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Occupational Stress: Main Theoretical Models with Particular Relevance to the Nursing Profession

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors contributed to the article equally, read and approved the final manuscript.

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ABSTRACT

Aims: The main aim of this critical review is to cite, analyze and evaluate the core theoretical models on occupational stress with particular reference to the nursing profession.
Methodology: A systematic search was undertaken which yielded 84 articles that were finally reduced to 39. Furthermore, the results were elaborated upon further to form a concise table on theoretical models for occupational stress in the nursing profession. The nine theoretical models were elaborated further in chronological date order.
Results: there are 8 main theoretical models that explore emotional exhaustion as characterized by a marked lack of physical energy, and a feeling that there are no further reserves or resources from which to renew his energy. In general, the individual feels that he or she is no longer in the mood required to make an emotional investment in his or her work and is further suffering from the demands of his or her clients and/or the wider working environment. Perhaps the most unpleasant thing is that he cannot foresee a solution to such problems and loses perspective on what the next day may hold.
Conclusions: Emotional exhaustion and depersonalization are the two stages that preceded professional incapacitation and a worker's sense of diminished personal achievements where hope is lacking. Therefore, active measures need to be taken by management and other coworkers who might identify such a problem in order to take steps to protect and ease the stress so that much needed staff can be retained. The recent Covid-19 pandemic has dictated that nursing staff retention is a critical issue on a global scale.

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1. INTRODUCTION

Today's, workforce environment is one of the most prevalent sources of stress, and the relationships that workers develop within it, the nature of their work and the potential problems they encounter within it, have been shown to significantly affect their daily routine and quality of life [1]. Profession-related stress has been and continues to be a highly topical subject of investigation especially under the light of the economic crisis that starting in 2008 which has confronted several states at global level, forcing private and public organizations to make significant changes to the labor side. The main features of these changes were the insecurity caused to workers through job losses, marked reduction in their earnings and benefits, increasing unemployment rates and a number of other common situations which have been shown to exacerbate stress [2].

It has also been shown that the effects of occupational stress on the workforce can relate to high financial costs on national health systems and insurance systems on an international scale, since they are linked to psychomotor diseases and consequently to increased costs of healthcare, low productivity, poor quality of work and early retirement [3]. According to Richardson & Rothstein (2008) it was specifically calculated that in the US, the effects of occupational stress cost the national economy more than $300 billion each year, due to absenteeism, reduced productivity, resignations and additional medical, legal or insurance costs [4]. In another relatively recent assessment in the UK, Chirico (2017) has estimated that 40% of work-related illnesses, as well as 50-60% of work absences, are due to occupational stress, with the corresponding annual costs exceeding 530 million pounds [5]. In a ten-year study, Greece, has one of the highest rates of occupational related stress ratios in Europe which, in certain employment sectors, affects 55% of the workforce [6].

When examining the link between professional incapacitation and work-related stress, the former appears to be a consequence of the latter over long term, and has now been established observed as a main concern within the field of occupational medicine [7]. Professional incapacitation mainly affects notably people in healthcare professions and has been associated with physical, emotional and behavioral symptoms [8,9]. This has also been linked to other humanistic occupations, such as that of teachers or social workers, because of the complex and peculiar nature of human interaction within these professions. When a worker in one of these fields exceeds his abilities, he is moving both emotionally and cognitively away from his work object, in an attempt to manage the exhaustion experienced and to preserve his remaining energy reserves [10]. Especially at a time of economic crisis such as the one Greece has experienced intensely in previous decade, with job insecurity and severe economic changes, intense stress can lead to extreme situations.

Occupational stress as a concept is felt when a worker has to meet a number of requirements on the job which cannot be met with his existing skills or personal needs and beliefs. As a result, such a worker may react both physically and psychologically, through stress as a defensive mechanism, in order to be able to fulfill the requirements of his work. This prolonged stress over time leads worker fatigue and the exhaustion of physical and mental reserves. This stress is therefore a reaction of the worker caused by the difficult situations faced in their every working day. As point out, every human being has a different experience of these difficult situations, since one worker may not be under stress, while another may be under threat, which is either consciously or unconsciously the case and may exacerbate the state of his psychological and physical health [11].

The aim of this critical review is to cite the main theoretical models on occupational stress with particular relevance to the nursing profession.

