

Psychological occupational stress: Dangers of the hospital environment as a model


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How to Cite:

Ait-Aldjet, M. (2025). Psychological occupational stress: Dangers of the hospital environment as a model. *Art Law and Accounting Reporter*, 44(2), 302-317. <https://journalalar.org/index.php/online/article/view/25>

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Submitted: 03 Jan 2025 | Revised: 14 Feb 2025 | Accepted: 18 March 2025

Abstract---Hospital personnel are the most highly vulnerable to occupational stress. Their daily presence during work especially in emergency units (almost intensive care and serious illnesses) exposed them to extreme situations as the inability to adapt, poor performance, incapacity to achieve daily tasks, lack of motivation to work, and psychological fatigue. Several reached studies have confirmed that medical staff are among exposed professionals to occupational stress. Multiple studies have identified several causes of this occupational stress with the most significant of them being: heavy workload and multi-tasks, social pressures with management, colleagues, and companions of patients, low social support, low rewards, and wages, not to mention that they are also exposed to day-to-day of patients suffering, pain, and death . Offering all these issues and other stress factors that medical staff are exposed to, they have an even more significant problem to solve in their day-to-day lives: exposure and subsequent infection with infectious diseases that may either be chronic or fatal. These are transmitted by air (most dangerously by tuberculosis and SARS), through water (the most dangerously by Legionnaires' disease), via blood or what is known by accidental exposure to blood (AES) (the most dangerously by AIDS and the types of hepatitis caused by viruses, B and C). On this basis, we shed light on psychological occupational stress affecting medical personnel daily life within the hospital environment, arising from factors and situations that have numerous negative impacts on them and can even result in health hazards.

Keywords---medical staff, psychological occupational stress, hospital environment risks.

Introduction:

In the modern world that is rapidly developing, individuals are exposed to more and more diverse types and origin of stress and psychological pressure which may impair their lives and lead to psychological symptoms of anxiety and depression. Occupational stress is one of the most prevalent and widespread forms of psychological stress and its term was first coined in institutions and organizations whose main objective rely mostly on the human element. Such resources are supposed to carry out their professional roles well so that they deliver the best services that are expected of them. Nevertheless, even with the goodwill of these professionals and their institutions to scale the hurdles which present themselves on the way to deliver the necessary services, the workplace presents hurdles that do not allow them to exercise their role fully. This is what is called job stress, which is usually defined as the factors that surround the workers as well as those that make them to feel strained. The threat of this feeling is its adverse effects, which is performing the duties without emotional integration, pessimism, demotivation, and loss of creativity.

The medical professions require substantial abilities and aptitudes, and numerous influences in the professional healthcare environment tend to restrict the capabilities and flexibility of such professionals, thereby emerging as a source of Occupational stress and burnout, and adopting those coping strategies that might be therapeutic,

like seeking other people, or negative and non-therapeutic like avoidance and isolation, which contributes to feelings of anxiety, withdrawal, and professional rejection .

I. Occupational stress:

1. The definition of Occupational stress :

Work stress is explained as being defined by individual perception or feeling of imbalance, physical and psychological, based on the events and circumstances at the work environment (Saad bin Amikaan Saad Al-Dosari, 2005).

Occupational stress is described by the Canadian National Institute of Occupational Safety and Health (NIOSH, 1999) as the negative physical and emotional reactions which are present when the work demands exceed the abilities, resources, and needs in the worker (Masoudi Reza, 2003)

According to Sayed Abdel Aal (2002), occupational stress can be described as a combination of physiological, physical and psychological changes that a worker or an employee experience as a response to a series of stimuli that surround him in the workplace and which the worker can no longer withstand or maintain its demands. Consequently, it is defined that the response to occupational stress is all the patterns of emotional behavior which reflects the achievement of the state of physical and psychological stress as manifestations of incompatibility with the demands of work performance and work at the level to which the subject is accustomed because of the frequency, amount and accumulation of burdens and tasks based on his personality type" (Taha Abdel-Azim Hussein and Salama Abdel-Azim Hussein, 2006)

2. Occupational stress causes in the healthcare environment:

The efforts to recognize the sources of occupational stress among the medical staff members indicate that there are numerous sources and causes of occupational stress that may be attributed to the following categories:

