



LAUREA
UNIVERSITY OF APPLIED SCIENCES
Together we are stronger

Stress management among health care professionals: Psychological methods and coping techniques.

Koval, Liliia

Stress management among health care
professionals:
Psychological methods and coping techniques.

Liliia Koval

Degree Programme in
Nursing

Bachelor's Thesis

December, 2016



Laurea University of Applied Sciences
Unit

Abstract

Degree Programme in Nursing

Liliia Koval

Stress management among health care professionals. Psychological methods and coping techniques.

Year 2016 Pages 52

Stress among health care professionals and especially nurses is an important aspect that could influence the health and wellbeing of the nurses and the quality that they provide.

The purpose of the study was to examine the effect of psychological methods and coping techniques on the level of stress among health care professionals. The aim of the study is to reduce the level of stress among health care professionals. The research hypothesis – there will be a significant statistical difference in the stress level before and after practicing psychological methods and coping techniques. The research question - Do psychological methods and coping techniques help to reduce the level of stress among health care professionals?

Fourteen health care professionals took part in this experimental research. Participants were divided into two groups by using the method of randomization. Responders filled the questionnaires – Psychological Life Stress Scale by David Fontana - PLSS) and Psychological stress scale - PSM-25 (Lemyre, Tessier, Fillion, translated and adapted in Russian by Vodopyanova N.). For analyzing data, Student's t-test for comparison 2 dependent samples has been chosen.

Experimental group became familiar and agreed to use Guided imagery (Visualization), Jacobson's progressive muscle relaxation and Deep breathing techniques during 2 weeks.

The results showed that stress level among health care professionals is high and can be easily named as a problem. Statistical data found that the experimental group might have a significant lower level of professional and psychological stress after practicing these methods. However, due to limitations, the results obtained from the research part of this thesis are not trustworthy and cannot be generalized.

This study is aimed to health care professionals in general. We recommend to repeat the research on a bigger sample for confirming findings.

Key words: Health Care Professionals, Nurses, Stress Management, Psychological methods

Content

1. Introduction.....	5
2. Background.....	7
2.1 Stress.....	7
2.1.1 Definitions of stress.....	7
2.1.2 Types of stress.....	8
2.1.3 Physiology of stress.....	9
2.1.4 Causes and Signs of stress.....	9
2.1.5 Occupational stress.....	11
2.1.6 Consequences of stress.....	12
2.1.7 Stress among health care professionals.....	14
2.1.8 Nursing stress and patient care.....	15
2.2 Psychological methods and coping techniques.....	16
2.2.1 Stress management techniques.....	16
2.2.2 Visualization (guided imagery).....	18
2.2.3 Jacobson's Progressive Muscle Relaxation.....	19
2.2.4 Deep breath technique.....	20
3. Purpose of the study, research hypothesis and question.....	21
4. Research.....	21
4.1. Methodology	21
4.2. Procedure.....	23
5. Results.....	25
6. Discussion.....	31
7. Conclusion.....	32
8. References.....	34
9. Appendices	39

1. Introduction

Healthcare professionals meet face-to-face all aspects of human life – from birth to death, experiencing a person's first breath and the emotions that surround someone's last. However, many of healthcare providers suffer at the job and need professional help. Stress is a worldwide phenomenon and, unfortunately, well-known to healthcare workers in different parts of the world.

There are many researches, that show how important this problem nowadays. The fourth European Survey of Working Conditions, carried out in 2005 by European Agency for Safety and Health at Work showed, that stress experienced around 22% of working Europeans in 27 countries. The highest level of stress was reported in Greece (55%), Slovenia, Sweden (38%), and Latvia (37%). Lowest stress levels were found in the United Kingdom (12%), Germany, Ireland, The Netherlands (16%), The Czech Republic (17%), and in France, Bulgaria (18%). The results of the Finnish “Work and health” surveys (1997-2006) indicated that number of workers reported “rather or very much” stress has decreased during the past few years from 28% to 25%. Moreover, 2.5% of Finnish workers aged 30-64 years suffered from severe work-related ‘burnout’, and another 25% from mild burnout. (European Agency for Safety and Health at Work 2009)

According to Code of Ethics for Nurses, “nurse promotes, advocates for, and protects the rights, health, and safety of the patient”, but stress can have a negative impact on the quality of patient care. (ICN Code 2012) Moreover, it can lead to health problems, depression and even suicide. As stated by American Institute of Stress, stress-related distraction or sleepiness is a reason for 60-80% of accidents on the work place. (AIS)

The main factors that cause stress at the work place, according to APA, are low salaries, heavy workloads, lack of opportunity for growth and advancement, unrealistic job expectations, job security and lack of participation in a decision-making. (Stress Advocate 2009) Moreover, we could add such factors as under-staffing, lack or old equipment, poor working environment in countries with a lower level of economics. According Geuens et al. (2015) more examples of environmental stressors to which healthcare professionals are exposed on a regular basis are pain, suffering, death, ethical issues

However, it is possible to take the situation under control. Many researches every year try to learn more about stress and burnout and ways of helping and preventing. The American Psychological Association suggests a range of ways that a working environment can be changed to help reduce stress: workloads in a same line as a worker’s capabilities and resources, clearly defined worker’s roles and responsibilities, communication and opportunities for social interaction among workers. Each organization

could have own stress reducing programme, according to the policy and resources. (APA 2012)

Moreover, healthcare professionals, who experience stress or have symptoms of burnout have possibility to help themselves by using psychological methods and coping techniques, such as meditation, relaxation and art-therapy.