2. MATERIALS AND METHODS

For this review's needs a systematic literature search was undertaken in Medline, Google *Scholar* and Cinhal, via combinations of the following keywords "occupational' 'stress', nursing' and 'burn-out', from 2000 to 2021. The search yielded 84 articles which were reduced to 39 (Fig. 1).

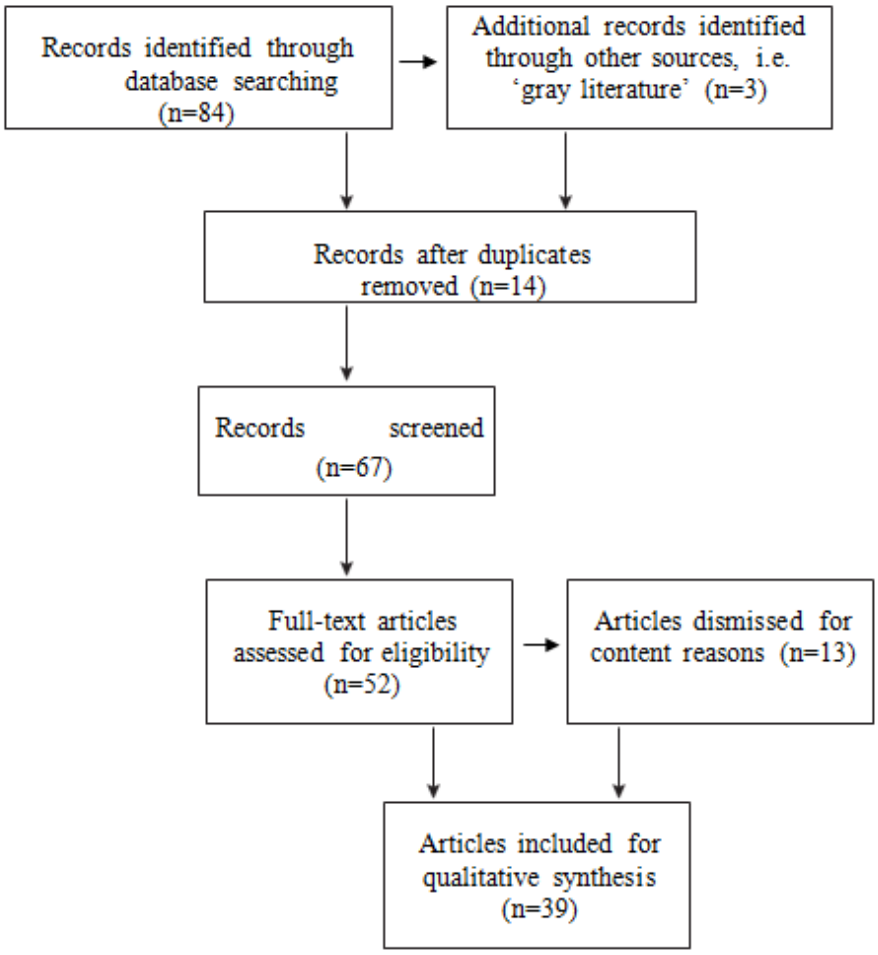

Fig. 1. Systematic Literature Search Flowchart

3. RESULTS AND DISCUSSION

The search yielded 84 articles which were reduced to 39. Furthermore, the results were elaborated upon further to form a concise table on theoretical models for occupational stress (Table 1). The nine theoretical models will be elaborated further in chronological date order.

Table 1. Theoretical models for occupational stress

Authors	Date	Phases	Model's focus
Karasek	1979	three	Psychological demands of work
Edelwich & Brodsky	1980	four	Workplace inadequacies
Cherniss	1980	three	Workplace
Maslach & Jackson	1981	three	Occupational Stress model
Pines & Aronson	1988	one	Professional Development
Siegrist	1996	one	Investment-Return Imbalance Model
Demerouti et al.	2001	three	Labor Requirements Model
Kristensen et al.	2005	three	Copenhagen Model Of Work Bunout
Chen, Westman & Hobfoll	2015	three	Resource management

Karasek

The early model on occupational stress introduced by Karasek (1979), as well as being one of the pioneering in terms of occupational stress investigation, distinguishes three categories of stressful factors which affect workers' professional lives. These categories are [12]:

- The psychological requirements arising from work.
- Decision control (or scope).
- Social support from superiors, colleagues and subordinates.

