absence as a way to cope

with stressful conditions at work. Therefore, a longitudinal study with a six-month follow-up period was conducted. As indicated by Jansen and colleagues (2006), a follow-up period between WFC and sickness leaves should probably not be too long, because it is unlikely that WFC would influence absence behaviour after two years.

Measures

Data were collected both with subjective and objective measures. The former consisted of a questionnaire, composed of socio-demographic questions and four main scales measuring job demands, work-family conflict, emotional exhaustion and absenteeism.

Job Demands. Job demands were assessed using three items related to the effort perceived by the workers (Siegrist, Wege, Pühlhofer, & Wahrendorf, 2009; Italian validation by Zurlo, Pes, & Siegrist, 2010). Items were scored on a 4-point scale (1= totally disagree; 4= totally agree). One example item is ‘I have constant time pressure due to a heavy work load’.

Work-family conflict. WFC was measured with three items referring to the conflict experienced in the management of working and family life (Guglielmi, Paplomatas, Simbula & Depolo, 2011). Items (e.g. ‘My working hours prevent me from managing my private life in a satisfactory manner’) were scored on a 5-point Likert scale (1=totally disagree; 5=totally agree).

Emotional Exhaustion. Emotional exhaustion was measured with the emotional exhaustion dimension of the MBI-General Survey (Schaufeli et al., 1996; Borgogni et al., 2005). The 5-item scale was scored on a 7-point frequency Likert scale (0= never to 6= every day). One example item is ‘I feel emotionally drained by my work’.

Additionally, absenteeism has been measured with objective data, as self-reporting data on sickness absence may have drawbacks in terms of common method variance (Jansen et al. 2006).

Absenteeism. Absenteeism was measured as involuntary absenteeism, i.e. through the total length of time an individual has been absent over a specified period, regardless of the number of absence spells (Bakker et al., 2003b). Specifically, absenteeism has been measured as the number of days a worker has been absent during one year. The period of one year was chosen because it increases stability in the absence measures (Hammer & Lindau 1981).

The mean absence duration was 12.17 (SD = 19.9; min= 0; MAX = 106) and most of the participants (69.8% has been absent from work). Since absence duration showed a considerable skewness (2.44) and kurtosis (6.05), a log10 transformation was performed in order to approach a normal distribution (Aiken & West, 1991).

Furthermore, five confounding variables were included in the analysis. The first one was gender, as some authors (e.g. Frone, Russell, & Cooper, 1992) claim that, based on the gender-role socialisation theory, work-family interference would have greater impact on women. In addition, gender should be considered as a confounding variable in the relation between WFC and sickness absence, because of gender differences in employee absenteeism (Jansen et al. 2006). In addition, in line with the most recent meta-analysis on WFC outcomes (Amstad et al., 2011) parenthood and time spent at work have also been included as control variables. Parenthood refers to having at least one child. Also organizational role (i.e. being or not a supervisor) has been included as a control variable because supervisors usually have higher job demands. Moreover, also age has been included as a control variable.

Data Analysis

SPSS version 20.0 was used to analyse the data. Internal consistencies of the scales (Cronbach's α) used were computed and the scores ranged from .67 to .86.

The Preacher and Hayes analytical approach (2004) was used to test the hypothesis. This mediation approach tests the indirect effect between the predictor and the criterion variables through the mediator, using a bootstrapping procedure that addresses some

weaknesses associated with the Sobel test (Preacher & Hayes, 2004). The model most useful to test the research hypothesis was model 6, which consisted of SPSS macros for bootstrapping, with multiple mediators operating in serial (Hayes, 2012). To compute the direct and indirect effects, all path coefficients in the model were estimated concurrently. Furthermore, the bootstrapping procedure was used to compute formal statistical tests of the specific indirect effects. This method can produce an estimate of the indirect effect, including the 95% confidence interval. When the 95% confidence interval does not include zero, the indirect effect is significantly different from zero at .05 level. Furthermore, gender was introduced as a control variable.

Results

As defined before, the Preacher and Hayes analytical approach allows us to test the direct and indirect effects of the variables considered. Descriptive statistics, reliability analysis and Pearson correlations between variables are presented in table 1. Parenthood did not show a relationship with the variables considered in the main hypothesis, thus it has been excluded by the mediation analysis. Table 2 shows estimates of all the path coefficients, as well as indirect effects along with the 95% bias-corrected bootstrapped confidence intervals for the path estimates. Concerning the direct effects, high job demands appear to cause higher WFC and emotional exhaustion. WFC has an impact on emotional exhaustion and emotional exhaustion is positively related to absenteeism. Regarding the indirect effects (see always Table 2), the main Hypothesis (H1) suggested the possibility that work-family conflict and emotional exhaustion sequentially mediate the relationship between job demands and absenteeism. Thus, hypothesis was confirmed; in particular, the results indicate that job demands are associated with higher levels of work-family conflict and emotional exhaustion, which in turn is related to higher levels of absenteeism.

Table 1 - Descriptive statistics and Cronbach's Alpha (N = 245)

Variables	M	SD	α	1	2	3	4	5	6	7	8
1. Gender ^a	.47	.50	-	-							
2. Age	43.9	8.89	-	.07	-						
3. Time spent at work	38.06	5.35	-	.32***	.03	-					
4. Parenthood ^b	.61	.49	-	-.07	.34***	.02	-				
5. Role ^c	.22	.41	-	.27***	.13*	.49***	.10	-			
6. Job Demands	2.59	.74	.67	.06	.05	.22**	-.02	.28***	-		
7. Work-Family Conflict	2.49	.95	.69	-.01	.09	.23***	.03	.21**	.37***	-	
8. Emotional Exhaustion	14.46	7.32	.86	.01	.08	.04	-.06	-.04	.33***	.55***	.
9. Absenteeism	2.06	2.58	-	-.14*	.14*	-.22**	.09	-.24***	.01	.10	.39

Notes. *** p<.001; ** p<.01; * p<.05

^a Male=1; 47.9% ;

^b Having at least 1 child=1; 60%;

^c Supervisor=1; 21.6%

Concerning hypothesis 1a, in line with the health impairment hypothesis of the JD-R model, results show that emotional exhaustion mediates the relationship between job demands and absenteeism, thus also hypothesis 1a was confirmed. In contrast, Hypothesis 1b was not confirmed, as WFC does not appear to mediate the relationship between job demands and absenteeism. In addition, as demonstrated by these findings, gender, time spent at work and organizational role, have no notable effect on absenteeism, while age has a positive effect on it.

Table 2 - Path coefficients and Indirect Effects for Mediation Models (N=245)

	Path Coefficients			Indirect Effects	
	Absenteeism (AB)	Work- family Conflict (WFC)	Emotional Exhaustion (EE)	Estimate	Bias-Corrected Bootstrap 95% Confidence Interval
R	.50	.43	.60		
R ²	.25	.18	.36		
MSE	.30	.77	35.57		
F	10.80	10.18	21.67		
p	.00	.00	.00		
Job Demands (JD)	-.05 (.05)	.42 (.08)***	1.89 (.58)*		
Work-family Conflict (WFC)	-.04 (.05)		4.05 (.44)***		
Emotional Exhaustion (EE)	.03 (.01)***				
Gender ^a	-.11 (.08)	-.16 (.12)	1.00 (.83)		
Age	.01 (.00)*				
Time spent at work	-.01 (.01)	.02 (.01)*	-.06 (.09)		
Role ^b	-.21 (.11)	.18 (.17)	-3.76 (1.13)**		
Total				.11 (.03)	.06; .18
H1) JD → WFC → EE → AB				.06 (.02)	.03; .11
H1a) JD → EE → AB				.07 (.03)	.02; .13
H1b) JD → WFC → AB				-.02 (.02)	-.06; .02

Notes. *** p<.001; ** p<.01; * p<.05. Bootstrap confidence intervals were constructed using 5000 samples. Standard error in parentheses.

^a Male=1; ^b Supervisor=1;

Discussion

The present study focused on absenteeism in the workplace, using the health impairment hypothesis of the JD-R model. This model is useful to test the relationship between job demands, work-family conflict, emotional exhaustion, and absenteeism.

The findings highlight the added value of using the subsequent mediation analysis, which confirms the main hypothesis: job demands are associated with higher levels of WFC and emotional exhaustion, which in turn affects absenteeism. Furthermore, findings of the present study provide some interesting results. No direct association has been found between job demands and absenteeism. This is partially in line with the previous literature, which provided contradictory results concerning the association between job demands and absenteeism. Some studies did not show any positive association between job demands and absenteeism, as for example, Ishizaki et al. (2006) that found no clear relationship between job demands and sickness absences. Other studies (e.g. North et al., 1993; Smulders & Nijhus, 1999) showed an association between lower job demand and an increased risk of sickness absence. Furthermore, a study of Smulders and Nijhus (1999), demonstrated a significant negative association between job demands and sickness absences. These contradictory results and the lack of a direct association between job demands and absenteeism could be explained by the fact that positive effect of job demands on absenteeism is generally observed under favourable labour market conditions, where employees can choose between taking sick leave or changing jobs (Kondo et al., 2006); however, when the worker is strongly committed to the job, job demands may preclude taking sick leave (Kondo et al., 2006). Therefore, in situations where there are no favourable market conditions due to the economic crisis (as in this study), it could be difficult for workers to take sick leave, because of self-imposed and external pressures to perform their jobs to consistently high expectations. This explanation is supported by Eurofound (2012),

which indicated job insecurity as a risk factor that is often associated with absenteeism. In fact, Eurofound found that the higher the market pressures felt by individuals, the less these individuals would tend to take sick leave from the workplace. In addition, a study developed by Jansen and colleagues (2003) found that the relationship between WFC and sickness absence operates mainly through factors associated with the psychosocial work environment. This suggestion could also explain the lack of association illustrated in the direct effects results, where job demands are not related to absenteeism without the mediation effect work-family conflict and emotional exhaustion.

With respect to the present findings on the direct effects, a positive association between emotional exhaustion and absenteeism has been found, which is in line with previous studies on the subject, such as for example the study by Schaufeli and colleagues (2009) which found a relationship between emotional exhaustion and duration of sick leaves. This result is also in agreement with the stress reaction hypothesis and other studies (Iverson, Olekalns, & Erwin, 1998). In fact, emotional exhaustion has a direct impact on absenteeism, and mediates both the relationships between job demands and absenteeism, and between job demands and the subsequent mediation tested. In addition, results showed that work-family conflict has an impact on emotional exhaustion, but if emotional exhaustion is not considered, associations regarding an increase of sickness leave cases cannot be explained otherwise. This indicates also that sickness absences are not merely a sign of the adverse health effects of job stressors, but rather can be determined individually by the integration of several important factors, such as work environment peculiarities, the workers' individual health perceptions, and their coping possibilities (Kristensen, 1991).

Furthermore, as it could be expected from previous findings in the literature, work-family conflict was not directly related to absenteeism. This result is in line with previous research. In fact, as Demerouti et al. (2011) reported, work-family conflict seems to be

related to *subjective* absenteeism but is lessened when absenteeism is measured objectively, through analysis of company records. Regarding the confounding variable included, parenthood did not affect any of the variables studied, while time spent at work positively influenced work-family conflict. These results partially confirm the meta-analysis of Amstad et al. 2011 which found no moderation effect of parenthood and time spent at work on work-related outcomes (such as absenteeism).

Concerning gender, results of this study showed that, despite the gender-role socialisation theory (Frone et al. 1992), which postulates that the impact of WFC should be higher for women, no gender effect was found on the variables considered and the relationships studied. This highlights the fact that psychosocial factors in the workplace have far more bearing on workplace absenteeism with respect to gender.

Strengths and limitations

The first strength is that, in this study, both subjective (the compositional elements of the questionnaire) and objective (numbers of sickness leave cases) data were used. In the previous literature, absenteeism has often been studied subjectively, but the use of different kinds of measures is recommended in stress evaluation research, as investigating psychosocial risk factors using only subjective or objective measures could produce biased results, for example from personal interpretations of risk factors (Guglielmi et al., 2013a). In addition, Lidwall, Marklund and Voss (2009) postulated that, in studies aimed at investigating the relationship between work-family interference and sickness absence, both objective and subjective measures should be considered. Another strength of this study was the statistical analysis used (Preacher & Hayes 2004; Hayes, 2012), which overcomes bias related to the previous statistical analysis, and allows to use the subsequent mediation analysis and to analyse the roles played by the different variables in the process that leads to absenteeism. Moreover, despite many studies investigated the health impairment process of

the JD-R model, there is a lack of studies that considered the indirect effects through subsequent mediation as this study did. However, future research should investigate the health impairment process with multiple mediators operating in serial in a longitudinal way. Regarding the limitations of this study, objective measure has been used only for the outcome variable, but further research should focus also on testing these hypotheses with objective measures of the job demands variable. Furthermore, absenteeism was not controlled for its baseline. In fact, although other studies also did not consider sick leave at the baseline (e.g. Demerouti et al., 2011), future studies should introduce this variable in the analysis.

Moreover, despite some authors have considered duration of sickness leave as involuntary absenteeism, this study did not consider short-term and long-term sickness absences. Thus it is difficult to state with certainty whether duration of sickness leaves could be considered as involuntary absenteeism. Secondly, the formulated hypotheses focused only on the health impairment process of the Job Demand-Resources Model, but it is plausible to also hypothesized that the motivational process could help to better comprehend the absenteeism process.

Linked to this, as this study is cross-sectional, as independent and mediators has been measured at the same time with sickness leave related in a longitudinal way, future studies should also consider how work-family conflict could harm workers in the short and in the long period. Furthermore, another limitation of the study is that it has been conducted only in the logistic sector.

Practical implications

Absenteeism in the workplace is an occupational health-related issue. These findings have important implications for organisations that aim to reduce costs related to absenteeism, and improve productivity by changing the psychosocial work environment and, consequently, workers' mental health conditions. These results confirm the hypothesis of a relationship

between poor mental health (measured as emotional exhaustion) and absenteeism. This suggests that interventions aiming to reduce absenteeism should focus not only on the reduction of job demands and WFC, but also on the relationship between WFC and emotional exhaustion. For example, interventions should focus on how to jointly manage job demands and WFC, in order to not affect the workers' emotional exhaustion levels. Moreover, based on these results that showed the mediating role of emotional exhaustion in determining absenteeism, when job demands and work-family conflict couldn't be modified stress management interventions should focus directly on emotional exhaustion.

Chapter 3

Workplace Phobia and the Job Demands-Resources Model.

First findings in the organisational context.

Introduction

Anxiety related problems at work are a serious problem concerning the occupational context. Last survey conducted by the Anxiety Disorders Association of America (ADAA, 2006), highlighted how stress and anxiety are related to workplace. Indeed, anxiety at work could influence workplace performance, relationship with co-workers and peers, quality of work and relationship with superiors. Furthermore, workplace could affect anxiety through pressure about deadlines, interpersonal relationship and dealing with issues or problems that could arise during the performance of work activities. Concerning the relationship between anxieties and work, the concepts of ‘workplace-related anxieties’ and ‘workplace phobia’ appear as new clinical concepts (Muschalla, 2009).

Particularly, workplace phobia is the most severe form of workplace-related anxiety. Muschalla (2009) provided a definition of this anxiety disorder, which ‘is characterized by a classical phobic anxiety reaction concerning the stimulus workplace. It occurs with panic-like reaction with physiological arousal when thinking of the workplace or approaching. The person shows clear avoidance behaviour towards the workplace. Due to the symptoms, there must be severe subjective suffering and/or impairment carrying out daily duties at work’ (Muschalla, 2009, p.46).