- 2. 1 Sources related to working conditions:** These are the physical conditions of the individual's workplace which can cause physical fatigue and psychological stress, and they include lighting, cooling, air quality, noise, and uncomfortable sitting places.
- 2. 2 Night shifts:** Night work is a source of psychological and physical stress on the therapists because of the absence of harmony between their work and social life. These employees have night shifts as one of the most stressful times of work.
- 2. 3 Higher responsibility:** Role responsibility is the other cause of stress among the people working in a healthcare institution. In this case, one can make a distinction between two forms of responsibility: responsibility to individuals and responsibility to objects. The medical staffs experience real life scenarios that make them anxious and nervous because they are exposed to

life and death scenarios of patients as well as their responsibility to patients and their psychological as well as emotional attachment to them.

2. 4 **Career growth:** Delayed career growth, inability to professionally develop, and the inability to get promotion are seen to be one of the most significant causes of psychological occupational stress because of the sense of psychological or job insecurity, or being fired or having to retire early.
2. 5 **Relation with patients:** Treating patients with different types of illnesses and in a bad psychological situation is by itself a stressor among the medical personnel (Raja Mariam, 2008).

3. Occupational stress impacts:

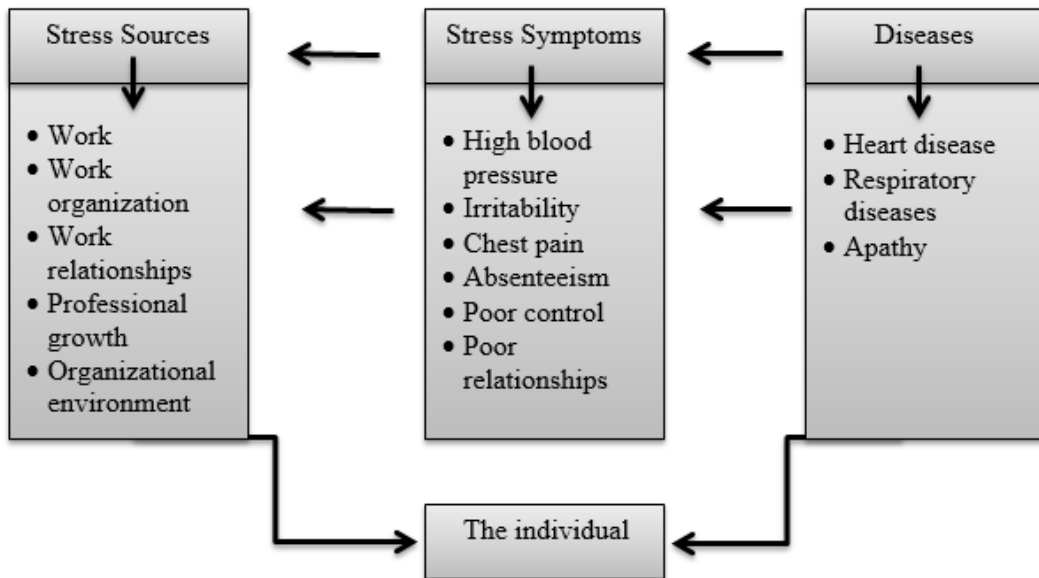
Work stress has numerous impacts and implications to both the individual and the organization that an individual works in. In the case of the individual, work stress has several consequences that are either behavioral, psychological, or physical. To the organization that the person is employed in, work stress is associated with multiple impacts, among them being the direct and indirect costs that arise as a result of reduced individual performance, which is caused by work stress (Al-Sisi, 2002).

3. 1 **Behavioral impacts:** Some of the impacts of a perception of an individual that they are experiencing increasing pressure on them include the changes in the normal habits and modification of behavior patterns of the individual. The changes are mostly not favorable and they produce adverse negative short-term and long-term impacts. The greatest of these changes include: insomnia, excessive smoking, weight disturbance, loss of appetite, sleeping habits, use of sedatives, aggression, vandalism, and inability to respect the rules and regulations of the organization (Haygan, 1998). Stress beyond normal levels can be converted into numerous behavioral responses that the employee plays against himself or the institution where working in, thus, which are reflected in the unreasonable absence of work, aggression, vandalization, fatigue, overeating, or smoking or addiction, as a strategy of behavioral response to work stress (Barzwan Hasiba, 2013).
3. 2 **Psychological impacts:** In spite of the fact they are important, psychological impacts have not gotten the same level of attention as compared to physical impacts since they are hard to identify since they are intangible. Scientists have concurred that such impacts are anxiety and stress, anger and frustration, boredom and low self-esteem, anxiety and irritability, a number of psychological disorders, lowered personal ethics, increased job dissatisfaction, enhanced need to leave work, reduced organizational loyalty, psychological burnout, loss of interest and reduced capacity to meet needs, and mental exhaustion (Lothans, 1985). Shehata Rabie states that the impacts of the work stress are reflected on the occurrence of various disorders with insomnia, fatigue and weariness,