The theory on which this model is based and is very likely to affect future models is that a worker's stress, fatigue and depression manifest themselves at times when psychological demands of work are high and when the decision-making process is not under control. Lack of social support, however, is seen as a reinforcing factor in these negative feelings [13]. As a job which is not of particular interest to a worker causes stress and anxiety, it becomes boring and ends up as an obstacle to the development and utilization of the employee's skills and is likely to be a deterrent in the acquisition of new knowledge [14,15].

Edelwich & Brodsky

The professional incapacitation model of disillusionment in the helping professions presented by Edelwich & Brodsky (1980) is considered to be one of the oldest models on occupational stress [16]. Within this model, the authors described four stages characterizing gradual incapacitation and burn-out. These stages were identified as the stages of a process leading to professional burnout and are as follows:

3.1 The Excitement Stage

This period is characterized by the establishment of high objectives which the worker sets out in his work and the high expectations which he has of himself and his colleagues. Sometimes, there are also high expectations of customers, or patients in the case of healthcare professionals. This leads the professional to excessive dedication to his work, since he tries to obtain the greatest satisfaction from it and to achieve maximum efficiency on behalf of the users of his services. As a result, the health care professional, devotes a great deal of extra time and effort.

3.2 The Stage of Doubt and Inactivity

During this period, the professional observes and realizes that his work does not offer him the expected satisfaction, despite his dedication. He therefore further intensifies the efforts he makes in his work, in order to achieve the desired satisfaction he expects from it. Steps are now been taken to improve himself as a professional and at the same time beginning to show a attitude/behavior characterized by the expression of persistent personal complaining.

3.3 Frustration and Cancelation

In this penultimate period, the worker/ professional starts to consider his work extremely stressful. In this stage he sees himself surrounded by futility in what he has to offer. Furthermore, he is seized by pessimism and thus considers that the work he offers is pointless. At this stage, the healthcare professional starts to review healthcare goals which he personally considers excessive and starts to distance himself from his patients, frequently also considering them a source of anxiety, as indeed he also regards his own work in general.

3.4 The Stage of Apathy

In this last stage, the healthcare worker has ended up at the other end of the spectrum where he has lost all enthusiasm for a humanistic job he was originally drawn into. In particular, he may show indifference to his work and to the needs that his patients and may also operate by simply maintaining the job and works exclusively for the sake of his livelihood.

An observer therefore notes the transition of the worker from excitement to the quasi-abandonment of his job, a characteristic which betrays his responsibilities to patients and the health care system per se which he is supposed to serve and honor. The stages of this transition, could be recognized in all professions and present in astonishing detail the state of change in the way workers are put to work and their attitudes to their work [17].

Cherniss

According to another model of the employee's status as a Professional Worker, presented by Cherniss (1980), professional burnout is divided

into a series of three phases: job stress, exhaustion and defensive position [18]. In the first phase a disruption or conflict between available and required resources is identified. Often the worker finds that the resources available to him are insufficient to meet the demands of the job. This disruption results in the triggering of occupational stress, which can be demonstrated in any worker but does not necessarily always lead to full labor incapacitation [19].

In the second phase, exhaustion comes in response to the disturbance that started in the previous phase. In particular, there is emotional exhaustion, severe stress, a feeling of fatigue, frustration, hopelessness, a lack of interest in the subject of work and an individual's indifference for patients. Hence, the work environment per se becomes a source of all these negative feelings or conditions for the healthcare worker, who is experiencing a continuous tension. This, according to Khamisa et al. (2015) requires sound management, patience and a solid work plan, otherwise it is almost certain that the worker will be frustrated and resign [20]. Yet, the overall working environment per se in this case, seems to be playing a greater role in this model.

In the last phase of this model, that of the defense, again, the individual adopts a different attitude to the one he had when he first started working in this field. In particular, the healthcare worker appears cynical and apathetic towards patients, but not because he intends to cause them negative feelings, but because in doing so, he is trying to protect himself from the physical and psychological consequences that previous phases have accumulated upon him. According to Friganović et al., (2019), the self-protection of the worker through cynical attitudes is perhaps the first and easiest sign that a healthcare worker is heading towards disassociation and exhaustion [21].