Furthermore, as reported by Muschalla and Linden (2014), referring to the Diagnostic and Statistical Manual for Mental Disorders V (DSM-V; American Psychiatric Association, 2013), workplace phobia can be coded among the anxiety disorders, particularly as a specific phobia (300.29, F40.298). Using a differential diagnostic approach, it has been demonstrated

that workplace-related anxieties can be distinguished from conventional anxiety disorders (Linden & Muschalla, 2007). Haynes, Williams, & Carson (2002) published the first experimental study that demonstrated the occurring of workplace phobia. The aim of their study was to determine whether a group of people who exhibited avoidance in the workplace could be identified in terms of their psychological and physiological responses to stressful work events. The criteria for workplace phobia diagnosis in the study by Haines et al. (2002) were: a) self-reported intensive fear when approaching or passing the workplace; b) inability to enter the workplace because of severe anxiety symptoms; c) reduction of symptoms when leaving the workplace. Results showed that all participants reported an increment of psychophysiological arousal and psychological response to stressful work events in comparison with neutral events. Moreover, the work-phobic group reported higher heart rate response and subjective reports of fear that distinguished them from the other groups.

Besides this, other studies (e.g. Linden & Muschalla, 2007; Muschalla, 2008) found that workplace-related anxiety and workplace phobia are different respect to conventional anxiety disorders (Muschalla, 2009). Workplace phobia is also considered as different respect to other concepts usually studied in the organizational psychology field, as mobbing or burnout. As a matter of fact, mobbing refers to negative behaviours carried out frequently and over a prolonged period of time, usually against an individual employee by his or her colleagues or superior (Einarsen, Hoel, Zapf, & Cooper, 2011). Burnout could be considered different respect to workplace phobia as burnout is defined as a syndrome characterized by emotional exhaustion, cynicism and reduced professional efficacy (Schaufeli et al., 1996). Thus, both mobbing and burnout are different respect to workplace phobia, which is a phobic anxiety syndrome characterized by physiological arousal when confronted with the stimulus workplace in vivo or in sensu and a tendency for workplace avoidance (Muschalla, 2009).

In the literature, antecedents and consequences of workplace phobia has been defined.

Concerning the antecedents, Muschalla (2009) provided a model concerning the aetiology of workplace phobia. This model posited that four factors (conventional mental disorder; workplace-related releases; not-workplace-related events, psychosocial stressors and personality and individual mental and physiologic disposition) could lead to the development of work-related anxieties and eventually workplace phobia. Concerning the psychosocial stressors, as reported by Muschalla and Linden (2009) workplaces could contain factors, which could provoke anxiety, as for example, demands for achievements, which may provoke generalized worrying and existential. For example, perception of high workload could be one aspect strictly related to the degree of perceived workplace-related anxiety (Muschalla, 2008).

Regarding the consequences of workplace phobia, the most important one is the agoraphobic symptomatic with avoidance of public places, as the fear is to be confronted with workplace-associated stimuli (e.g. colleagues or superiors), but also objects or places which remind the person of the workplace (Muschalla, 2009). Another consequence of workplace phobia, based on the fact that avoidance is the most important criterion of phobic anxiety disorders (Haines, 2002), is absenteeism, especially long-term sick leave (Muschalla & Linden, 2009). The relationship between workplace phobia and absenteeism has been demonstrated by a study of Muschalla (2008), who found that the longer is the sick leave, the higher is the probability to suffer from workplace phobia (Muschalla, 2008).

As reported in the second study of this thesis, it has been suggested that sickness absence could be a coping mechanism to deal with stressful job demands, instead of merely a behavioural reaction to dissatisfaction (Johns, 1997; Kristensen 1991). In fact, taking sick leave could represent a worker's strategy to save energy, provide an opportunity for recuperation, and detach oneself from a stressful, non-rewarding, non-supporting, and conflictual work environment (Anagnostopoulos & Niakas 2010). As previously described, in

the literature absenteeism has been categorized in two main typologies: voluntary and involuntary absenteeism. Bakker et al. (2003b) defined voluntary absenteeism as a function of employees' motivation. On the contrary, while involuntary absenteeism has been defined as the inability (rather than unwillingness) to go to work, as a result of illness or other exceptional circumstances. The first one is measured by the number of spells or times an individual has been absent during a specific period, irrespective of the length of each of those spells (Demerouti et al., 2011), while involuntary absenteeism is measured by the total length of time an individual has been absent over a specified period, regardless of the number of absence spells (Bakker et al., 2003b). Consistently with that, workplace phobia should be related to voluntary absenteeism. This argument is supported also by the study conducted by Muschalla and Linden (2014), which showed that individuals with workplace phobia had longer durations of sick leave respect to patients without workplace phobia.

The Job Demands-Resources Model

Despite the fact that workplace phobia is related to a specified place (i.e. the workplace), there are no studies conducted in organizational settings. One of the most used model for analyse well-being in organisations is the Job Demands Resources Model (JD-R Demerouti et al., 2001; Bakker & Demerouti, 2007; Bakker, Demerouti, & Sanz-Vergel, 2014). As previously described in this thesis, two main propositions comprise this model. The first one is that all job characteristics could be divided in two main categories: job demands and job resources. Job demands have been defined as 'those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs' (Demerouti et al., 2001, p.501). On the contrary, job resources have been defined as 'those physical, social, or organizational aspects of the job that may do any of the following: a) be functional in achieving work goals; b) reduce job demands and the associated psychological costs; c)

stimulate personal growth and development' (Demerouti et al., 2001, p.501).

The second assumption of the JD-R model is that it is composed by two main processes namely the health impairment process and the motivational process. The health impairment process consists on the fact that long-term excessive job demands from which employees are not able to effectively recover could lead to sustained activation and overtaxing, and this may result in exhaustion, which is the central component of burnout (Schaufeli & Taris, 2014). The second process of the JD-R model, namely motivational process, posits that job resources have motivational potential and could lead to work engagement (Bakker & Demerouti, 2007). In their critical review of the JD-R model, Schaufeli and Taris (2014) discussed some issues concerning the JD-R model. One of these refers to the distinction between the health impairment and the motivational process. Schaufeli and Taris (2014) claimed that on one side it is true that two independent processes compose the JD-R model. However, it is quite possible that the health impairment and the motivational processes represent two sides of the same coin. This means that when health and well-being deteriorate, motivation decrease and vice-versa. According to this, Schaufeli and Taris (2014) claimed that the health impairment and the motivational process should be studied jointly. In that sense, workplace phobia could be included in the JD-R model, as it is related to anxiety which is considered as an health outcome, especially related to exhaustion (Bakker et al., 2014; Ahola, 2008).

Thus, the aim of this study is to analyse the concept of workplace phobia for the first time in a non-clinical sample (as recently suggested by Muschalla & Linden, 2014) using jointly the health impairment and the motivational processes of the JD-R model.

In order to reach this aim, job demands and job resources have to be defined. The antecedents of burnout and work engagement (e.g. job demands and job resources) have been categorized in two different categories (Bakker et al., 2014): situational factors (e.g.

workload) and individual factors (e.g. neuroticism, self-efficacy). As workplace phobia is context-specific, we argue that situational factors should be more appropriate to analyse workplace phobia in organizational contexts. Furthermore, in order to choose the appropriate job demands and job resources three main criteria has been followed: a) selecting among the most used; c) choosing the more non occupation-specific ones; c) choosing which from the literature could be more related to the concept of workplace phobia.

Thus, according to the literature, physical and psychological demands as job demands, social support from colleagues and social support from supervisor as job resources have been chosen. This is in line with what previously described. In fact, workplace phobia occurs in comorbidity with specific social anxiety towards a special superior or colleague (Muschalla, 2009). Furthermore, patients with workplace phobia reported more often reported of being overtaxed at work because of the content or amount of work (Muschalla and Linden, 2014).

In order to analyse the concept of workplace phobia using jointly the health impairment and the motivational processes of the JD-R model, firstly it will be analysed the psychometric properties of the workplace phobia scale, as it has never been used in the Italian context.

Subsequently, the following main hypothesis will be tested:

Hypothesis 1. The health impairment process and the motivational process will lead to workplace phobia and subsequently to absenteeism.

Particularly:

Hypothesis 1a. Exhaustion mediates the relationship between job demands (psychological demand and physical demand) and workplace phobia;

Hypothesis 1b. Work engagement mediates the relationship between job resources (social support from colleagues and social support from supervisor) and workplace phobia.

Hypothesis 1c. Workplace phobia will be positively related to absenteeism.

Methods

A cross-sectional survey was conducted in a large retail company located in the middle Italy. Data were collected both through subjective data (questionnaires) and objective data (organisational records on sickness leave). In order to collect subjective data, workers were assembled in different groups and after one hour of training on work-related stress, they completed an anonymous, self-administered questionnaire. Furthermore, the organization provided the objective data of sickness leave duration for all the participants in the study.

Sample

In total, 739 workers voluntary participated in the study, after researchers selected a randomized sample of 1000 workers (73.9% was the response rate) of the company. Most of the participants (62.4%) were female and the mean age was 44.5 years (SD=7.93). Organizational tenure mean was 17.03 years (SD=8.79). Most of the participants (93%) had permanent contracts.

Measures

Consistent with the JD-R model, the questionnaire was composed by scales referring to job demands (physical demand and psychological demand), job resources (social support from supervisor and social support from colleagues), burnout, engagement, and workplace phobia. Details about scales included in the questionnaire are here presented.

Psychological Demand. Psychological demand has been measured with the Italian version (Cenni and Barbieri, 1997) of the Karasek's (1985) Job Content Questionnaire. The scale consists of 9 items with response options ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). One example item is 'My job requires working very hard'. Items were then averaged.

Physical Demand. Physical demand has been measured with the Italian version (Cenni and Barbieri, 1997) of the Karasek's (1985) Job Content Questionnaire. The scale consists of 5 items with response options ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). One example item is 'My job requires lots of physical effort'. Items were then averaged.

Social Support from supervisor. This dimension has been measured with the four-item scale of JCQ (Karasek, 1985). Answers ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). One example item is 'My supervisor is concerned about the welfare of those under him'. Items were then averaged.

Social Support from colleagues. Measured with a four-item scale that ranges from '1' (totally disagree) to '4' (totally agree) from the Job Content Questionnaire (JCQ) developed by Karasek (1985; Italian validation by Cenni and Barbieri, 1997). Again the average score was used. One example item is 'People I work with are helpful in getting the job done'.

Exhaustion. It is measured as emotional exhaustion, which is the basic individual main component of burnout, refers to 'feelings of being overextended and depleted of one's emotional and physical resources' (Maslach, et al., 2001, p. 399). Emotional exhaustion was measured using that scale of the Maslach Burnout Inventory (MBI) (Schaufeli et al., 1996; Borgogni et al., 2005). The 5 items were scored on a 7-point frequency Likert scale (0='never' to 6='every day') and then summed.

Work engagement. Work engagement is a multidimensional construct defined as a positive, fulfilling, work-related state of mind which is characterized by a) vigor, which is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence even in the face of difficulties (one example item is 'At my work, I feel bursting with energy'); b) dedication, which refers to a sense of

significance, enthusiasm, inspiration, pride and challenge (one example item is ‘I am proud of the work that I do’); c) absorption, which is characterized by fully concentrating on and being deeply engrossed in one’s work, where time passes quickly and one has difficulty detaching oneself from work (González-Romà, et al., 2006, p.166). In this study the short version of the Utrecht Work Engagement Scale (Schaufeli, et al., 2006; Italian version by Balducci et al., 2010) was used, consisting of three items for each dimensions previously described. All nine items were scored on a 7-point scale ranging from ‘0’ (never) to ‘6’ (always) and then averaged.

Workplace phobia. In order to measure workplace phobia the Muschalla and Linden (2008) Workplace Phobia Scale has been used. As this scale has never been translated in Italian before, back translation process has been used. Subsequently, an exploratory factor analysis and a confirmatory factor analysis have been performed. Results of these analyses will be presented in the result section. The Workplace Phobia Scale is composed by 13-items scored on a 5-point frequency Likert scale (1 = ‘do not agree at all’ to 5 = ‘totally agree’). One example item is ‘When imagining having to pass a complete working day at this workplace, I get feelings of panic’. Items were then averaged.

Absenteeism. Absenteeism was measured as involuntary absenteeism, i.e. through the total length of time an individual has been absent over a specified period, regardless of the number of absence spells (Bakker et al. 2003b). Specifically, absenteeism has been measured as the number of days a worker has been absent during one year. The period of one year was chosen because increases stability in the absence measures (Hammer & Lindau 1981). The mean absence duration was 14.27 days (SD = 23.32; min= 0; MAX = 184) and most of the participants (75.2%) has been absent from work at least one day. Since absence duration showed a considerable skewness (3.55) and kurtosis (16.20), a log₁₀ transformation was performed in order to approach a normal distribution (Aiken & West, 1991).

Data Analysis

Before testing the hypotheses, as the Workplace Phobia Scale has never been tested in Italian, an exploratory factor analysis (Barbaranelli, 1997) has been performed using SPSS version 21.0. After that, a confirmatory factor analysis (using AMOS software package version 21.0) has been conducted. Furthermore, in order to test our hypothesis simultaneously, structural equation modelling methods were employed using the AMOS software package version 21.0 with maximum likelihood estimation methods.

Exhaustion, workplace phobia and absenteeism were included as a single indicator (the average total score of the corresponding scale). In this case the error variance was estimated by using the formula $(1-\alpha) * \sigma^2$ (Bollen, 1989). Job demands variable was indicated by psychological demand and physical demand, while job resources was indicated by social support from colleagues and social support from supervisors. Work engagement was indicated by vigour, dedication and absorption. As job demands and job resources frequently correlate, meaning that high job resources could reduce job demands, and high job demands could prevent the mobilisation of job resources (Bakker & Demerouti, 2007), job demands and job resources were related.

In order to test our hypotheses, several models were compared by means of Chi-squared differences tests (Jöreskog & Sörbom, 1993). As Chi-squared is sensitive to sample size, using relative goodness-of-fit measures is strongly recommended (Bentler, 1990).

Thus, to establish the model's fit to the data, the following indexes were used: χ^2 goodness of fit statistic; the Comparative Fit Index (CFI; Bentler, 1990); the Tucker-Lewis Index (TLI; Tucker & Lewis, 1973) and the Root Mean Square Error of Approximation (RMSEA; Steiger, 1990). Fits can be considered acceptable when CFI and TLI are greater than 0.90 and the RMSEA is equal or less than 0.08 (Bentler, 1990; Byrne, 2001).

Results

Exploratory factor Analysis

In order to analyse the factorial structure of the Workplace Phobia Scale, an exploratory factor analysis on the thirteen items has been performed, using the principal components analysis (PCA) extraction method and requesting Varimax rotation. Only items with loadings of .30 or higher were considered (Tabachnick & Fidell, 1983), thus item 11 ('While working I am always paying attention what could happen next') has been deleted. The items (in table 1 presented in English, while Italian translation can be accessed in the appendix A), means, standard deviations, and factor loadings are presented in Table 1. The analysis showed that the scale was composed by only one factor, which explained 50.35% of the variance. The scale showed a good reliability (Cronbach's $\alpha = .902$) and satisfied the criterion of .70 (Nunnally & Bernstein, 1994).