exhaustion, nervousness, mood changes, increased heart rate, and digestive and respiratory diseases and disorders as the primary ones. Mass hysteria is another odd and unusual phenomenon that is the resultant effect of work stress, and its symptoms are dizziness, nausea, a general sense of weakness, and rapid breathing. These are symptoms in one female worker and they rapidly proliferated among other workers without any organic reason. This disease is found more in women as compared to men, and it is also a rare occurrence. He also mentioned industrial fatigue which has been related to work related stress and is manifested through tiredness and exhaustion, high number of absenteeism or lateness. He also introduced how the mental health of workers affects their productivity and interactions with others and superiors, and that the mental health of a worker is influenced by the challenges the worker encounters in life (within and without the factory) (Shahata Rabie, 2010).

- 3. 3 Health impacts:** The numerous research works that have been carried out show that work stress is related to health and psychological issues, and, therefore, stress causes enlargement of the heart muscle and, as a consequence, cardiovascular disease. Dr. Bafort, a researcher at the University of North California of a following lasted 25 years revealed that a person scoring highly in a standard personality test on anger was five times more likely to die of heart attack as compared to the less angry individuals. One more investigation proved that in the long-term perspective further exposure to work stress may cause ulcers, arthritis, liver damage, lung cancer, and other heart diseases. Others have even tried to establish the relationship between work stress and mental illness and numerous other diseases. Depression, anxiety, frustration, boredom, and nervous tension are the psychological issues that are brought about by stress (Barzwan Hasiba, 2013).
- 4. Theories of work stress:** Work stress has numerous theories, the most well-known ones are:

 - 4. 1 Marshall's model:** Marshall, in this theoretical model, determines the cause of work stress and the symptoms that are hence resultant. The individual symptoms are manifested as different physical sicknesses like heart disease and the institutional or organizational symptoms that cause aggression and recurring accidents. The Marshall model is as shown in the next figure:



4. 2 Gibson et al model:

This theoretical concept is referred to as the interrelated model of work stress, according to which Gibson and others elucidate the relationship between numerous factors and distinct sources of stress and their impacts, including the impacts related to the individual, which are manifested in different accidents and mitigated productivity. The given figure demonstrates the highest sources of stress and its impacts.