Maslach & Jackson

Maslach & Jackson's Occupational Stress model (1982) has a questionnaire accompanying it which is widely used by the academic community especially in Greece [22]. According to the authors professional exhaustion is defined by three dimensions which are: emotional exhaustion, depersonalization and diminished personal achievements. These three dimensions interpret both the 'birth' and the 'evolvement' of professional exhaustion which workers may develop and are described in detail in order to make them comprehensible in greater depth via Maslach's questionnaire.

Pines & Aronson

A highly acknowledged model in the working environment comes from Pines & Aronson (1988) who looked at ways in which occupational stress affects continuous Professional Development [23]. In particular, the authors looked at burnout syndrome from a different dimension, i.e. bearing in mind that the personality and motivation of the individual are factors which give the kick-start to the emergence of a professional incapacitation with its capacity to increase in intensity. Moreover, the working environment per se is what characterizes professional disassociation and may even lead to the extremes of stress resulting in suicide. Where the working environment fails to meet the expectations of the worker, it will inevitably lead to the emergence of a working life crisis. However, the emergence of both these factors i.e. the personality and motivation of the healthcare professional and inadequate resources compound the problems especially if also domestic or other conflict coexists outside the work environment [24].

Siegrist

Another model presented by Siegrist (1996) approaches occupational stress through examining balance to what a worker offers and receives, i.e. is there a balance between, the worker's effort on the work to be done on the one hand, (which is specifically named as an "investment") and on the other hand, what he receives from it as compensation [25]. Disruption of this balance is likely to cause feelings of pressure, discontent, anxiety and stress on the worker, resulting in work-related fatigue (exhaustion) and, more generally, a long-term disruption of his or her health.
The tasks of the worker are defined as: *the exogenous*, which relates to any work the worker provides in relation to his work and *the intrinsic*, which relates to anything that might encourage the worker to improve his or her efficiency at work or, in other words, the incentives that drive him or her to perform better. These, include the ability to take initiatives, the worker's individuality, the competitiveness of the organization and his ability and circumstances whereby the healthcare professional can separate professional and personal life [26]. The

rewards paid to the worker through his work can be defined as an accumulative response to a social recognition, job development potentials, financial rewards and job security [27].

Demerouti et al.

The next model is somewhat reminiscent of Karasek (1979) but it is certainly much more modern is devised by Demerouti et al. (2001) [28]. According to the authors, occupational stress arises when the resources needed to carry out the work properly and the benefits which it subsequently offers the worker are not sufficient to meet the needs or expectations of either the employer or the worker.

The demands arising in a working environment are reasonable to be linked to the physical, psychological and mental offering of the worker, so it seems reasonable to influence the potential psychological and physical fatigue that a healthcare worker may feel when they go beyond his or her capacities or the resources available. Furthermore, labor resources are often an aspect of work (social, psychological, mental), which, when operating effectively, are capable of contributing to the achievement of the employment objectives and can encourage the worker into improved development, yet reducing the level of physical and psychological stress in the worker.

Kristensen et al.

One of the most recent theoretical models of occupational stress is by Kristensen et al. (2005) and comes as an improved update on a model published by Maslach nearly four decades ago [29]. The so-called 'Copenhagen Model' is based on three dimensions (as well as the Maslach model) which define professional capacity. These relate to personal exhaustion, professional exhaustion and poor customer-related interactions.

The first dimension (personal exhaustion) is defined by the degree of psychological fatigue and exhaustion experienced by the worker, while the second dimension (professional exhaustion) is defined by the degree of physical exhaustion of the worker, which relates to the work he needs to do to complete his tasks. Finally, the third dimension (poor customer-related interactions) is defined by the degree of physical and psychological exhaustion with which the worker describes within the scope of his contact with the clients.

With regard to the final term (customers) it should be noted that the authors have given it a broader concept than most researchers. On this condition, the authors not only describe users of products or services (or patients in the health sector) but also include colleagues, family and others with whom the worker is associated [30].

Healthcare workers experiencing emotional exhaustion often state that they feel 'a vacuum' from both physical and, above all, a mental point of view. In addition, they comment that they are unable to relax and recover from the emotions that weigh them down. This sense of continuous tiredness and fatigue indicates that they are always stressed and intense even in the morning when awakening. They show reduced energy and are unable to cope with their work obligations and may have consequent conflict with colleagues [31].