Table 1 – Exploratory factor analysis results of the Workplace Phobia Scale (N=739)

N	Item	M	SD	Factor Loading
13	I feel severely uncomfortable and tense when I think of my workplace	1.55	.98	.86
12	I feel severely uncomfortable and tense when I am at my workplace	1.53	.93	.82
2	When imagining having to pass a complete working day at this workplace, I get feelings of panic	1.65	1.07	.80
1	When thinking about my workplace, everything in my body is tense	1.90	1.20	.75
7	Whenever possible, I avoid coming near to the site of my workplace	1.79	1.27	.74
5	My sleep is worse before working days in contrast to non-working-days	1.91	1.29	.72
4	I rather take a roundabout way instead of passing the street where my workplace is situated	1.48	1.00	.70
10	After work I hurry up more than others just to get away from that place	2.19	1.34	.68
9	On my way to my workplace I would rather turn and walk back	2.00	1.22	.64
6	I feel tense when entering public places (like the supermarket of my town) where I could meet colleagues or superiors	1.36	.87	.62
3	In special situations at the workplace I am afraid of getting symptoms like trembling, blushing, sweating, heart beating	2.06	1.38	.56
8	I had to go on sick leave once or for several times because I could not stand any longer the problems at my workplace	1.39	0.97	.55

Confirmatory factor analysis

The model showed the following fit indices: χ^2 (df = 54) = 600.04; $p < .001$, TLI = .85, CFI = .88 and RMSEA = .12. To decide whether the model needs re-specification, the modification indices were inspected. The indexes indicated that allowing the error terms for two couples of items could have increased the model fit. The first couple of items (7-4) respectively refers to ‘Whenever possible, I avoid coming near to the site of my workplace’ and ‘I rather take a roundabout way instead of passing the street where my workplace is situated’. The other couple of items (2-13) respectively refers to ‘When imagining having to pass a complete working day at this workplace, I get feelings of panic’ and ‘I feel severely uncomfortable and tense when I think of my workplace’.

Theoretically, these errors could be allowed to covary given the presence of a considerable overlap in their content. The overlap of the first couple of items refers to the fact of avoiding getting close to the workplace when it is possible. While the overlap of the second couple of items, refers to thinking or imaging situations concerning the workplace. The model with this correlated errors fitted the data significantly better: χ^2 (df = 52) = 250.72; $p < .001$, TLI = .94, CFI = .96 and RMSEA = .07.

Moreover, all items loaded significantly on the latent variable, with coefficients ranging from .51 to .86.

Structural Equation Modelling

In order to analyse the role of workplace phobia as a health outcome in the JD-R model, both correlations and structural equation model analysis have been performed. Means, standard deviations, reliabilities and Pearson correlations are shown in table 2. All the scale used, showed a good reliability and satisfied the criterion of .70 (Nunnally & Bernstein, 1994) except for scales concerning absorption and social support from colleagues.

Table 2 – Means, standard deviations, reliabilities and Pearson correlations for all variables (N=739)

Variables	M	SD	α	1	2	3	4	5	6	7	8	9
1. Psychological dem.	2.80	.48	.70	-								
2. Physical dem.	2.56	.81	.81	.36***	-							
3. Soc. Supp. Superv.	2.86	.77	.81	-.26***	-.15***	-						
4. Soc. Supp. Coll.	2.96	.57	.67	-.23***	-.19***	.41***	-					
5. Emot. Exhaustion	16.98	7.32	.79	.48***	.45***	-.28***	-.25***	-				
6. Vigor	4.70	1.27	.77	-.12***	-.17***	.27***	.23***	-.36***	-			
7. Dedication	4.78	1.53	.87	-.07	-.18***	.31**	.25***	-.29***	.63***	-		
8. Absorption	4.99	1.09	.63	-.07	-.13***	.21***	.19***	-.22***	.64***	.65***	-	
9. WPP	1.73	.79	.90	.31***	.342**	-.28***	-.32***	.54***	-.47***	-.44***	-.35***	-
10. Absenteeism	.77	.60	-	.07	.16***	-.14***	-.12***	.16***	-.17***	-.17***	-.14***	.20***

Notes. *p<.05; **p<.01; ***p<.001

All the correlation results were in the expected direction and all the values showed a significant association except for the relationship between psychological demand and dedication, absorption and sickness duration.

As shown in the first row of table 3, the proposed model (M1) fit reasonably to the data with all indexes meeting their respective criteria. All structural paths between latent factors were significant and in the expected direction. In the next series of analyses, the full mediation model with the partial mediation model, including direct paths from job demands and workplace phobia, and from job resources and workplace phobia (M2) has been compared. The results showed that the inclusion of these additional paths did not improve the model fit ($\Delta\chi^2(2) = 4.37, p > .05$). Consistent with this result, the paths from job demands to workplace phobia ($\gamma = .11, p > .05$) and from job resources to workplace phobia ($\gamma = -.10, p > .05$) were non-significant. All structural paths are depicted in figure 1. Hypothesis 1c which hypothesized that workplace phobia was related to absenteeism is confirmed.

Table 3 – Fit of model composed by workplace phobia as an health outcome of the JD-R model (N=739)

Model	χ^2	df	TLI	CFI	RMSEA	Model Comparison	$\Delta\chi^2$	Δdf
M1. Hypothesized Model	124.99***	32	.94	.96	.06	-	-	-
M2. Partial Mediation Model	120.62***	30	.94	.96	.06	M1-M2	4.37	2

Notes. χ^2 = Chi-square, df= degrees of freedom; TLI= Tucker- Lewis Index; CFI= Comparative Fit Index; RMSEA= Root Mean Square Error of Approximation; *** $p < .001$

Subsequent Sobel tests supported the mediating role of exhaustion in the relationship between job demands and workplace phobia ($z = 2.12; p < .05$); and supported the mediating

role of work engagement in the relationship between job resources and workplace phobia ($z = 5.65$; $p < .001$). Thus, all of the hypotheses have been confirmed.

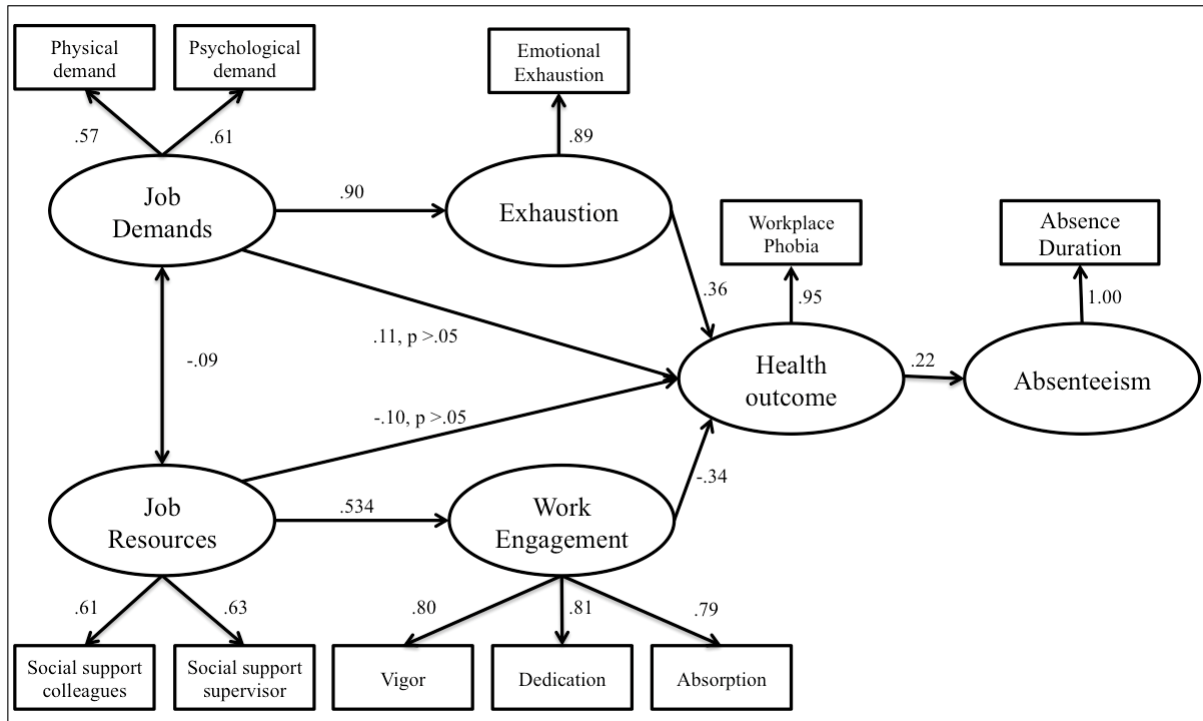


Figure 1 – Standardized coefficient of the partial mediation model

Discussion

This study focused on workplace phobia, which is an anxiety disorder that needs for further research (Muschalla & Linden, 2014). The main hypothesis formulates here, posited that workplace phobia could be considered as an health outcome of the JD-R model and results concerning the fit of the model confirmed this hypothesis. According to this, other studies suggested a relationship between exhaustion and health outcomes such as depressive symptoms and life satisfaction (Hakanen & Schaufeli, 2012) and mood disturbance (Hillhouse, Adler, & Walters, 2000). Nevertheless, this is the first study which considered a health related outcome specific of work, as workplace phobia is.

Findings of this study confirmed what posited by Schaufeli and Taris (2014), which

suggested that the health impairment process and the motivational process should be studied jointly. Particularly, results showed how job demands could increase emotional exhaustion, which in turn could enhance workplace phobia of the workers. Concerning the motivational process of the JD-R model, results provided evidences for the fact that job resources influenced work engagement, which in turn could decrease workplace phobia.

Moreover, results of this study suggested that work engagement could decrease workplace phobia. Despite the relationship between job resources and health outcomes is not one of the most studied in the JD-R model, this result is in line with the findings of a study of Bakken and Torp (2012). In their study, a significant relationship between work engagement and health was found. Also Schaufeli, Taris and van Rhenen (2008) in their study conducted in telecom managers found a negative association between two dimensions of engagement (vigor and dedication) and anxiety, depression and psychosomatic complaints.

Results presented in this study confirmed also the relationship between workplace phobia and absence duration from work in the organizational context, meaning that the higher is workplace phobia, the longer workers take sick leave from work. The relationship between workplace phobia and absenteeism could be twofold (Muschalla, 2009). On one side, anxiety can have manifested firstly at the workplace first, and sick leave occurs as a result of this (as hypothesized in this study). On the other side, the longer the duration of sick leave due to any (not strictly work-related) health issue, the more a perception of workplace-related anxiety may increase. In other words, workplace-related anxiety could develop as a result from enduring sick leave, because of rising perceptions of uncertainty, or speculative anticipation of possible changes happening at work while the person is absent.

This study contributed in adding knowledge on workers health in organisations and how psychosocial risk factors in the organisations could contribute in the development of anxiety disorders, such as workplace phobia.

Concerning the Workplace Phobia Scale, results provided in this study suggested that, also translated into Italian language, this scale is a reliable measure to analyse specific anxiety disorder in organizations, despite more research is needed. Results from the explorative factor analysis suggested that item ‘While working I am always paying attention what could happen next’ should be excluded. This didn’t surprise, as thinking of what could happen next isn’t strictly considered as a negative way to work, but it could be considered as a useful way to manage unexpected problems or itches, which could happen during daily work activities.

Strengths and limitations

One of the main strengths of this study is that workplace phobia is an under-recognized construct and this is the first study, which analysed workplace phobia collecting data in an organizational setting. Furthermore, both subjective data (collected through questionnaires) and objective data (collected through the company’s records on absence duration) have been used in order to test the hypotheses.

Concerning the limitations of this study, one of the most important is the cross-sectional design, which preclude causal relationships between the variables examined. Furthermore, the study has been conducted in only one organisation, thus these findings could be less generalizable to other contexts.

Moreover the workplace phobia scale has been used in order to measure workplace phobia, but no diagnosis has been made.

Direction for future research, practical implications and conclusion

Future studies should be conducted using a longitudinal design and investigating different occupational settings. Furthermore, there is a need for future studies that analyse the most important job demands, which could increase workplace phobia. As the JD-R model posits that job resources could buffer the impact of job demands on exhaustion, future studies

should investigate also which kind of job resources could be better decrease the impact on emotional exhaustion and in turn workplace phobia. Moreover, future studies should investigate the existence of a potential reciprocal effect between job demands, workplace phobia, being absent from work and the potential worries of return to work as this relationship has never been studied before.

Furthermore, future studies should consider also the potential occurrence of traumatic events in the workplace and should consider also those kinds of job that could be more exposed to traumatic events (e.g. bank employees or workers of emergency rooms).

Lastly, future studies should measure workplace phobia in organisational settings through a diagnosis of the disorder.

Results of this study suggested that workplace phobia is an important issue in organisations both for the workers health and the organisational costs linked to absenteeism. Thus, organisations should be aware of this disorder. In line with what suggested by Muschalla (2009) who posited that primary care physicians should be aware of workplace phobia, result in the organizational context suggested that especially occupational physicians should acknowledge the presence of workplace phobia when workers require a medical examination or are often on sick leave.

In conclusion, this study analysed workplace in the organisational setting, confirming its role as a health outcome in the JD-R model.

Chapter 4

The importance of context-dependent psychosocial risk factors in psychosocial risk assessment

Introduction

Workforce psychological well-being is one of the most studied and discussed topics in organizational and psychological literature both for its relation to workers' health and for organizational costs. According to the 'Stress in America' survey (American Psychological Association, 2014) work is the second most reported source of stress after money. Furthermore, the European Community (European Agency for Safety and Health at Work, 2013) recognizes the key role played by the psychosocial work environment and emphasizes the importance of work-related stress management. Despite the attention paid by the institutional bodies, there is still a long way to go. For example, the European Survey of Enterprises on New and Emerging Risks (Rial-González et al., 2010) show that 50% of companies report they do not have policies on safety and health at work in EU-27 because they do not have the necessary expertise and 40% report that they do not see any benefit from implementing such policies. Psychosocial risk factors, defined as 'those aspects of work design and the organization and management of work, and their social and environmental contexts, which have the potential for causing psychological, social or physical harm' (Cox, Griffiths, & Rial-Gonzalez, 2000, p.14), are the main causes of stress at work (McDaid, 2008). Dealing with work-related stress and its antecedents, in particular psychosocial risk factors, calls for three main methodological considerations: thresholds, measures and types of data (Guglielmi et al, 2013a). The first consideration concerning thresholds refers to the fact that comparing stress, as opposed to other workplace risks (e.g. physical risks as noise) is missing cut-off points above which workers are stressed. The second consideration

concerning subjective and objective measures is due to the fact that both of these measures could be affected by different kind of systematic bias, which could be reduced by the combined use of both types of measures. The third consideration refers to the need of using both qualitative and quantitative data because, as stressful conditions do not lead to stress under every condition, different typologies of data collection could increase the reliability of the measure. Furthermore, the use of quantitative and qualitative data allows understanding not only levels of measurement, but also enhancing knowledge about organization-specific processes and dynamics. Although some studies have addressed the subjectivity/objectivity issue (e.g. Panari, Guglielmi, Ricci, Tabanelli, & Violante, 2013), there is a lack of studies that integrate quantitative and qualitative measures in order to analyse psychosocial risk factors in organizations. Despite the number of stakeholders involved in work-related well-being topics (e.g. researchers, organizations, policy makers) and the extensive debate in the last decades, research designs have mostly used quantitative and subjective measures (Tabanelli, Depolo, Cooke, Sarchielli, Bonfiglioli, Mattioli, & Violante, 2008). Also in the field of organizational interventions, many of the studies use standardized questionnaires as a screening tool before the intervention implementation, but some authors are starting raising some issues related to the sole use of quantitative measures (i.e. questionnaires) in the organizational context. For example, Nielsen, Abildgaard and Daniels (2014) argue it is essential to consider the context in risk assessment. The main issue is that standardized questionnaires do not consider the individuals' appraisal of working conditions nor the specific context of the workplace. A recent model, which could describe this assumption, is the Model of occupational health interventions (developed by Nielsen, Randall, Holten, & Rial-González, 2010, later embellished in the PIOP model by Nielsen, Stage, Abildgaard, & Brauer, 2013). This model is composed by five main stages in an ongoing process: preparation, screening, action planning, implementation and evaluation. Work-related stress

assessment is an important part of organizational interventions because such assessment enables the identification of the risk factors on which to focus intervention activities (Nielsen et al., 2010). Particularly, the aim of the screening stage should be consider both the specific organizational contexts and workers' appraisal rather than trying to assume an 'objective' work-environment (Daniels, 2011). In this way, screening could be useful in facilitating the subsequent development and implementation of interventions.