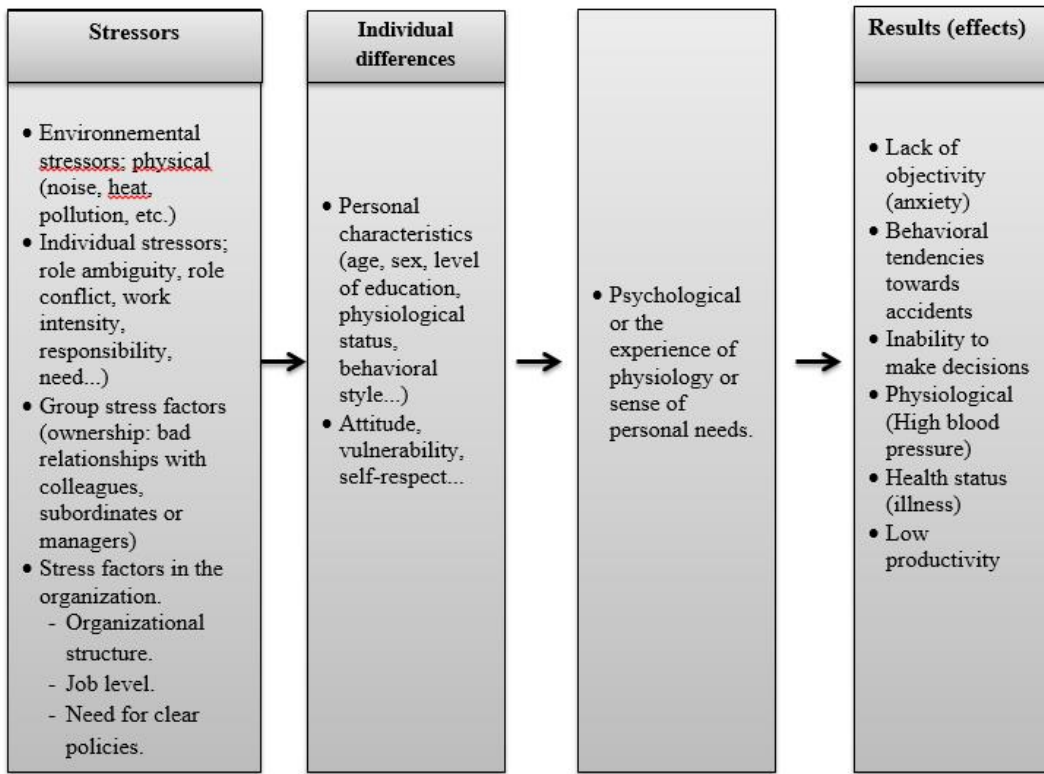


Figure 2: Gibson et al. model of work stress (Farouk Al-Sayed Othman, 2001).

4. 3 Cooper's model:

According to Cooper, the environment of an individual is a source of stress that threatens him or her in case it becomes prolonged and the coping strategies employed in the stressful circumstance are ineffective. This may cause some diseases and it may also cause anxiety, depression and low self-esteem. The following figure shows this model:

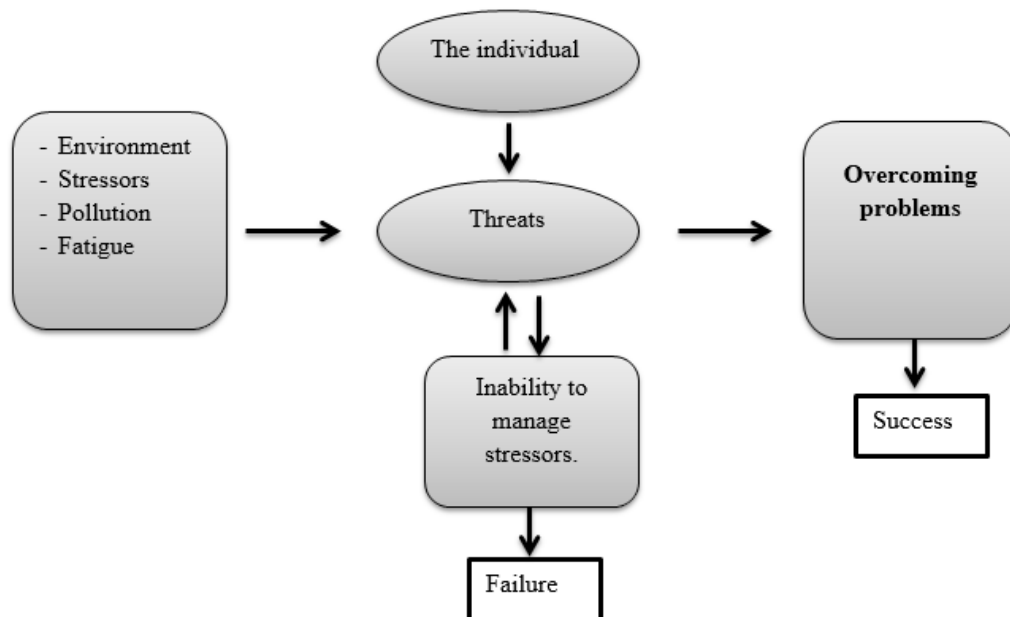


Figure 3: The model of occupational stress developed by Cooper (Farouk Al-Sayed Othman, 2001).

II. Healthcare environment risks:

The report on global health published by The World Health Organization in 2002 in reference to the 35 million employees in the healthcare industry across the world reported that an average of 3 million employees in the healthcare industry face the risk of being infected with an infectious disease annually since:

- ❖ There is a risk of hepatitis B in 2 million professionals.
- ❖ The number of people at risks at hepatitis C is 0.9 million.
- ❖ 170,000 workers are at risk of HIV.