Chen, Westman & Hobfoll

devised a theory that rests on the importance of how resources are managed which an issue that has been addressed by previous researchers is trying to clarify root causes of professional burnout [32]. More specifically, the model based on Hobfoll and Shiron's theory treats professional empowerment as a psycho-emotional state and divides it into the following phases:

i. Physical fatigue
ii. Emotional exhaustion
iii. Cognitive fatigue

'Physical fatigue' implies a work-related tiredness and the reduced energy that the worker feels as a result of his work; 'emotional exhaustion' implies a lack of appetite for contact with colleagues or clients and a weakened interest in them, and may be accompanied by partial or complete isolation of the worker. The third phase is 'cognitive fatigue', which is described as a 'reduced mental onset' or more simply, an obstacle that prevents workers from considering and operating effectively on the subject of their work.

Emotional exhaustion is characterized by a marked lack of physical energy, and a feeling that there are no further reserves or resources from which to renew his energy. In general, the individual feels that he or she is no longer in the mood required to make an emotional investment

in his or her work and is further suffering from the demands of his or her clients and/or the wider working environment. Perhaps the most unpleasant thing is that he cannot foresee a solution to such problems and loses perspective on what the next day may hold.

Workers suffering from occupational fatigue syndrome feel that they are no longer capable of performing their work properly with the same efficiency and responsibility as they have done in the past. In addition, this may have a negative consequence, i.e. removal from work which again may be considered to be the 'cure' of the situation from an employer's point of view but with possible detrimental effects to the worker [33]. Several studies have shown that the high demands of an working environment are often accompanied by high expectations on the part of workers with marked emotional exhaustion. Furthermore, many authors identify that a stressed worker may be exacerbated by emotional fatigue and physical incapacitation of the job to a level of clinical feelings of depression [34,35,36].

Depersonalization is another dimension of occupational fatigue as according to Maslach (1982) workers often distance themselves (physically or emotionally) from their working environment and maintain a distant and cold attitude both in terms of work performance and in relation with colleagues. Their participation in matters relating to their work is reduced with indifference to new ideas and initiatives and eem to be acting in this way to protect themselves from exhaustion and frustration, considering their future uncertain and any initiatives as risky. In addition, they adopt a negative attitude, which may be particularly harmful to them and to the well-being of people in contact with them [37].

Due to depersonalization, the person gradually distances himself not only from work but also behaves cynically and indifferent towards his patients and sees them as 'numbers', 'amounts' or 'incidents'. Unfortunately, emotional fatigue and therefore depersonalization creates the sense of failure in the worker. This depersonalization is a process which results in the worker trying to move away from the stress he feels and experiences and the pressure and fatigue that has accumulated [38,39].

4. CONCLUSIONS

Emotional exhaustion and depersonalization are the two stages that preceded professional incapacitation and a worker's sense of diminished personal achievements where hope is lacking. This is how the 'Occupational Exhaustion Syndrome' or burnout comes about. The workers consider themselves incapable of fulfilling the obligations arising in their working environment and any responsibility they are delegated is difficult or insurmountable. In the end, there is loss of self-confidence and the ability to achieve targets, thus reducing their efficiency resulting in longterm incapacitation.

The negativity a worker is in response to these burdens and results in suffering from burnout which prevails in a vicious circle affecting both work confidence and attitude. This is particularly noticeable in the case where the work involves the care and management of patients. In this context, the healthcare professional seems unable to cope with the mounting pressure of his work and from a critical point may resign from the effort required to manage any issues his clients have. In addition, to the resulting work dissatisfaction he also feels that he can no longer deliver to the maximum of his skills and hence loss of self-esteem.

Depression is the sentiment that follows reduced self-esteem and a significant change that follows this is an abandonment of work. Health professionals who experience feelings of denial, pessimism and devaluation usually encounter a profound challenge to their ability to work.

Therefore, active measures need to be taken by management and other coworkers who might identify such a problem in order to take steps to protect and ease the stress so that much needed staff can be retained. The recent Covid-19 pandemic has dictated that nursing staff retention is a critical issue on a global scale.

CONSENT

It's not applicable.

ETHICAL APPROVAL

It's not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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