According to these arguments, the StART method (Stress Assessment and Research Toolkit) has been developed (Guglielmi et al., 2013a) to assess work-related stress and managing psychosocial risk factors. One assumption of this model is that on the whole, the process is conceptualized as a cycle and in the last phase of that, after the identification of the psychosocial risk factors a set of suggestions for improvement are proposed to address the psychosocial risks identified. The monitoring of psychosocial factors and the implementation of initiatives imply that the cycle may be repeated, i.e. that following evaluation, more initiatives may need to be implemented. Furthermore, the StART method is based on the use of mixed methods design to analyse both well-known psychosocial risk factors (e.g. workload) and risk factors specific to an organization. Following the research design proposed by Creswell and Plano Clark (2011), this method uses the *exploratory sequential design* first collecting and analysing qualitative data (focus group) to gather useful information for creating a quantitative instrument (questionnaire) in order to test and generalize the qualitative findings in a tailored questionnaire. The choice to create tailored items is consistent with fact that, as reported by Nielsen et al. (2014), tailored questionnaires and the subsequent translation process of its results act as a mechanism enabling employees and managers to make sense of their work environment (Greenhalgh, 2014; Pawson & Tilley, 1997). Nielsen et al. (2014) showed how tailoring of items and subsequent and structured translation provided a better basis for intervention activities to be developed compared to an

entirely standardized. Their contribution is to examine how the screening phase facilitates sense-making and the opportunity to develop detailed and contextual action plans to improve the psychosocial work environment and employee health and well-being. These locally developed measures and the way they can be used in intervention research are poorly evaluated. Nielsen et al. (2014) evaluated a tailored questionnaire in terms of participants' perceptions of the use of the method, but they did not evaluate how tailored items could be used to develop intervention activities. A limitation of the method proposed by Nielsen et al. (2014) is that it is very time-consuming and requires a high level of expertise in developing and validating questionnaires. Acknowledging the contribution of Nielsen and colleagues (2014) to consider the local context on the one hand but also acknowledging the limitations of this method, the only use of tailored items to capture risk factors that cannot be identified using standardized measures has been proposed. To the best of our knowledge, no studies have addressed the use of context-dependent factors, using the StART method. Mixed methods research designs have several advantages in identifying psychosocial risks in organizations. First, mixed method approach 'provides a better understanding of research problems, as only one type of data could provide an incomplete understanding' (Creswell & Plano Clark, 2011, p. 5). Second, as the local context in organizations could present psychosocial risks that cannot be identified using standardized questionnaires, mixed methods enable researchers and practitioners to discover potential risk factors and then generate and verify a theory in the same study. Finally, mixed methods provide stronger inferences (Molina-Azorin, 2012). Several authors (e.g. Johnson & Turner, 2003) argued that using mixed methods can balance out the drawbacks that methods have by themselves. For all those reasons, mixed methods research could be effective for identifying psychosocial risk factors and work related stress specific to the local context. At the same time, it is essential to

rely on strong and reliable theoretical models to understand the relationship between psychosocial risk factors and their consequences on workers and organizations.

Job Demands Resources Model

The Job Demands-Resources Model (JD-R; Demerouti et al., 2001; Bakker & Demerouti, 2007; Bakke et al., 2014) is one of the most widely used models concerning work-related well-being. The JD-R model posits that psychosocial risk factors can be modelled using two main categories: job demands and job resources, however, an important feature is that demands and resources are not pre-defined, but rather should be identified according to local context (Bakker et al., 2014). For example, pupil misbehaviour could be a particular job demand for teachers (e.g. Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007), or emotional labour for healthcare workers (e.g. de Jonge, Le Blanc, Peeters, & Noordam, 2008). Thus, the JD-R model could be useful also when dealing with specific occupational groups as specific job demands and job resources could be specific to certain job positions (Bakker et al., 2014). Furthermore, the JD-R model is based on two main propositions: the existence of two processes (the health impairment and the motivational one) and the flexibility of the model. The health impairment process postulates that job demands could lead to workers' depletion of energies and that they constitute the most important antecedents of burnout, while the motivational process states that job resources are the antecedents of work engagement. Moreover, one assumption of the JD-R model is that although job demands and job resources trigger different processes (i.e. the health impairment process and the motivational process), they also interact in predicting workers' well being through the increase of work engagement and the decrease of strain (Bakker et al., 2014). The usefulness of the JD-R model to provide suggestions on how to design organizational interventions is suggested by the fact that JD-R model has been used in recent intervention frameworks (e.g. Nielsen et al., 2013). Focusing on JD-R model could be useful

in order to help organizations in designing interventions aimed to enhance workers' well-being not only through the decreasing of job demands, but especially understanding the role of job resources available in an organization and implement conditions which could enhance them when it is not possible to reduce demands (Bakker et al., 2014).

The present study

The main aim of this study is to demonstrate how mixed methods research enables a) the identification of particular demands and resources on the workplaces which could influence workers' well-being; b) the analysis of how this approach is useful to concrete suggestions to organizations in how they may enhance workers' well-being through the implementation of organizational initiatives. In order to achieve this aim, a study was conducted in a large retail chain in Italy. Data were collected during the management of work-related stress in the company (which is mandatory in Italy). As required by law, different homogeneous groups (which means groups of workers which could be exposed to similar risks in the workplace) were identified. In the present study, findings from the largest homogenous group in the organization will be presented. This group is composed by workers employed in grocery stores. Designs and results of two stages will be presented. The first is the qualitative stage, in which it has been explored whether any of aspects of the local context were perceived to have an impact on worker well-being. In the second, quantitative stage, it has been analysed whether these factors were related to well-being outcomes and whether any resources could be used to reduce the negative impact of job demands that the organization could not easily change.

Qualitative stage

The main aim of the qualitative stage is to develop knowledge on job demands and job resources, aiming to detect also local contextual factors. Using a qualitative approach in this stage is useful because it enables the researcher to collect information about the context,

which could not be gathered through standardized measures. Furthermore, using a qualitative approach, especially as a first stage of a sequential design, enables to understand not only specific contents but also develop hypothesis, which could be tested in a subsequent quantitative stage.

The qualitative stage has been conducted using four focus groups, which were been directed by a researcher and were audio-recorded.

Participants. In order to create a small sample which was representative of the population of shop-floor workers, the organization gave the researchers access to the employee data-base for the following information: age, organizational tenure, job position, and workplace (grocery store where the employees work). Based on this dataset, a representative sample of 60 employees (15 workers for each focus groups) was invited to participate in 4 focus groups. The traditionally recommended size for a focus group is between 10 to 12 people, despite more than 10 participants are difficult to control (Krueger & Casey, 2015). Thus, 15 workers for each focus group were selected because it could be expected some drop-outs due to maternity leave, sickness leave, incompatibility between focus groups hours and shift work of that week, or not willing to participate in the study. A general communication about the project was sent by e-mail to all the supervisors and, as many of the workers do not have access to e-mail, the communication was hung also on the bulletin boards in every grocery store. Workers were invited to participate in an informative letter sent to their supervisor. Participation in the study was promoted by the Safety manager, through telephone calls to supervisors a few days prior to the scheduled focus groups.

The final sample totalled 37 participants (mean participants for focus group was 9.2), and the participation rate was 61.6%. 62.2% were female, mean age was 44.62 years (SD=8.87) and the average organizational tenure was 12.62 years (SD=9.46). Focus group were recorded and then transcribed verbatim.

Measures. Four main parts composed the focus group's structure. In the first part, the conductor presented him/herself and the aim of the focus group providing all the information the workers' need and answering to all the possible questions and doubt about the project. In the second part, the researcher read the definition of stress presented in the Framework Agreement on stress at work (ETUC, UNICE, UEAPME, & CEEP, 2004). This moment is very important because it allowed all the participants to share a common language concerning work-related stress. After that, the conductor probed the participants about their opinion on the stress definitions, and invited them to identify stressful conditions in their job thinking in the past six to twelve months. After this, the third stage comprehended a list of semi-structured questions concerning topics indicated by the European Agency for Safety and Health at Work (Cox et al., 2000) as Stressful Characteristics of Work divided in two main categories: work content (work environment and work equipment, task design, workload/workpace and work schedule) and work context (organizational culture and function, role in the organization, career development, decision latitude/control, interpersonal relationship at work, home-work interface). Towards the end of the focus group session (fourth part), the conductor asked the participants to identify any other factors that they did not mention before which had an impact of their well-being.

Data Analysis. Two different researchers analysed data from focus groups with NVivo software (version 10) using the thematic analysis technique. A codebook was created and categories were formed based on the Cox et al. (2000) categories by analysing the text passages and assigning codes to statements which referred to the main job demands and job resources. In case of discrepancies in the results researchers discussed until reaching an agreement.

Qualitative results. The thematic analysis highlights the presence of a local, context-dependent job demands and job resources in this population. In the first part of the focus

group, people were invited to talk about the factors, which influenced their well-being. Some workers mentioned a software programme called Brase. Brase has been developed to help the grocery store's coordinator to organize the workers' tasks with the aim of optimizing time and enhancing the organization's productivity. It was perceived by participants to have a negative influence on their well-being. The practical consequence of the implementation of that software is a high rotation between different market's departments. Brase was mentioned in two out of the four focus group, possibly because that not all the grocery store already implemented that software at that time. Referring to Brase, workers reported: 'I have never had stress problems but, with Brase you stay two hours in the butcher's department, one hour in the gastronomy department and so on. It is stressful because I change too much, it makes me mad'; 'I have to go to other departments and I'm not able to do the job'; 'The aim of Brase is optimizing times, but without knowing what to do, we have the double amount of work'; 'Brase produced confusion, it's the second time I caught the flu. I stayed in the bakery department and then in the fish department and then you got sick. Basically we did something similar also before but not so much'; 'Brase is the first cause of stress, I begin ten activities and in the end neither one is good. It makes us feel frustrated and there is no satisfaction in working in this way'.

Furthermore, Brase was discussed in relation to the working schedule when a worker reported that 'We just have work shifts that you know when you enter but you don't know when you are going to quit, and, in addition to this, they change our work shifts under the wire. In addition, with Brase they took half of a day to organize the working hours and they tell it to you on Saturday for Monday'. Moreover, it was also mentioned that: 'Top management should be closer to workers. Taking for example Brase, if they would have asked our collaboration, that it would be different'. In conclusion, participants perceived the Brase software to be a demand in their jobs that was negatively related to well-being. The

information about the locally context dependent software programme was fed into questionnaire development.

Only one item has been developed, due to the fact that qualitative results showed a lot of different types of problems with Brase so therefore items covering all these could not be explored in the questionnaire because the company was composed by low education workers (or respondents in general) so long questionnaires should be avoided.

Quantitative stage

In line with the exploratory sequential design, results of the qualitative stage allowed researchers to develop new hypothesis to test to in a broader working population through quantitative methods (e.g. questionnaire). As qualitative findings highlight the presence of Brase as a well-known concept by the workers, in line with the JD-R method an item has been introduced in order to test whether being a Brase-worker (as a potential job-demand for this homogenous group in this company) was related to emotional exhaustion and work engagement. Brase has been introduced as a potential job demand as qualitative findings suggested that after the implementation of Brase, workers reported their job is changed, that it takes twice the time to do the job activities and that they do not know exactly how to do the job. Together these issue described by participants may be associated with higher levels of emotional exhaustion.

As the health-impairment process of the JD-R model postulates that job demands affect exhaustion, in order to test and generalize the qualitative results and according to the JD-R model it has been hypothesized that:

Hypothesis 1. Brase-workers (workers whose work depends on Brase software) experience higher level of emotional exhaustion.

Workers who have to deal with Brase reported to experience frustration and confusion as they are not able to do the job. For this reason it has been hypothesized that Brase could

lead to a decrease of workers' motivation. This is in line with a recent studies (Ghadi, Fernando, & Caputi, 2013; Beukes & Botha, 2013) that showed that meaning of work is related to work engagement.

Thus, to analyse if Brase could impact on work engagement, the following hypothesis has been developed:

Hypothesis 2. Brase-workers experience lower level of work engagement.

As there are increasing demands put on organizations (due both to the economic crisis and to more complex labour markets), it can be extremely difficult for researchers and occupational health consultants to recommend a decrease workers' in job demands (as for example reducing the amount of work and so on) to managers. In the case of Brase, the company had introduced the software programme with a view to reduce costs. It was therefore inappropriate that the research team recommended the Brase software should be abandoned. As suggested by Bakker et al., (2014) in their review of the JD-R model, intervention initiatives should aim to prevent burnout and foster work engagement, especially when there are no possibilities to decrease the level of job demands. Job demands and job resources trigger different processes (i.e. health impairment process and the motivational one), but they also have joint effects as they interact in predicting well-being in two possible ways. The first one occurs when job resources buffer the impact of job demands on strain. As reported by Bakker and Demerouti (2007), job resources may be located at four different levels: a) organization at large, b) interpersonal and social relations, c) organization of work, and d) task level. Concerning this specific study, only interpersonal and social relationship level would be the most effective variable in demonstrating the effect of personal resources in enhancing workers' well-being. This is because as Brase has been recently implemented and involved only a part of the company's employees, organization level resources could have a dispersive effect. Also organization of work and task level will be excluded as problems

related to Brase concern just those kinds of categories (e.g. continuing changing of task activity with possible consequences on role clarity). Although participants in focus groups did not explicitly mention relationships with colleagues, it is possible to hypothesize that when Brase workers have to cope with ‘not being able to do the job’, ‘not knowing what to do’, these situations could ‘confusion’ and ‘frustration’. Employees who seek information about how to do the job through from colleagues, i.e. social support. Research on social support demonstrated its ability to buffer against job stress (Bakker, Demerouti, & Verbeke, 2004). Many studies confirm the moderating role of social support in the relationship between job demands and well-being outcomes. For example, a study of Demerouti et al. (2011) demonstrated that social support moderates the relationship between work-family conflict and absenteeism. Moeller and Chung-Yan (2013) found that social support moderates the relationship between amounts of work and decrease the level of related job stress. In addition, Xanthopoulou, Bakker, Dollard, Demerouti, Schaufeli, Taris and Schreurs (2007) found that social support moderated the relationship between workload and emotional exhaustion. Therefore it has been hypothesized that:

Hypothesis 3. Social Support from colleagues moderates the relationship between being a Brase-worker and emotional exhaustion

The second interaction between job demands and job resources occurs when job demands amplify the impact of job resources on engagement. This assumption is based on the Conservation Of Resources theory (COR; Hobfoll, 1989, 2002) which postulates that individuals seek to acquire, obtain, retain and protect that which they value (e.g. resources). For example, Bakker et al. (2007) found in teachers that supervisor support, moderates the relationship between pupil misbehaviour and work engagement. In line with that, the last hypothesis is:

Hypothesis 4. Social Support from colleagues moderates the relationship between being a Brase-worker and work engagement.

Participants. A representative sample of 775 was identified based on the organizational dataset using the following criteria: age, organizational tenure, job position, and workplace (at least one person from each of the grocery store of the retail chain). In order to test and generalize the qualitative findings workers who had already attended a focus group have not been invited. Participants were convened in group meetings of two hours. In the first part of these meetings, the researcher explained the definition of stress and the project that involved that company. Then, workers completed the questionnaire. A researcher was present during the session in case workers needed more information. Also a general communication about the project were sent by e-mail to all the supervisors and hung on the bulletin boards in every grocery store. Participants who composed the sample were invited through an informative letter sent to their supervisor.

Participants totalled 551 (response rate=71.1%) and belonged to different grocery stores size: 35.2% worked in big grocery stores (3,500-15,000sqm of sales area); 52.3% worked in medium grocery stores (2,000-3,500sqm of sales area); 12.5% worked in small grocery stores (0-1,000sqm of sales area). As Brase was only introduced in medium grocery stores, in order to test our hypothesis, only employees who worked in this kind of workplace have been included. Thus, final sample of the quantitative stage was 228 and 116 of them (40.3%) were Brase workers. Most of the participants (70.5%) were female and the mean age was 46.3 years (SD=7.7). Organizational tenure mean was 19.1 years (SD=8.8) and the mean of working hours in a week was 31.4 hours (SD=5.9). Most of the participants (90.6%) had permanent contracts.