According to the estimates of the infections number caused by exposure to contaminated blood or biological fluids in health institutions, the same report shows that:

- ❖ Hepatitis C was infected in between 16,000 to 150,000 cases.
- ❖ Hepatitis B- 66,000-70,000 cases.
- ❖ Between 500 and 1,000 cases of HIV.

It is important to note that over 90 % of these infections that occur during work in a hospital environment happen in the developing countries (WHO, 2002). When it comes to the populations that are most susceptible to such infections, the statistics concerning such incidents involving blood all conclude that nurses are the most vulnerable. In 2009, however, of 14,472 instances of blood exposure; 4% were in the case of doctors and 10% in the case of medical assistants (Aides-soignants).

At the same time, nurses and nursing students had 43 and 9.5 %, respectively. (Institut de veille sanitaire, 2009). Benali Beghdadli et al. (2008) carried out research in Algeria, entitled; "**Professionals at risk of blood exposure accidents working in a university hospital center in western Algeria**". (Le personnel à risque d'accidents d'exposition au sang dans un CHU de l'ouest algérien).

The research was carried out among medical personnel employed in the Sidi Bel Abbas University Hospital Center and the objective of the research was to identify the rate of such accidents and conditions that led to the accidents which were documented during a period of two years (**2005, 2006**). This period saw the hospital recording **108** cases of blood exposure in the workplace (**70** females, **38** males) with the most being **44** cases in **2005** and **64** in **2006**.

Serological follow-ups were conducted on 62 % of the victims on the first day, and no AIDS case recorded. These research works and statistics were related to the workers of different health centers who were exposed to the infection, yet there are thousands of workers that practice their profession in these conditions, knowing about the risks around them.

1. The nature of risks in the healthcare environment: The healthcare environment, including hospitals and health centers, is rated as one of the workplaces that pose a high risk to the health of the workers. These threats have been divided into two broad categories according to the experts, they are the biological risks and the chemical risks.

1.1 Biological hazards: As the healthcare professionals work, they are exposed to the risk of infection that may be caused by a great number of varied biological causes. This risk is normally abrupt and often invisible and cannot be easily evaluated. These factors have been categorized into four groups by the European Council on the Protection of Workers against Biological Hazards at Work depending on their severity and magnitude of the risk the infection can pose. These are as follows:

- ❖ **Group 1:** Biological factors do not result in disease when an individual is exposed to.
- ❖ **Group 2:** This category has biological factors which have the potential of making people fall ill in case they are exposed to them. They can cause danger to medical personnel, although there are few chances of the person-to-person transmission, and the precaution measures are usually present to avoid them, not to mention the existence of efficient treatment in case of infection.
- ❖ **Group 3:** Biological factors under this category can cause severe disease to individuals and put a grave threat to workers. They are

transmittable and can be conveyed among people, but there is a treatment and preventive strategy, which is typically available.

- ❖ **Group 4:** In this group, biological factors induce severe disease in people and represent a high risk to the workers. They are very likely to spread and be transmitted among people. They do not have any measures of protection of workers in health institutions and there is no effective treatment.

To every category of these hazards, there is a collection of preventive norms, which will permit the hazardous to be addressed and managed as a whole since it is hard to establish a given strategy to handle a specific hazard due to the high rate of change that defines risks in the health sector.

The European risk assessment system has provided the reason and necessity of determining the risk potential of each single disease factor that might be a threat to the health of workers and categorizing it to which category it belongs (mentioned above) to connote the degree of protection that should be granted.

In the cases when the pathogenic factors that represent various risk groups are present simultaneously, the prophylaxis of the most dangerous of all groups should be used. This method works, however, it is complicated, time-consuming and the determination of proper preventive measures is abstract.

The risks presented by the biological agents in the health sector can only be properly and seriously assessed at the strategic level, when each pathogenic agent is not studied separately within the context of the rest of the pathogenic agents, but collectively in accordance with some criteria. As an illustration, the degree of the risk should be determined with regard to the route of transmission and spread. There are three primary modes of transmission of various hospital-acquired diseases in the health sector and they include the following:

- A. Blood borne infections.
- B. Airborne infections.
- C. Contact infections.

The perils of each of these forms of transmission should be characterized and evaluated and suitable protection standards established on each one. (Baka, A., Brodt, H. R., 2009).

2.1 Chemical risks: In the framework of the hospital environment risk assessment, experts in this field conduct research and determine the risks that can emanate because of the use of chemicals. An examination of the different therapeutic measures conducted by the medical personnel on a day-

to-day basis has shown the risks of repetition of some of the substances used and should be used as a part of any preventive or evaluation program about hospital risks which are:

- ❖ Disinfecting and cleaning products.
- ❖ Gases used in anesthesia.
- ❖ Cytostatic/cytotoxic inhibitors.
- ❖ The materials that may harm or endanger fertility or other substances such as some pharmaceuticals.

Besides the aforementioned products, chemical factors that represent a risk to hospital personnel are various and include solvents and substances utilized in laboratories, 90deg alcohol, preservatives, and so on.

With regards to healthcare risk assessment, it is important to note that in the healthcare industry, narcotic substances that are available in the form of medicines are accessible compared to other functional sectors. There are certain issues and challenges that experts who evaluate the threat of chemical substances in the healthcare field usually encounter:

- ❖ The inconvenience or incapacity of categorizing pharmaceutical preparations that present a hazard to health professionals with standard hazardous chemicals which are controlled by the regulations and suggestions of the relevant law enforcement agencies in this sector such as the ones utilized in anesthesia, cytotoxic agents, disinfectants and various other pharmaceutical preparations as health professionals are not always in a position to determine the dangers that such preparations impose on their well-being.
- ❖ The use of chemical disinfectants and sterilizing agents is the typical requirement of hygiene procedures, although their effects should also be considered. On the one hand, their general and frequent use eradicates the reasons of development and proliferation of hospital-acquired and infectious diseases; on the other hand, they are the threat of the chemical influence, especially on users.
- ❖ A lot of treatment processes aimed at benefiting patients may be life-threatening to the caregivers unless protection measures are applied. This is especially so in emergency cases (surgical operations, emergency rooms, etc.). (Ahrens, R., Beaudouin, L., 1997).

3.1 Blood exposure incidents:

- 3.1.1** Definition A blood exposure incident is defined as any accidental (unintentional) contact with blood or any biological fluid so contaminated with blood that it comes in contact with a skin injury (prick, cut) or spread to mucous membranes or broken skin (wound, scratch, eczema, etc.). (Crouzilles, C, 2011).

- 3.1.2** Risks of transmission of infectious agents involving incidences of blood exposure: In case there is incidence of a blood exposure incident, there is the source, who is the patient harboring the infectious agent, and the victim, who is the person exposed to the incidence.

Biological fluids and blood are vulnerable to harboring several disease-causing organisms like viruses, bacteria, parasites, and fungi. HIV, hepatitis B and C are the most harmful of all these infectious agents, which can be contracted in such a manner. Nevertheless, numerous other infectious agents may be spread in blood and biological fluids, some of which are familiar, like those of syphilis or malaria, and others of which remain still unknown to these days. In case of a deep puncture with a needle of blood, the risk of infection is increased.

2. Preventive measures:

- 2. 1** Health isolation: Health isolation strives to avoid transmission and spread of infectious agents by erecting physical and technical barriers that eliminate any potential contact between the patients and sources of infection. This is always accompanied by a list of precautions and procedures that supplement the normal precaution where necessary. This is mainly to stop the chain of transmission of the infectious agents that originate in the sources of contamination which are mainly the following:
- ❖ Infected patients or those who can transmit microorganism to other patients.
 - ❖ Hospital staff.
 - ❖ The hospital environment

The choice of isolation measures is in any case a medical one, and it is temporary. Isolation can be of two kinds with varying purposes:

- 2. 1.1** Preventive isolation: This is made of a series of activities that seek to establish barriers against the spread of known or proposed infectious agents to other uninfected and non-carrying individuals. This begins with the patient or the immediate surroundings, where these precautions are implemented to prevent cross-transmission (i.e., person-to-person or environment-to-person) based on the route of the infectious agent transmission, in addition to the conventional precautions.