Measures. In line with the focus group, the questionnaire comprised both scales related to the content and context factors (Cox et al., 2000), which has been categorized in

job demands and job resources. Complementary to that, also a wide range of variables concerning working conditions was included. In order to test hypothesis previously presented, below variables description are explained.

Being a Brase-worker. According to the qualitative results, an item has been included in order to test whether workers whose activities depend on the Brase software ('Brase-workers) report higher levels with respect to psychological well-being variables investigated with the questionnaire. The item was: 'Do your work activities and the planning of them depend on 'Brase' software?'. Responses to this item were dichotomous ('yes' or 'no').

Social Support from Colleagues. To investigate this job resource, four items from Karasek's scale (1985; Italian version: Cenni & Barbieri, 1997) have been used. The scale is a four-point one, ranging from '1' (definitely not) to '4' (decidedly). This scale was chosen because, social support is a concept, which is not specific of an occupation, but it is valid for every occupation, thus using a standardized scale was chosen. The items of the scale choose refer to the support colleagues could give to Brase workers who have problems in doing an increased amount of work and work that they are not able to do. One example item is 'People I work with are helpful in getting the job done'.

Emotional Exhaustion. Emotional exhaustion was measured with the emotional exhaustion dimension of the MBI-General Survey (Schaufeli et al., 1996; Borgogni et al., 2005). One example item is 'I feel emotionally drained from my work'. The 5-item scale was scored on a 7-point frequency Likert scale (0= never to 6= every day).

Work engagement. The short version of the Utrecht Work Engagement Scale (Schaufeli et al., 2006; Italian version: Balducci et al., 2010) was used, consisting of three for each dimension: vigor, dedication and absorption. One example item is 'At my job, I feel strong and vigorous'. All the items related to dimensions of engagement were scored on a seven-point scale ranging from '0' (never) to '6' (always).

Data Analysis. Statistical analyses were performed using SPSS version 20. In order to test the moderation hypothesis, analyses were performed using the Preacher and Hayes analytical approach (2004).

Four control variables were introduced: gender, age, organizational tenure, working hours and type of contract. Gender has been included because the results of a meta-analysis of Purvanova and Muros (2010) showed that women experience higher levels of emotional exhaustion than men. Also age has been included as a confounding variable as there is a relationship between these two variables. Ahola et al. (2008) found that among women, age was negatively related to burnout in young workers, and positively related in the aging workers. In middle-aged women there was no association between burnout and age. Among middle-aged men, age was positively related to burnout but there was no relationship among young and aged men. Organizational tenure has been included as a control variable, as studies provided contradictory results. Van Dam, Oreg and Schyns in 2008 found that organizational tenure was positively related to resistance to change, although, Kunze, Boehm and Bruch (2013) found no associations between these two variables.

Working hours variable has been included because in recent studies working hours have been found to be positively related to emotional exhaustion (Leonardi, Pagani, Giovannetti, Raggi, & Sattin, 2013). Furthermore, number of working hours could be related to job demands, job resources and outcomes (as workers stay in the workplace for a different amount of time). The last control variable, type of contract, has been included because it has been recently demonstrated a negative association between temporary employment and health (Pirani & Salvini, 2015).

Quantitative results. Results presented in table 1 shows descriptive statistics and correlations between variables. All the alpha values met the threshold of .70 (Nunnally & Bernstein, 1994).

Table 1 – Means, standard deviations, reliabilities and Pearson correlations for all variables (N=228)

Variables	M	SD	α	1	2	3	4	5	6	7	8
1.Gender ^a	.29	.46	-	-							
2.Age	46.33	7.67	-	-.13*	-						
3.Tenure	19.11	8.85	-	-.03	.64***	-					
4.Working hours	31.41	5.95	-	.42***	.16**	.25***	-				
5.Contract ^b	.91	.29	-	-.05	-.13*	-.08	-.06	-			
6.Brasc ^c	.40	.49	-	-.02	.04	.04	.02	.05	-		
7.Social Support	2.88	.62	.71	.04	-.05	-.01	.05	.007	.05	-	
8.Exhaustion	18.65	7.59	.81	-.13*	.21***	.24***	-.02	.05	.14*	-.28***	-
9.Engagement	4.80	1.13	.87	-.01	-.07	-.18**	-.06	-.08	-.02	.37***	-.40***

Notes. *p<.05; **p<.01; ***p<.001

^a Male=1; 28.7%

^b Tenured=1; 92%

^c Brasc yes=1; 22.9%

Results of the Pearson correlations showed that Brase is positively related to emotional exhaustion but not to work engagement, social support and all the control variables considered. Also, relationships between social support and outcome variables are in the expected direction: social support is positively related to work engagement and negatively related to emotional exhaustion.

As working hours and type of contract are not related to emotional exhaustion and work engagement, they were excluded from the moderation analysis. Results presented in Table 2 confirm Hypothesis 1: Brase was positively related to emotional exhaustion ($B=2.35$; $p<.01$) and negatively related to social support ($B=-3.39$; $p<.00$).

Table 2 – Interaction effect between Brase and social support from colleagues on emotional exhaustion (N=228)

Variables	B	SE	t	p	LLCI	ULCI
Constant	13.64	2.80	4.87	.00	8.13	19.16
Gender ^a	-2.17	.94	-2.30	.02	-4.03	-.31
Age	.05	.07	.72	.47	-.09	.19
Tenure	.16	.06	2.61	.01	.04	.29
Brase ^b	2.35	.86	2.73	.01	.66	4.04
Social Support	-3.39	.68	-4.99	.00	-4.73	-2.05
Brase x Social Support	-2.91	1.36	-2.14	.03	-5.59	-.23
Model	R	R²	ΔR^2	MSE	F	p
Model Summary	.44	.19	-	48.45	10.60	.00
Interaction	-	-	.01	-	4.58	.03

Notes. ^a Male=1; ^b Brase yes=1

Concerning the first moderation Hypothesis (H3), social support from colleagues moderates the relationship between Brase and emotional exhaustion ($\Delta R^2=.014$; $p<.05$). The direction of this relationship is clearly showed in figure 1.

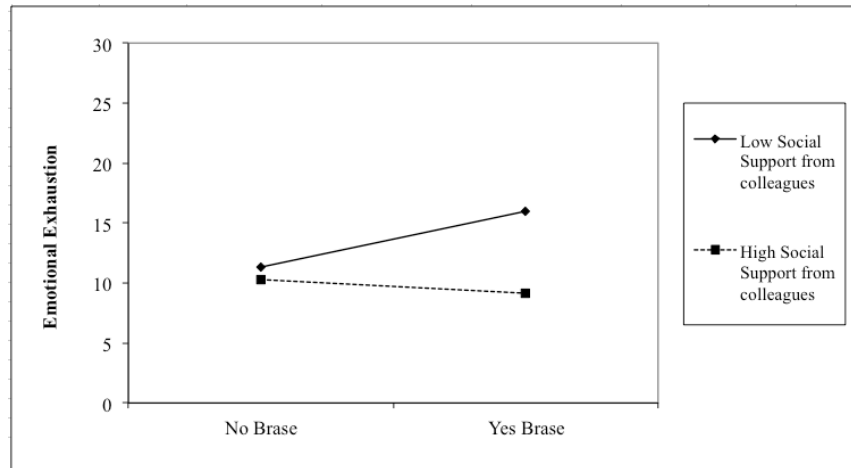


Figure 1 – Buffer effect of social support from colleagues on emotional exhaustion

The figure 1 shows that Brase workers who perceived lower levels of social support from co-workers experienced higher levels of emotional exhaustion respect to their colleagues who perceived high social support. Thus, Hypothesis 3 is confirmed.

Concerning Hypothesis 2, results in table 3 show that there is no association between Brase and work engagement ($B=-.10$; $p=>.05$), thus Hypothesis 2 is rejected.

Table 3 – Interaction effect between Brase and social support on work engagement

(N=228)

Variables	B	SE	t	p	LLCI	ULCI
Constant	4.75	.41	11.46	.00	3.93	5.56
Gender ^a	-.03	.14	-.24	.81	-.31	.24
Age	.01	.01	1.28	.20	-.1	.03
Tenure	-.03	.01	-3.26	.00	-.05	-.01
Brase ^b	-.10	.13	-.77	.44	-.35	.15
Social Support	.68	.10	6.75	.00	.48	.87
Brase x Social Support	.34	.20	1.69	.09	-.06	.73
Model	R	R ²	ΔR^2	MSE	F	p
Model Summary	.44	.19	-	1.06	10.40	.00
Interaction	-	-	.01	-	2.85	.09

Notes. ^a Male=1; ^b Brase yes=1

Moreover, moderation analysis shows that social support from colleagues does not buffer the impact of Brase on work engagement ($\Delta R^2=.001$; $p>.05$). As expected, social support affects work engagement ($B=.68$; $p<.00$)

Discussion

In this paper, the explorative sequential approach has been used to test whether mixed methods could be useful in order to manage job demands and job resources at work and consequently enhance workers' well-being. The sequential approach is essential as it allows for first exploring the organizational context and dynamics qualitatively, and then quantitatively verifying findings thus enabling generalization to a broader working population. In the first stage of the present study, focus groups have been conducted, during which workers identified a local, context-dependent job demand, i.e. a software programme called Brase. The qualitative findings showed that Brase was associated to different kind of problems (e.g. 'confusion', 'lack of clarity', 'work overload', 'frustration', not being able to do the job' etc.). Qualitative findings allowed to design the subsequent quantitative stage in which it has been hypothesized that Brase could be considered as a job demand and thus, that workers would experience higher level of emotional demands and lower levels of work engagement if they were exposed to Brase. Findings showed that Brase was positively related to emotional exhaustion but not to work engagement. The positive association between Brase and emotional exhaustion could be explained by the fact that JD-R model postulated that the main antecedents of burnout are job demands (Bakker & Demerouti, 2007; Bakker et al., 2014) as demonstrated also by the meta-analysis of Lee and Ashworth (1996) which showed that job demands are the most important predictor of burnout. Thus, Brase could be considered as a job demand as its effect is related only to emotional exhaustion and not to work engagement. The lack of association between the job demand Brase and work engagement is consistent with the JD-R model, which postulates that the most predictors of

work engagement are job resources. Moreover, this lack of association has been confirmed also by the results of a study of Schaufeli and Bakker (2004), who showed that also including job demands, job resources were the exclusive predictors of work engagement.

Concerning the moderation hypothesis, findings indicated that social support moderated the relationship between Brase and emotional exhaustion. Particularly, this means that between the Brase-workers, who experiences higher levels of social support report lower levels of emotional exhaustion respect to the workers with lower levels of social support. This result is in line with the literature on the JD-R model, which showed that social support could moderate the relationship between job demands and emotional exhaustion (e.g. Xanthopoulou et al., 2007). On the contrary, no support has been found for the moderation of social support from colleagues on work engagement, despite this interaction is one of the two possible interaction processes proposed in the JD-R model. This result suggests that the job demand considered (Brase) does not amplify the impact of social support on work engagement.

The present study suggests which kind of organizational initiatives could be deployed in order to enhance workers' well-being, despite the implementation of job demands. Especially, when it is not possible to modify job demands, interventions aiming to enhance specific job resources are useful in order to increase workers' well-being.

Bakker et al. (2014) proposed three kinds of interventions aiming to prevent burnout and foster work-engagement: optimizing job demands, increasing job resources and fostering personal resources. Results of the present study suggested that in this context is not possible to optimize job demands as the detected job demand is an essential part of the organization's strategy to decrease costs associated to human resources. Furthermore, organizational interventions aimed to fostering personal resources is suggested especially when lack of

important personal resources has been found as a result of an organizational assessment, thus also this kind of intervention should not fit results here presented.

However, implementing organizational interventions to increase job resources (such as social support from colleagues) could be effective in order to ensure workers' well-being.

Strengths and limitations

The main strengths of the present study are the sequential mixed methods design that allowed to identify job demands specific to the population under study, and the high participation and response rates (61.7% in qualitative study and 71.1% in quantitative study). Furthermore, the number of workers involved in the focus group is consistent with what it is suggested by the literature (Krueger & Casey, 2015). Moreover, most studies do not link psychosocial risk factors to the outcomes because national policies approaches encourage the use of standardized measures (Nielsen et al., 2010, Nielsen et al., 2014). Furthermore, it is the first time that mixed methods approach, together with the JD-R model and the StART method has been used to detect context-dependent job demands and job resources in order to design organizational initiatives aimed to enhance workers' well-being. The present study highlights the value of using both tailored measures and standardized measures in order to achieve a more reliable assessment of job demands and job resources in the organization and presented a way to manage them in organizational context integrating mixed methods research to JD-R model.

Some limitations of the study have to be acknowledged in interpreting the results. The first one is that only one item has been developed concerning the qualitative findings and this could partly affect the reliability of this research. Anyway, as the item developed is context-dependent, it is a valid measure used in this research. Furthermore, this study concerns only self-report data and no objective measures has been used. Moreover, the quantitative section of this study is cross-sectional thus it is not possible to comment on causality. Despite this, as

the psychosocial factors assessment is only the screening part which allows to design organizational initiatives, as initiatives have to be implemented the most promptly as possible to be effective, longitudinal approach rises time issues.

Direction for future research, practical implications and conclusion

Future research should consider all the process developed by the PIOP model in order to understand how the method used in the screening phase (i.e. the detection of contextual dependent factors) facilitate the development of realistic, context-dependent actions on how the organization may ensure worker well-being. Findings here presented could be useful for organizations that aim to enhance workers' well-being where it is not possible to decrease job demands. In conclusion, the main contribution of this paper is the demonstration of how a mixed methods approach, based on a strong theoretical framework (the JD-R model), can be used to identify context-dependent job demands.

Finally, this study confirms that mixed methods approach is useful in applied organizational research, for two main reasons. First, it allows detecting context-dependent variables. Second, it could be useful to design tailored organizational intervention activities to enhance workers' well-being.

The combined use of qualitative and quantitative approach provides a reliable way for organizations not only to detect potential risks in this specific population but it also provides useful suggestions on how to develop reliable and effective initiatives modelled on specific groups of workers in the organization in order to enhance well-being.

Conclusion

As previously discussed, workers' well-being has been extensively studied in the organisational psychology field under the name of work-related stress since many years. Also European and American agencies paid great attention on this topic, which becomes more relevant especially nowadays because changes in the labour market and the economic crisis could have negatively affected the quality of working life (Fraccaroli & Balducci, 2011). Despite this great attention, there were still unsolved issues concerning which factors and processes contribute to enhance well-being in the workplace and how to manage them. According to this, this thesis presented four different studies, which using both subjective and objective measures and qualitative and quantitative data, aimed to understand: a) the role of relevant antecedents (e.g. leadership, job demands, work-family conflict, social support etc.) and outcomes (e.g. workplace phobia, absenteeism etc.) of work-related stress; and b) how to manage psychosocial risk factors in the workplace.

Summary of the main findings

Particularly, the first study addressed the construct of leadership style in order to analyse its influence on workers' well-being. Despite an extensive literature has been published on how workers perceived the leadership styles of their supervisors, there is a lack of studies that investigated the possibility of a difference between how workers perceive their supervisor and how their supervisor perceive themselves as leaders. Thus, the first study was conducted on 24 leaders and their 468 employees, all of them working in grocery stores. Both the effect of leadership styles and the disagreement on leadership styles on individuals and work team outcomes have been tested.

Furthermore, as supervisors could operate under different conditions, also the role of work team size has been tested. Thus, the hypothesis of the first study presented in this thesis

concerned the analysis of: a) the role played by the disagreement on leadership styles (both transformational and transactional) between supervisors and their employees and work team size both on individual outcome (e.g. emotional exhaustion, work engagement and general health) and work team characteristics (e.g. conflict and social support between colleagues); b) work team size.

Results showed that, both transactional leadership and transformational leadership style affected conflict between colleagues, social support from co-workers, emotional exhaustion, work engagement and general health. In addition, also the disagreement on leadership styles showed significant relationships in the same direction. Furthermore, ANOVA analyses revealed that there was a difference between medium and small team size in all the variables considered except for the disagreement on transactional leadership style and the social support from colleagues.

In order to analyse the joint effect of the independent variables (i.e. disagreement on transformational and transactional leadership) considering also the workers belonging to their work teams, a multilevel analysis has been performed, which enabled to understand the role played by the independent variables considering the clustering effect.

Results of the multilevel analyses showed that the disagreement on transformational leadership, especially concerning conflict between colleagues, provided the strongest clustering effect (which means that the variability between groups is bigger compared to the variability within groups). Regarding individual outcomes, the stronger clustering effect was found between disagreement on transformational leadership style and emotional exhaustion. Results of this study highlighted that the bigger is the disagreement between how the supervisor perceive him/herself as a transformational leader, and how their employees perceive him/her as a transformational leader could affect the work team characteristics, and especially workers' well-being. Results provided by this first study contributed in

understanding the role played by transformational and transactional leadership style in workers' well-being.

The second study presented in this thesis focused on the health impairment process of the JD- R model especially considering the role of job demands, work-family conflict and emotional exhaustion in determining absenteeism measured as sickness leave duration.

The work-family conflict dimension is a relevant construct because of different reasons. The reason concerns the fact that work-family conflict has been considered as one of the most influencing factors leading to poor mental well-being. Analysing work-family conflict is relevant also from a social point of view, as in the actual 24/7 economy, employers often expect their employees to put in extra time and to take jobs with non-standard work schedules (Presser, 2005), and this could negative affect work-family interface and in turn workers' health (Olsen & Dahl, 2010). Furthermore, concerning the JD-R model, work-family conflict has been considered in different ways, as for example as a job demand (e.g. Simbula et al., 2011) or as a consequence of job demands (e.g. Olsen & Dahl, 2010).

Hence, the aim of this study was to better comprehend how job demands, work-family interface and workers' health could potentiate absenteeism in the workplace using the health impairment hypothesis of the JD-R model. The study was conducted on 245 workers and data were collected both through questionnaires (in order to measure perceptions about job demands, work-family conflict and emotional exhaustion) and through company records concerning sickness leave. In particular duration of sickness leave has been chose to measure absenteeism. In order to analyse the process that lead from job demands to absenteeism and the role played by work-family conflict and emotional exhaustion, a subsequent mediation has been computed. Results showed that both work-family conflict and emotional exhaustion subsequently mediate the relationship between job demands and absenteeism. In other words, despite no direct association has been found between job demands and absenteeism, results

showed that there is a process able to link those variables. Specifically, job demands affect work-family conflict, which in turn affects emotional exhaustion that in turn influences the duration of sickness leave. Furthermore, results showed that emotional exhaustion mediates the relationship between job demands and absenteeism, while work-family conflict does not.

Results of this study allowed for two main argumentations. The first one is that high job demands do not automatically lead to absenteeism, thus, decreasing job demands will probably do not mechanically decrease absenteeism in organizations. The second one is that work family conflict alone seems to not have a great impact on absenteeism, as it does not mediate the relationship between job demands and absenteeism. Therefore, a stronger role seems to be played by emotional exhaustion, which on the contrary, mediates the relationship between job demands and absenteeism. In conclusion, the second study contributed in enhancing the knowledge concerning the process that links job demands to absenteeism through the subsequent mediation of work-family conflict and emotional exhaustion.

The third study presented in this thesis considered absenteeism too, but specifically focuses on an under-recognized construct, which is workplace phobia. Workplace phobia has been defined as an anxiety disorder characterized by a phobic anxiety reaction concerning the stimulus workplace and occurs with panic-like reaction with physiological arousal when thinking of the workplace or approaching. Workplace phobia has always been studied only in clinical settings thus, this study analysed the role of workplace phobia in organizational context, considering it as an health outcome of the JD-R model, and including job demands (physical and psychological), job resources (social support from colleagues and from supervisor), emotional exhaustion, engagement and absenteeism measured with objective data on sickness leave duration. 739 workers belonging from a retail company voluntary participated in the study filled in a questionnaire. In addition to this, the company released the data concerning sickness leave during a period of one year. After having analysed the factor

structure of the workplace phobia scale in order to assess the scale reliability, a structural equation model analysis has been conducted in order to investigate the role of workplace phobia in the JD-R model. Results of this study showed that workplace phobia could be considered as an health outcome of the JD-R model and that job demands and job resources considered were appropriate to explain the process that could lead to workplace phobia and subsequently to absenteeism.

Last study presented concerned more in detail the management of psychosocial risk factors through the assessment of job demands and job resources in organizational contexts. The study has been developed in line with the great attention gave to work-related stress and well-being by governments' policies which in the last fifteen years had started considering stress as a central component of workers' well-being.

In the United States, stress started to be acknowledged by the National Institute of Occupational Safety and Health (NIOSH) in 1999 in relationship with health and also to potential injuries in the workplace. Later, also the European Union acknowledged stress defining the 'Autonomous Framework Agreement on Work-related Stress', which one of the main aim was to give attention to the prevention, elimination and reduction of problems concerning work-related stress through the implementation of measures which could be collective, individual or both. Those interventions could be introduced in the form of specific initiatives targeted at detecting stress antecedents, or as a part of a broader stress policy embracing preventive and responsive initiatives.

As dealing with work-related stress raised issues concerning thresholds, measures and types of a data, a new method has been recently published (StART method; Guglielmi et al., 2013a). Thus, as other methods showed low reliability (e.g. Balducci & Piattella, 2014), the last study focused on an application of the StART method using the JD-R model. This study showed how mixed methods research enables both the identification of particular job

demands and job resources on the workplace, which could influence workers' well-being. Moreover this study showed how this approach, which used both the StART method and the JD-R model, it is useful to provide suggestions to organizations on how they may enhance workers' well-being through the implementation of organizational initiatives. Following the exploratory sequential design, which is characterized by a qualitative stage followed by a quantitative one, the study firstly involved 37 workers who participated in 4 focus groups. Qualitative analyses highlighted the presence of a potential harmful job demand, particular of that context, which could negatively influenced the well-being of a specific group of workers in the organization. Subsequently, in order to test the qualitative findings a questionnaire was administrated to most of the workers belonging to that specific group.

Results showed that a specific job demand (called Brase) was related to emotional exhaustion but not to work engagement. Furthermore, as this specific job demand could not being modified, following the JD-R model, a hypothesis concerning which kind of job resources could buffer the impact of Brase on emotional exhaustion was developed. Findings showed that social support from colleagues moderated the relationship between Brase and emotional exhaustion. Particularly, workers whose work was affected by that specific job demand and that perceived lower levels of social support reported higher levels of emotional exhaustion.

Thus, results of this last study suggested that the exploratory sequential approach allowed detecting context-dependent factors, which could affect workers' well-being. Furthermore, findings suggested that using both the StART method and the JD- R model is useful also to design organizational initiatives in order to enhance workers' well-being.

Strengths and limitations

This thesis contributes to enhance knowledge on different aspects. First of all, important variables such as leadership have been studied in a new way, which highlighted the

role not only on the leadership per se, but also on the agreement on leadership styles between the leader and their employees in affecting workers' well-being. Furthermore, two of the studies presented used both subjective and objective data in order to increase the reliability of the results gained. Moreover, a new concept (workplace phobia), never studied before in organizational settings, has been analysed in order to increase the existing knowledge on health outcomes in the JD-R model. The thesis presented also a mixed methods study on how to manage psychosocial risk factors in the workplace. This study highlighted the added value of this kind of approach in order to detect and analyse context-specific job demands, which could affect workers' health. Moreover one of the studies presented has a longitudinal design.

The studies presented also some limitations. The first one is that, three of the four studies presented a cross-sectional design, which precludes the opportunity to establish the direction of the hypothesized causal relations. Furthermore, especially concerning the study presented in chapter 1, hypotheses were on data collected through questionnaires, which increase the chances of common method variance effects (Podsakoff et al., 2013). Furthermore, in the two studies that included objective data on sickness leave (presented in chapter 2 and 3) absenteeism was not controlled for its baseline. Another limitation is that most of the studies have been conducted in the retail sector, although all of them have been conducted in different companies. Thus, our study could be less generalizable and future studies should replicate hypotheses developed in this thesis in different organizational settings.

Practical implications and future research directions

The studies reported in this thesis have several practical implications. In particular, results of the study presented in chapter 1 suggested that when implementing organizational interventions or initiatives it is important to focus not only on training managers or supervisors in behaving as transformational or transactional leaders, but also on how to line

up their perceptions on the ones of their employees. This alignment could be very fruitful because leaders could count on more effective work teams and workers will be healthier. Future studies on this topic should consider also other type of measure such as direct observations of the leaders' behaviours through checklists in order to enhance the reliability of findings presented. Leadership is a key factor in determining workers' well-being. Also the Eurofound and EU-OSHA (2014) recently highlighted the role played by leadership in preventing psychosocial risks in the workplace.

Concerning results presented in chapter 2, findings have important implications for organisations that aim to reduce costs related to absenteeism, and improve productivity by changing the psychosocial work environment and, consequently, workers' well-being. Results of this study suggest that interventions aiming to reduce absenteeism should focus not only on the decrease of job demands and work-family conflict, but especially on the relationship between work-family conflict and emotional exhaustion. Future studies should replicate this study in other occupational sectors and using a long-term longitudinal design. Furthermore in the future also other extensions of the JD-R model using mediation in serial should be investigated.

The findings presented in chapter 3, highlighted the fact that workplace phobia could represent a relevant issue for organizations and workers' health. Organizational physicians should be aware of this phenomenon and able to detect it since the early onset, in order to monitor it and help workers in facing this disorder. Future studies should deeply analyse which factors are stronger related to workplace phobia and which kind of resources could more effectively buffer the level of emotional exhaustion and consequently of workplace phobia.

Findings presented in the last chapter highlighted the importance of detecting context-dependent factors in order to implement organizational initiatives aimed to enhance workers'

health. Furthermore, results provided useful suggestions on how to manage psychosocial risk factors through the detection and then the implementation of tailored organizational initiatives. As the approach used relies on the organizations' context-dependent characteristics, future studies should replicate this approach using the StART method and the JD-R model in other organizational contexts, considering also the PIOP model in its whole conceptualization.

In conclusion, results presented in this thesis answered both to open questions in the scientific literature and to the social request of managing psychosocial risk factors in the workplace in order to enhance workers' well-being.

References

- Ahola, K., Kivimäki, M., Honkonen, T., Virtanen, M., Koskinen, S., Vahtera, J., & Lönnqvist, J. (2008). Occupational burnout and medically certified sickness absence: a population-based study of Finnish employees. *Journal of psychosomatic research*, *64*, 185-193. doi:10.1016/j.jpsychores.2007.06.022
- Aiken, L. S., & West, S. G. (1991). Multiple regression: testing and interpreting interactions. Newbury Park: Sage.
- Allen, T. D., Herst, D. E. L., & Bruck, C. S., & Sutton, M. (2000). Consequences associated with work-to-family conflict: a review agenda for future research. *Journal of Occupational Health Psychology*, *5*, 278-308. doi: 10.1037/1076-8998.5.2.278
- American Psychological Association (2014). Stress in America. Are teens adopting adults' stress habits? Retrieved from <http://www.apa.org/news/press/releases/stress/2013/stress-report.pdf>
- Amason, A. C., (1996). Distinguishing the Effects of Functional and Dysfunctional Conflict on Strategic Decision Making: Resolving a Paradox for Top Management Teams. *The Academy of Management Journal*, *39*, 123-148. doi: 10.2307/256633
- American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders*. Arlington: American Psychiatric Publishing.
- Amstad, F. T., Meier, L. L., Fasel, U., Elfering, A., & Semmer, N. K. (2011). A meta-analysis of work-family conflict and various outcomes with a special emphasis on cross-domain versus matching-domain relations. *Journal of Occupational Health Psychology*, *16*, 151-169. doi:10.1037/a0022170
- Anagnostopoulos, F., Niakas, D. (2010). Job burnout, health-related quality of life, and sickness absence in Greek health professionals. *European Psychologist*, *15*, 132-141. doi:10.1027/1016-9040/a000013

- Arnold, K. A., Turner, N., Barling, J., Kelloway, E. K., McKee, M. C. (2007). Transformational well-being: the mediating role of meaningful work. *Journal of Occupational Health Psychology, 12*, 193-203. doi: 10.1037/1076-8998.12.3.193
- Avolio, B. J., Bass, A. B., & Jung, D. I. (1999). Re-examining the components of transformational and transactional leadership using the multifactor leadership questionnaire. *Journal of Occupational and Organizational Psychology, 72*, 441-462. doi: 10.1348/096317999166789
- Bakken, B., & Torp, S. (2012). Work engagement and health among industrial workers. *Scandinavian Journal of Organizational Psychology, 4*, 4-20.
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology, 22*, 309-328. doi: 10.1108/02683940710733115
- Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2003a). Dual processes at work in a call centre: An application of the job demands – resources model. *European Journal of Work and Organizational Psychology, 12*, 393-417. doi: 10.1080/13594320344000165
- Bakker, A. B., Demerouti, E., de Boer, E., Schaufeli, W. B. (2003b). Job demand and job resources as predictors of absence duration and frequency. *Journal of Vocational Behaviour, 62*, 341-356. doi: 10.1016/S0001-8791(02)00030-1
- Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology, 10*, :170-180. doi: 10.1037/1076-8998.10.2.170
- Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. I. (2014). Burnout and work engagement: The JD–R approach. *Annual Review of Organizational Psychology and Organizational Behaviour, 1*, 389-411. doi: 10.1146/annurev-orgpsych-031413-091235

- Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human resource management, 43*, 83-104. doi: 10.1002/hrm.20004
- Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational Psychology, 99*, 274. doi: 10.1037/0022-0663.99.2.274
- Balducci, C., Fraccaroli, F., & Schaufeli, W. B. (2010). Psychometric properties of the Italian version of the Utrecht Work Engagement Scale (UWES-9): A cross-cultural analysis, *European Journal of Psychological Assessment, 26*, 143-149. doi: 10.1027/1015-5759/a000020
- Balducci, C., & Piattella, M. (2014, September). Indagine esplorativa sulla validità e l'attendibilità della checklist INAIL per la valutazione dello stress da lavoro. In C. Balducci, & D. Guglielmi, *Stress da lavoro: alcune criticità (teoriche e metodologiche) nelle pratiche correnti di assessment*. Symposium conducted at the annual meeting of Associazione Italiana Psicologi, Cesena.
- Barbaranelli, C. (1997). *Analisi dei dati con SPSS*. Milano: Led Edizioni Universitarie
- Bass, B. M. (1985). *Leadership and Performance Beyond Expectations*. New York: Collier Macmillan.
- Bass, B. M., & Avolio, B. J. (1990). *Multifactor Leadership Questionnaire*. Palo Alto: Consulting Psychologist Press.
- Bass, B. M., & Avolio, B. J. (2000). *MLQ Multifactor Leadership Questionnaire*. Redwood City: Mind Garden.
- Bass, B.M., & Riggio, R. E. (2006). *Transformational Leadership*. Mahwah: Lawrence Erlbaum Associates.