Precautionary isolation concerns patients carrying a contagious infectious agent, that can lead to the pollution of their surroundings (medical staff, other patients, visitors, etc.). Proper precautions thus need to be put in place so that the transmission of the

infectious microorganisms by the patient to other individuals who are not infected is avoided.

There should also be the right signs at the entrance of the isolation room that are readable by the patients, caregivers and visitors to prevent the accidental entry into the isolation room and the health hazard that will be caused.

2. 1.2 Protective isolation: This involves a combination of protective measures that have to be implemented so as to avoid the spread of any potentially infectious agents to illicit patients who are immune-compromised. These infectious agents might be in the hospital environment, other patients may be the vectors or even the medical procedure and even visitors in the hospital.

The protective isolation is implemented in order to safeguard patients with immunodeficiency or severe burns... This is due to immune deficiency caused by a disease of the immune system or immunosuppressive treatment, e.g. chemotherapy of cancer patients or immunosuppressive treatment in case of organ transplantation to prevent destruction by immune cells, which causes fragility and weakness in resistance against pathogenic and infectious agents and makes the body more susceptible to infection. As such, protective isolation is geared towards providing a shield against infectious agent transmission to the immediate surroundings of such patients.

2. 2 Security against violence in the hospital environment : Security against aggression on the health institution level, is a preventive and curative mechanism, which tends to elevate and sustain an acceptable level of security that permits it to conduct its operations within a satisfactory operation framework by managing and regulating the access of the hospital, by responding to the problems through dialogue and communication with the aim of understanding and acting on the problems, particularly in the circumstance of crisis (violence, theft, physical violence among patients or medical staff, etc.).

2. 2.1 Organizing and giving security against violence in the hospital environment: This involves the security officer who is mainly intended to ensure security and safety in the hospital with the aid of the security and protection staff. Their primary activities include the development of a security plan that will guarantee protection and security of patients, medical stuff & visitors, by following-up with the security guards and contacts with the police during theft instances or violence. Appropriate training of the security personnel, guiding and helping the victims,

constancy control over hospital entrances and coordination of the entry procedure, and involvement in the prevention of undesired events.

When it comes to violent situation management, the following should be considered to handle the violent situations:

- ❖ Consider the fact that patients admitted to the hospital will be susceptible to fear and anxiety due to the various treatment procedures and their hospitalization. As such, there must be the proper health care provision across all its aspects (physical, psychological, and social).
- ❖ Day one, provide a warm welcome to the patient, dress in the right clothes, look straight at the patient, speak calmly, with words that are reassuring, take time to talk to the patient and answer questions and concerns the patient has.
- ❖ Be able to be calm and respectful even during intense work.
- ❖ Violence should not be met by violence but should be curbed by other means since this will only serve to worsen the situation. (Goguelin P. et al., 1993).

Conclusion

Based on the aforementioned review on occupational stress, our study shows the topic's importance on different levels and diverse occupational fields, as it has become very clear that occupational stress has a negative impact on the employees and the organizations that employees work in, but it is also clear that not all the outcomes of work stress are bad. A certain work pressure may act as a motivating factor to enhance performance provided it is managed by the person and it is also understood by the institution or organization where that individual works.

Regarding medical personnel, there are a few recommendations that can be offered to alleviate the adverse impacts of occupational stress on them, as:

- Sensitize medical personnel and those in the health sector about the necessity of being more attentive to the phenomenon of occupational stress, particularly with the advent of high level of psychosomatic conditions with regard to their perception of occupational stress.
- Establish psychological training courses to establish skills of professional management of psychological stress including a set of cognitive, behavioral, and social skills.
- Create initiatives to assist the medical personnel to handle the stress they encounter in a positive manner. These plans entail relaxation, expression of negative emotions instead of suppressing them and problem solving. These programs are operated by gurus and specialists in dealing with occupational stress.
- Train the medical personnel with reasonable methods of expressing emotions, integrating cognitive behavioral therapies to recognize unproductive and distorted thoughts and beliefs that lead individuals to view certain situations

and life experiences as stressful and substituting them with more rational thoughts and beliefs to cope with such situations in a better manner.

- The material aspect can be improved by enhancing grants and allowances that are relative to occupational risks to which professionals are exposed to during their work, including infectious disease grants, and chemical hazard grants.

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