- Bentler, P. M. (1990). Comparative fit indexes in structural equation models, *Psychological Bulletin*, 107, 238-246. doi: 10.1037//0033-2909.107.2.238
- Beukes, I., & Botha, E. (2013). Organisational commitment, work engagement and meaning of work of nursing staff in hospitals. *SA Journal of Industrial Psychology*, 39, 1-10. doi: 10.4102/sajip.v39i2.1144
- Bollen, K. A. (1989). A new incremental fit index for general structural models. *Sociological Methods and Research*, 17, 303-316. doi: 10.1177/0049124189017003004
- Borgogni, L., Galati, D., & Petitta, L. (2005). Il questionario Checkup organizzativo. Manuale dell'adattamento Italiano. Firenze: O. S. Giunti.
- Bourbonnais, R., & Mondor, M. (2001). Job strain and sickness absence among nurses in the province of Québec. *American Journal of Industrial Medicine*, 39, 194-202. doi: 10.1002/1097-0274(200102)39:2<194::AID-AJIM1006>3.0.CO;2-K
- Breevaart, K., Bakker, A. B., Hetland, J., & Demerouti, E. (2014). Daily transformational leadership and daily employee engagement. *Journal of Occupational and Organizational Psychology*, 87, 138-157. doi: 10.1111/joop.12041
- Burns, J.M. (1978). *Leadership*. New York: Harper & Row.
- Byrne, B. M. (2001). Structural Equation Modelling with AMOS, EQS, and LISREL: Comparative approaches to testing for the Factorial Validity of measuring instrument. *International Journal of Testing*, 1, 55-86. doi: 10.1207/S15327574IJT0101_4
- Cenni, P., & Barbieri, F. (1997). *Karasek's Job Content Questionnaire: Una versione italiana tradotta e adattata*. Unpublished Research Report.
- Clays, E., Kittel, F., Godin, I., De Bacquer, D., & De Backer, G. (2009). Measures of work-family conflict predict sickness absence from work. *Journal of Occupational and Environmental Medicine*, 51, 879-886. doi: 10.1097/JOM.0b013e3181aa5070

- Cooper, C. L., Liukkonen, P., & Cartwright, S. (1996). *Stress prevention in the workplace: assessing the costs and benefits to organizations*. Loughlinstown: European Foundation for the Improvement of Living and Working Conditions.
- Cox, T., Griffiths, A., & Rial-Gonzalez, E. (2000). *Work-related Stress*. Luxembourg: Official Publications of the European Communities.
- Creswell, J. W., & Plano Clarke, W. L. (2011). *Designing and conducting mixed methods research*. Thousand Oaks: Sage Publication.
- Daniels, K. (2011). Stress and well-being are still issues and something still needs to be done: or why agency and interpretation are important for policy and practice. In G. P. Hodgkinson, & J. K. Ford, (Eds.) *Review of industrial and Organizational Psychology* (pp. 1-45). Chichester: Wiley
- de Jonge, J., Le Blanc, P. M., Peeters, M. C., & Noordam, H. (2008). Emotional job demands and the role of matching job resources: A cross-sectional survey study among health care workers. *International Journal of Nursing Studies*, *45*, 1460-1469. doi: 10.1016/j.ijnurstu.2007.11.002
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. (2001). The Job-Demands-Resources model of burnout. *Journal of Applied Psychology*, *86*, 499-512. doi: 10.1037//0021-9010.86.3.499
- Demerouti, E., Bouwman, K., & Sanz-Vergel, A. I. (2011). Job resources buffer the impact of work-family conflict on absenteeism in female employees. *Journal of Personnel Psychology*, *10*, 166-176. doi: 10.1027/1866-5888/a000044
- Donders, N. (2005). *Psychosocial Workload, Work-Family Interference and Health. Determinants of Sick Leave in University Employees*. Nijmegen: Radboud University.

- Doucet, O., Poitras, J., & Chênevert, D. (2008). The impacts of leadership on workplace conflicts. *International Journal of Conflict Management*, 20, 340-354. doi: 10.1108/10444060910991057
- Einarsen, S., Hoel, H., Zapf, D., & Cooper, C. L. (2011). The concept of bullying and harassment at work: The European tradition. *Bullying and harassment in the workplace*, pp. 3-39. doi: 10.1201/ebk1439804896-3
- Elshout, R., Scherp, E., van der Feltz-Cornelis, C. M. (2013). Understanding the link between leadership style, employee satisfaction, and absenteeism: a mixed methods design study in a mental care institution. *Neuropsychiatric Disease and Treatment*, 9, 823-837. doi: 10.2147/ndt.s43755
- European Agency for Safety and Health at Work (2013). Healthy workplaces. Managing stress and Psychosocial risks at work. Retrieved from https://www.healthy-workplaces.eu/en/campaign-material/introducing-the-campaign-guide_
doi:10.2802/16611
- European Agency for Safety and Health at Work (2014). *Management Leadership*. Retrieved from <https://osha.europa.eu/en/topics/management-leadership>
- Eurofound (2012). *Health and well-being at work: A report based on the fifth European Working Conditions Survey*, Dublin. Retrieved from: http://eurofound.europa.eu/sites/default/files/ef_files/pubdocs/2013/02/en/1/EF1302EN.pdf
- Eurofound, & EU-OSHA (2014). *Psychosocial risks in Europe: Prevalence and strategies for prevention*. Luxembourg: Publications Office of the European Union.
- ETUC, UNICE, UEAPME, CEEP (2004) Autonomous Framework Agreement on Work-related Stress. Retrieved from <http://ec.europa.eu/social/BlobServlet?>

- Fraccaroli, F., & Balducci, C. (2011). *Stress e rischi psicosociali nelle organizzazioni*. Bologna: il Mulino
- Fraccaroli, F., & Schadee, H. M. (1993). Confirmatory factor analysis applied to the General Health Questionnaire: A Comparison of the English and Italian versions. *Giornale italiano di Psicologia, 20*, 319-388.
- Frone, M. R., Russell, M., & Cooper, M. L. (1992). Antecedents and outcomes of work - family conflict: Testing a model of the work-family interface. *Journal of Vocational Behaviour, 50*, 145-167. doi: 10.1037//0021-9010.77.1.65
- Ghadi, M., Fernando, M., & Caputi, P. (2013). Describing work as meaningful: Towards a conceptual clarification. 27th Annual British Academy of Management Conference, University of Liverpool.
- Goldberg, D. (1992). *General Health Questionnaire (GHQ-12)*. Windsor: NFER-Nelson.
- González-Romà, V., Schaufeli, W. B., Bakker, A. B., Lloret, S. (2006). Burnout and work engagement: Independent factors or opposite poles? *Journal of Vocational Behavior, 68*, 165-174. doi: 10.1016/j.jvb.2005.01.003
- Gospel, H. (2003). *Quality of working life: A review of changes in work organization, condition of employment and work-life arrangements*. Conditions of Work and Employment Series, n°1, International Labour Office. Retrieved from http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_travail_pub_1.pdf.
- Grandey, A. A., & Cropanzano, R. (1999). The Conservation of Resources Model applied to Work-family conflict and strain. *Journal of Vocational Behaviour, 54*, 350-370. doi: 10.1006/jvbe.1998.1666

- Greenhalgh, J. (2014). Realist synthesis. In P. K. Edwards, J. O'Mahoney, & S. Vincent (Eds.) *Studying Organizations Using Critical Realism. A Practical Guide*. Oxford: Oxford University Press.
- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, *10*, 76-88. doi: 10.5465/amr.1985.4277352
- Guglielmi, D., Panari, C., Simbula, S., & Mazzetti, G. (2014). Is it possible to motivate teacher in the Italian context? The role of resources and organizational identification. *Procedia – Social and Behavioral Sciences*, *116*, 1842-1847. doi: 10.1016/j.sbspro.2014.01.481
- Guglielmi, D., Paplomatas, A., Simbula, S., Depolo, M. (2011). Prevenzione dello stress lavoro correlato: validazione di uno strumento per la valutazione dei rischi psicosociali nella scuola. *Psicologia della salute* *3*, 53-74. doi: 10.3280/PDS2011-003003
- Guglielmi, D., Simbula, S., Mazzetti, G., Tabanelli, M. C., & Bonfiglioli, R. (2013b). When the job is boring: the role of boredom in organizational contexts. *Work*, *45*, 311-322. doi: 10.3233/WOR-121528
- Guglielmi, D., Simbula, S., Vignoli, M., Bruni, I., Depolo, M., Bonfiglioli, R., ... Violante, F. S. (2013a). Solving a methodological challenge in work stress evaluation with the stress assessment and research toolkit (StART): A study protocol. *Journal of Occupational Medicine and Toxicology*, *8*. doi: 10.1186/1745-6673-8-18
- Haines, J., Williams, C. L., & Carson, J. M. (2002). Workplace Phobia: psychological and Psychophysiological Mechanism. *International Journal of Stress Management*, *9*, 129-145. doi: 10.1023/A:1015518030340

- Hakanen, J. J., & Schaufeli, W. B. (2012). Do burnout and work engagement predict depressive symptoms and life satisfaction? A three-wave seven-year prospective study. *Journal of Affective Disorders, 141*, 415-424. doi: 10.1016/j.jad.2012.02.043
- Hammer, T. V., Landau, J. (1981). Methodological issues in the use of absence data. *Journal of Applied psychology, 66*, 574-581. doi: 10.1037/0021-9010.66.5.574
- Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling. Retrieved from <http://www.afhayes.com/public/process2012.pdf>
- Hillhouse, J. J., Adler, C. M., Walters, D. N. (2000). A simple model of stress, burnout and symptomatology in medical residents: a longitudinal study. *Psychology, Health & Medicine, 5*, 63-73. doi: 10.1080/135485000106016
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*, 513-524. doi: 10.1037/0003-066x.44.3.513
- Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of general psychology, 6*, 307-324. doi: 10.1037//1089-2680.6.4.307
- Hox, J. J. (2002). *Multilevel analysis. Techniques and applications (1st Edition)*. Mahwah: Lawrence Erlbaum.
- Hox, J. J. (2010). *Multilevel analysis. Techniques and applications (2nd Edition)*. New York: Routledge.
- International Labour Organization (1986). *Psychosocial Factors at Work: Recognition and Control. Occupational Safety and Health series, 56*. Geneva: International Labour Office.
- International Labour Organization (1992). *Preventing Stress at Work. Conditions of Work Digest, 11*. Geneva: International Labour Office.

- Ishizaki, M., Kawakami, N., Honda, R., Nakagawa, H., Morikawa, Y., & Yamada, Y. (2006). Psychosocial work characteristics and sickness absence in Japanese employees. *International Archives of Occupational and Environmental Health*, 79, 640-646. doi: 10.1007/s00420-006-0095-6
- Iverson I. D., Olekalns, M., & Erwin, P. J. (1998). Affectivity, organizational stressors, and absenteeism: A causal model of burnout and its consequences. *Journal of Vocational Behaviour*, 52, 1-23.
- Jansen, N. W. H., Kant, I. J., van Amelsvoort, L. G. P. M., Kristensen, T. S., Swaen, G. M. H., & Nujhuis, F. J. N. (2006). Work-family conflict as a risk factor for sickness absence. *Occupational and Environmental Medicine*, 63, 488-494. doi: 10.1136/oem.2005.024943
- Johns, G. (1997). Contemporary research on absence from work: Correlates, causes and consequences. *International Review of Industrial and Organizational Psychology*, 12, 115-173.
- Johnson, J. V., & Hall, E. M. (1988). Job strain, workplace social support, and cardiovascular disease: a cross-sectional study of a random sample of the Swedish working population. *American Journal of Public Health*, 78, 1336-1342.
- Johnson, B., & Turner, L. (2003). Data collection strategies in mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioural research* (pp. 297-319). Thousand Oaks, CA: Sage.
- Jöreskog, K. G., & Sörbom, D. (1993). *Lisrel 8: Structural Equation Modelling with the SIMPLIS Command Language*. Chicago: Scientific Software International.
- Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24, 285-308.

- Karasek, R. A. (1985). *Job content questionnaire and user's guide*. Lowell: University of Massachusetts.
- Karasek, R. A., & Theorell, T. (1990). *Healthy work: stress, productivity, and the reconstruction of working life*. New York: Basic Books.
- Kondo, K., Kobayashi, Y., Hirokawa, K., Tsutsumi, A., Kobayashi, F., Haratani, T., Araki, S., & Kawakami, N. (2006). Job strain and sick leave among Japanese employees: A longitudinal study. *International Archives of Occupational and Environmental Health*, 79, 213-219. doi: 10.1007/s00420-005-0027-x
- Kristensen, T. S. (1991). Sickness absence and work strain among Danish slaughterhouse workers: An analysis of absence from work regarded as coping behaviour. *Social Science & Medicine*, 32, 15–27. doi: 10.1016/0277-9536(91)90122-s
- Krueger, R. A., & Casey, M. A. (2015). *Focus Groups: A practical guide for applied research*. Newcastle: Sage.
- Kunze, F., Boehm, S., & Bruch, H. (2013). Organizational performance consequences of age diversity: Inspecting the role of diversity-friendly HR policies and top managers' negative age stereotypes. *Journal of Management Studies*, 50, 413-442. doi: 10.1111/joms.12016
- Lazarus, R. S., & Folkman, S. (1966). *Psychological stress and the coping process*. New York: McGraw Hill.
- Lee, R. T., & Ashforth, B. E. (1996). A meta-analytic examination of the correlates of the three dimensions of job burnout. *Journal of applied Psychology*, 81(2), 123. doi: 10.1037//0021-9010.81.2.123
- Leka, S., Griffiths, A., & Cox, T. (2003). *Work organisation and stress*. Geneva: Publications of the World Health Organisations. Retrieved from http://www.who.int/occupational_health/publications/en/oehstress.pdf

- Leonardi, M., Pagani, M., Giovannetti, A. M., Raggi, A., & Sattin, D. (2013). Burnout in healthcare professionals working with patients with disorders of consciousness. *Work: A Journal of Prevention, Assessment and Rehabilitation*, 45(3), 349-356. doi: 10.3233/WOR-121539
- Li, G., Shang, Y., Liu, H., & Xi. (2013). Differentiated transformational leadership and knowledge sharing: a cross-level investigation. *European Management Journal*, 32, 554-563. doi: 10.1016/j.emj.2013.10.004
- Lidwall, U., Marklund, S., & Voss, M. (2009). Work-family interface and long-term sickness absence: a longitudinal cohort study. *The European Journal of Public Health*, 20, 676-681. doi: 10.1093/eurpub/ckp201
- Linden, M., & Muschalla, B. (2007). Anxiety disorders and workplace-related anxieties. *Journal of Anxiety Disorders*, 21, 467-474. doi: 10.1016/j.janxdis.2006.06.006
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1996) *MBI: The Maslach Burnout Inventory: Manual*. Palo Alto: Consulting Psychologists Press
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*. 52, 397-422. doi: 10.1146/annurev.psych.52.1.397
- McDaid, D. (2008). Mental health reform: Europe at the cross-roads. *Health Economics, Policy and Law*, 3, 219-228. doi: 10.1017/s1744133108004520
- Meijman, T. F., & Mulder, G. (1998). Psychological aspects of workload. In P. J. D. Drenth, H. Thierry, & C. J. de Wolff (Eds.), *Handbook of work and organisational psychology* (5-33). Howe: Psychology Press/Erlbaum.
- Moeller, C., & Chung-Yan, G. A. (2013). Effects of social support on professors' work stress. *International Journal of Educational Management*, 27, 188-202. doi: 10.1108/09513541311306431

- Molina-Azorin, J. F. (2012). Mixed methods research in strategic management: Impact and applications. *Organizational Research Methods*, 15(1), 33-56. doi: 10.1177/109442811039302
- Muschalla, B. (2008). *Workplace-related anxieties and workplace phobia. A concept of domain-specific mental disorders* (Doctoral Dissertation). Retrieved from Institutional Repository of the Potsdam University.
- Muschalla, B. (2009). Workplace Phobia. *German Journal of Psychiatry*, 12, 45-53.
- Muschalla, B., & Linden, M. (2008). The Job-Phobia-Scale. A screening instrument in medical rehabilitation. *Ärztliche Psychotherapie* 3, 258-262.
- Muschalla, B, & Linden, M. (2009). Workplace phobia. A first explorative study on its relation to established anxiety disorders, sick leave, and work-directed treatment. *Psychology, Health & Medicine*, 14, 591-605. doi: 10.1080/13548500903207398.
- Muschalla, B, & Linden, M. (2014). Workplace phobia, workplace problems, and work ability among primary care patients with chronic mental disorders. *The Journal of the American Board of Family Medicine*, 27, 486-494. doi: 10.3122/jabfm.2014.04.130308
- National Institute for Occupational Safety and Health (1999). *Stress... at work* (Publication no.99-101). Retrieved from <http://www.cdc.gov/niosh/docs/99-101/pdfs/99-101.pdf>
- Nielsen, K., Abildgaard, J. S., & Daniels, K. (2014). Putting context into organizational intervention design: Using tailored questionnaires to measure initiatives for worker well-being. *Human relations*, 67, 1537-1560. doi: 10.1177/0018726714525974
- Nielsen, K., Randall, R., Holten, A. L., & González, E. R. (2010). Conducting organizational-level occupational health interventions: What works? *Work & Stress*, 24(3), 234-259. doi: 10.1080/02678373.2010.515393

- Nielsen, K., Stage, M., Abildgaard, J. S., & Brauer, C. V. (2013). Participatory intervention from an organizational perspective: Employees as active agents in creating a healthy work environment. In G. F. Bauer, & G. J. Jenny (Eds.) *Salutogenic Organizations and change. The Concepts Behind Organizational Health Intervention Research*. (pp. 327-350. Dodrecht: Springer. doi: 10.1007/978-94-007-6470-5_18
- North, F. M., Syme, S. L., Feeney, A., Head, J., Shipley, M. J., & Marmot, M. G. (1993). Explaining socioeconomic differences in sickness absence: the Whitehall II study. *British Medical Journal*, 306, 361–366. doi: 10.1136/bmj.306.6874.361
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York: McGraw-Hill.
- Olsen, K. M., & Dahl, S. (2010). Working time: Implications for sickness absence and the work-family balance. *International Journal of social Welfare*, 19, 45-53. doi: 10.1111/j.1468-2397.2008.00619.x
- Panari, C., Guglielmi, D., Ricci, A., Tabanelli, M. C., & Violante, F. S. (2012). Assessing and improving health in the workplace: An integration of subjective and objective measures with the STress assessment and research toolkit (St.A.R.T.) method. *Journal of Occupational Medicine and Toxicology*, 7(1). doi: 10.1186/1745-6673-7-18. doi: 10.1186/1745-6673-7-18
- Pawson, R. and Tilly, N. (1997) *Realistic Evaluation*. London: Sage.
- Pearce, C. L., & Herbik, P. A. (2004). Citizenship behavior at the team level of analysis: The effects of team Leadership, Team Commitment, Perceived team support, and team size, *The journal of Social Psychology*. 144, 293-310. doi: 10.3200/socp.144.3.293-310
- Peirò, J. M., & Molina, C. (2013). A debate in Europe, the state of scientific research on psychosocial risk assessment at work environments. In UGF (Ed.), *International yearbook on psychosocial risks prevention and quality of life at work. European*

development of psychosocial risks in Europe, the state of scientific research and institutional experiences (pp. 11-15). ISSN: 2173-0830

- Pejtersen, J.H., & Kristensen, T.S. (2009). The development of psychosocial work environment in Denmark from 1997 to 2005. *Scandinavian Journal of Work Environment and Health*, 35, 282-293. doi: 10.5271/sjweh.1334
- Pirani, E., & Salvini, S. (2015). Is temporary employment damaging to health? A longitudinal study on Italian workers. *Social Science & Medicine*, 124, 121-131. doi: 10.1016/j.socscimed.2014.11.033
- Podsakoff, P. M., Mac Kanzie, S. M., Lee, J. & Podsakoff, N. P. (2003). Common method variance in behavioural research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879-903. doi: 10.1037/0021-9010.88.5.879
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behaviour Research Methods, Instruments, & Computers*, 36, 717-731. doi: 10.3758/bf03206553
- Presser, H. B. (2005). Embracing Complexity: Work Schedules and Family Life in a 24/7 Economy. In S. Bianchi, L. Casper, R. King (Eds.), *Work, Family, Health and Well-Being* (pp. 43-88). New Jersey: Lawrence Erlbaum Associates.
- Proost, K., De Witte, H., De Witte, K., & Schreurs, B. (2010). Work–family conflict and facilitation: The combined influence of the job demand–control model and achievement striving. *European Journal of Work and Organizational Psychology*, 19, 615-628. doi: 10.1080/13594320903027826
- Purvanova, R. K., & Muros, J. P. (2010). Gender differences in burnout: A meta-analysis. *Journal of Vocational Behavior*, 77(2), 168-185. doi: 10.1016/j.jvb.2010.04.006

- Rafferty, A. E. & Griffin, M. A. (2006). Refining individualized consideration: distinguish developmental leadership and supportive leadership. *Journal of Occupational and Organizational Psychology*, 79, 37-61. doi: 10.1348/096317905x36731
- Rauhala, A., Kivimaki, M., Fagerstrom, L., Elovainio, M., Virtanen, ... Kinnunen, J. (2007). What degree of work overload is likely to cause increased sickness absenteeism among nurses? Evidence from the RAFAELA patient classification system. *Journal of Advanced Nursing*, 57, 286–295. doi: 10.1111/j.1365-2648.2006.04118.x
- Rial-González, E., Cockburn, W., & Irastorza, X. (2010). European Survey of Enterprises on New and Emerging Risks. Managing safety and health at work. Luxembourg: Publication Office of the European Union. Retrieved from https://osha.europa.eu/en/publications/reports/esener1_osh_management
- Sarros, J. C., Gray, J., & Densten, I. L. (2002). Leadership and its impact on organizational culture, *Journal of International Business Studies*, 10, 1-26.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of organizational Behavior*, 25(3), 293-315. doi: 10.1002/job.248
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire a cross-national study. *Educational and psychological Measurement*, 66, 701-716. doi: 10.1177/0013164405282471
- Schaufeli, W. B., Bakker, A. B., & van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behaviour*, 30, 893-917. doi: 10.1002/job.595
- Schaufeli, W. B., Leiter, M. P., Maslach, C., & Jackson, S. E. (1996). The MBI General Survey. In C. Maslach, S. E. Jackson, & M. P. Leiter (Eds.) *The Maslach Burnout Inventory*, Palo Alto: Consulting Psychologist Press.

- Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the Job Demands-Resources model: implications for improving work and health. In G. F. Baur, & O. Hämming (Eds.), *Bridging Occupational, Organizational and Public Health: A transdisciplinary approach* (43-67). Dordrecht: Springer. doi: 10.1007/978-94-007-5640-3_4
- Schaufeli, W. B., Taris, T. W., & van Rhenen, W. (2008). Workaholism, burnout, and work engagement: Three of a kind or three different kinds of employee well-being? *Applied Psychology: An International Review*, 57, 173-203. doi: 10.1111/j.1464-0597.2007.00285.x
- Selye, H. (1936). A syndrome produced by diverse nocuous agents. *Nature*, 138, 32. doi: 10.1038/138032a0
- Selye, H. (1946). The general adaptation syndrome and the diseases of adaptation. *Journal of Clinical Endocrinology and Metabolism*, 6, 117-230. doi: 10.1210/jcem-6-6-117
- Schütte, S., Chastang, J., Malard, L., Parent-Thirion, A., Vermeulen, G., & Niedhammer, I. (2014). Psychosocial working conditions and psychological well-being among employees in 34 European countries. *International Archives of Occupational and Environmental Health*, 87, 1-11. doi: 10.1007/s00420-014-0930-0
- Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions at work, *Journal of Occupational Health Psychology*, 1, 27-43. doi: 10.1037//1076-8998.1.1.27
- Siegrist, J., Wege, N., Pühlhofer, F., & Wahrendorf, M. (2009). A short generic measure of work stress in the era of globalization: effort-reward imbalance. *International Archives of Occupational and Environmental Health*, 82, 1005-1013. doi: 10.1007/s00420-008-0384-3

- Skogstadt, A., Einarsen, S., Torsheim, T., Aasland, M.S., & Hetland, H. (2007). The destructiveness of laissez-faire leadership behaviour. *Journal of occupational health psychology, 12*, 80-92. doi: 10.1037/1076-8998.12.1.80
- Simbula, S., Mazzetti, G., & Guglielmi, G. (2011). Work-family conflict, burnout and work engagement among teachers: The moderating effect of job and personal resources. *Avances En Psicologia Latinoamericana, 29*, 302-316.
- Smulders, P. G. V., Nijhuis, F. J. N. (1999). The job demand job control model and absence behavior: results of a 3-year longitudinal study. *Work & Stress 13*, 115-131. doi: 10.1080/026783799296093
- Steiger, J. H. (1990). Structural model evaluation and modification: an interval estimation approach. *Multivariate Behavioural Research, 25*, 173-180. doi: 10.1207/s15327906mbr2502_4
- Stewart, W. F., Ricci, J. A., Chee, E., Hahn, S. R., Morganstein. D. (2003). Cost of lots productive work time among US workers with depression. *Journal of American Medical Association, 289*, 3135-3144. doi: doi:10.1001/jama.289.23.3135.
- Sutherland, V., & Cooper, C. L. (1990). *Understanding stress a psychological perspective for health professionals*. London: Chapman and Hall Publishing.
- Sverke, M. (2009). The importance of psychosocial work environment for employee well-being and work motivation. *Scandinavian Journal of Work Environment and Health, 35*, 241-243. doi: 10.5271/sjweh.1336
- Tabachnick, B., & Fidell, L. (1983). *Using multivariate statistics*. New York: Harper & Row.
- Tabanelli, M. C., Depolo, M., Cooke, R. M. T., Sarchielli, G., Bonfiglioli, R., Mattioli, S., & Violante, F. S. (2008). Available instruments for measurement of psychosocial factors in the work environment. *International Archives of Occupational and Environmental Health, 82*(1), 1-12. doi: 10.1007/s00420-008-0312-6

- Tse, H. H. M., & Chiu, W. C. K. (2014). Transformational leadership and job performance: a social identity perspective. *Journal of business research*, 67, 2827-2835. doi: 10.1016/j.jbusres.2012.07.018
- Tucker, L. R. & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis, *Psychometrika*, 38, 1-10. doi: 10.1007/bf02291170
- Van Dam, K., Oreg, S., & Schyns, B. (2008). Daily work contexts and resistance to organizational change: The role of leader–member exchange, development climate, and change process characteristics. *Applied Psychology*, 57(2), 313-334. doi:10.1111/j.1464-0597.2007.00311.x
- Van Dierendonck, D., Schaufeli, W. B., & Buunk, B. P. (2001). Burnout and inequity among human service professionals: A longitudinal study. *Journal of Occupational Health Psychology*, 6, 43-52. doi: 10.1037/1076-8998.6.1.43
- Wang, J., Schmitz, N., Smailes, E., Sareen, J., & Patten, S. (2010). Workplace characteristics, depression, and health-related presenteeism in a general population sample. *Journal of Occupational and Environmental Medicine*, 52, 836-842. doi: 10.1097/JOM.0b013e3181ed3d80
- Weick, K. (1990). The Vulnerable System: An Analysis of the Tenerife Air Disaster. *Journal of Management*, 16(3), 571-593. doi: 10.1177/014920639001600304
- West, M., Dawson, J., Admasachew, L., & Topakas, A. (2011). *NHS Staff Management and Health Service Quality. Results from the NHS Staff Survey and related data*. London: Department of Health. Retrieved from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/215455/dh_129656.pdf
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2008). Working in the sky: A diary study on work engagement among flight attendants. *Journal of*

Occupational Health Psychology, 13, 345-356. doi: 0.1037/1076-8998.13.4.345

- Xanthopoulou, D., Bakker, A. B., Dollard, M. F., Demerouti, E., Schaufeli, W. B., Taris, T. W., & Schreurs, P. J. (2007). When do job demands particularly predict burnout? The moderating role of job resources. *Journal of Managerial Psychology*, 22(8), 766-786. doi: 10.1108/02683940710837714
- Yammarino, F. J., & Bass, B. M. (1990). Long-term forecasting of transformational leadership and its effects among naval officers. In K.E. Clark, & M. B. Clark (Eds.) *Measures of Leadership* (975-995). West Orange: Leadership Library of America.
- Yammarino, F.J., Spangler, W. D., Bass, B. M. (1993). Transformational leadership and performance: a longitudinal investigation. *The Leadership Quarterly*, 4, 81-108. doi: 10.1016/1048-9843(93)90005-E
- Yang, L. R., Huang, C. F., & Wu, K. S. (2011) The association among project manager's leadership style, teamwork and project success. *International journal of Project Management*, 29, 258-267. doi: 10.1016/j.ijproman.2010.03.006
- Zopiatis, A., & Constantis, P. (2010). Leadership styles and burnout: is there an association? *International Journal of Contemporary Hospitality Management*, 22, 300-320. doi: 10.1108/09596111011035927
- Zurlo, M. C., Pes, D., & Siegrist, J. (2010). Validity and reliability of the effort-reward imbalance questionnaire in a sample of 673 Italian teachers. *International Archives of Occupational and Environmental Health*, 83, 665-674. doi: 10.1007/s00420-010-0512-8
- Zyzanski, S. J., Flocke, S. A., & Dickinson, L. M. (2004). On the nature and analysis of clustered data. *Annals of Family Medicine*, 2, 199-200. doi: 10.1370/afm.197

Appendix

Appendix A - Workplace Phobia Scale (Muschalla & Linden, 2008).

Item	English	Italian
1	When thinking about my workplace, everything in my body is tense	<i>Quando penso al mio luogo di lavoro sento tutto il mio corpo teso</i>
2	When imagining having to pass a complete working day at this workplace, I get feelings of panic	<i>Quando penso che devo trascorrere un'intera giornata lavorativa in questo luogo provo emozioni di panico</i>
3	In special situations at the workplace I am afraid of getting symptoms like trembling, blushing, sweating, heart beating	<i>In situazioni specifiche nel posto di lavoro ho timore di avere sintomi come tremore, rossore, sudorazione, batticuore</i>
4	I rather take a roundabout way instead of passing the street where my workplace is situated	<i>Preferirei fare delle deviazioni piuttosto che passare dalla strada dove è situato il mio luogo di lavoro</i>
5	My sleep is worse before working days in contrast to non-working-days	<i>Il mio sonno è disturbato prima dei giorni lavorativi rispetto ai giorni di riposo</i>
6	I feel tense when entering public places (like the supermarket of my town) where I could meet colleagues or superiors	<i>Mi sento teso quando entro nei luoghi pubblici (come il supermercato della mia città) dove posso incontrare colleghi o superiori</i>
7	Whenever possible, I avoid coming near to the site of my workplace	<i>Quando è possibile, evito di passare vicino al mio luogo di lavoro</i>
8	I had to go on sick leave once or for several times because I could not stand any longer the problems at my workplace	<i>Ho dovuto mettermi in malattia una o più volte perché non potevo più sopportare i miei problemi al lavoro</i>
9	On my way to my workplace I would rather turn and walk back	<i>Quando sono per strada per andare al lavoro preferirei girarmi e tornare indietro</i>
10	After work I hurry up more than others just to get away from that place	<i>Dopo il lavoro ho più fretta di altri di allontanarmi da quel luogo</i>
11	While working, I am always paying attention what could happen next	<i>Mentre sto lavorando faccio sempre attenzione a cosa potrebbe succedere dopo</i>
12	I feel severely uncomfortable and tense when I am at my workplace	<i>Mi sento molto a disagio e teso/a quando sono nel mio luogo di lavoro</i>
13	I feel severely uncomfortable and tense when I think of my workplace	<i>Mi sento molto a disagio e teso/a quando penso al mio luogo di lavoro</i>

Notes. Likert scale (1 = 'do not agree at all' to 5 = 'totally agree')