The main objective of this paper is to give a full picture of the phenomenon of stress among caregivers and psychological approach in reducing it.



2. Background

2.1.1. Definitions of stress

People use word “stress” in a daily life more often during last 50 years, but not everyone knows what exactly it means. We are going to try to define stress and look on it from different points of view.

Firs definition stated that stress results from pressure, also known as a **stimulus-based definition** of stress. According to Dr. Gillian Butler (1993), “the greater the pressure the more likely that the recipient, whether a person or a load-bearing beam, will succumb”. If the (external) stimulus becomes too great, the (internal) collapses.

The second definition – a **response-based definition** – focuses on stress as a response to injurious or aversive stimuli. Hans Selye emphasized this aspect and measured stress by physiological responses, for instance, produced by sympathetic adrenal-medullary activity or by pituitary-adrenal-cortical activity. Selye found the general adaptation syndrome (GAS) - three stages during which the physiological response to stress progresses through. At the first stage, the body is aroused and alarm reaction goes in a respond. Next stage, autonomic activity prepares body to deal with the stress. This stage called the resistance. The final stage - stage of exhaustion, if the stress continues and body has no capacity to respond, it may cause damage and system may collapse.

Sandor Szabo, Yvette Tache and Arpad Somogyi (2012) stated, that Hans Selye inspired a huge and still growing wave of medical research. At his historic article at 1936 that had the title: “A syndrome produced by diverse nocuous agents”, Selye characterized “general alarm reaction of the organism”, that included the thymicolymphatic involution, gastric ulcers, lipid discharge from the adrenal, loss of chromaffinity in the medulla - non-specific adaptive response. The word “stress” was not used, but his first comprehensive monograph published in 1950 in Montreal had the short title “Stress”. (Szabo 2012)

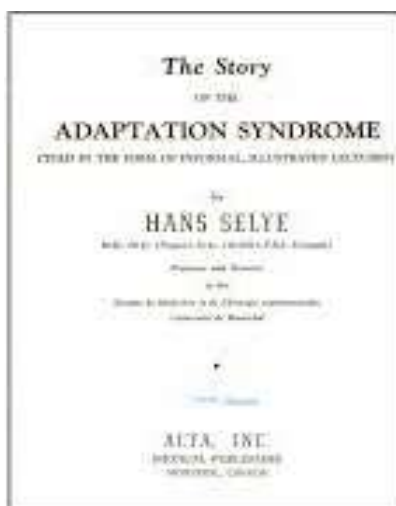
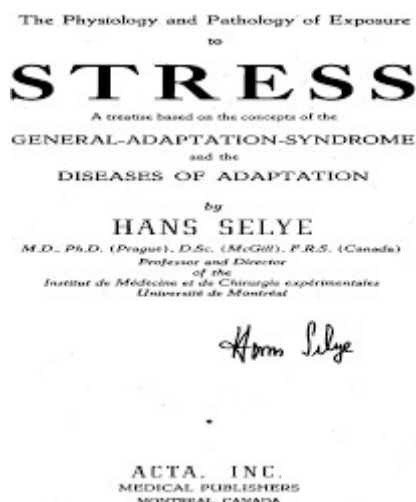


Figure 1. (left) Cover page to the first monograph by Selye on stress published in 1950. (right) modified from Selye 1952

Selye tried to define stress all his life and inferred and redefined stress as “The rate of wear and tear on the body”. On a question “What is stress?” Hans Selye answered – “**“Everyone knows what stress is, but nobody really knows.”**” (The American Institute of Stress)

Both, response-based and stimulus-based definitions have some limitations and in nowadays clinical practice more value has a **dynamic definition**, that means that stress is a “dynamic process reflecting both internal and external factors: characteristics of a person and his or her circumstances, as well as the interactions between them”. Cognitive factors such as thoughts, attitudes, beliefs and images played a great role in new understanding of stress. Lazarus and Folkman's definition of stress shows it very clearly - "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well being". (Butler 1993)

According to H. W. Krohne, The Lazarus Stress Theory has been presented as a broad theory, but during thirty years it undergone some improvements (Lazarus 1991, Lazarus and Folkman 1984, Lazarus and Launier 1978, Lazarus 1966). In the latest version, stress has been described as a relational concept – relationship/transaction between the subject and environment. (Krohne 2002)

2.1.2. Types of stress

According to Australian Psychological Society and American Psychological Association (2015), there are three types of stress: acute, episodic acute and chronic stress.

Acute stress – the most common type of stress, that may come from demands and pressures of the recent past and the nearest future. Because of the short-term, acute stress does not do the extensive damage.

Episodic stress – acute stress that comes frequently and often observed in people with “Type A” personality – too competitive, aggressive and demanding.

Chronic stress – “Chronic stress destroys bodies, minds and lives. It's the stress of poverty, of dysfunctional families, of being trapped in an unhappy marriage or in a despised job or career, of the never-ending "troubles"”.

One more type of stress is **Post-traumatic stress (PTSD)** – it can occur in people “who have experienced or witnessed a life-threatening event, such as a natural disaster, serious accident, terrorist incident, sudden death of a loved one; war; or rape or other violent personal assault”. These people can relive traumatic events through nightmares and flashbacks. (ADAA).

Thomas W. Colligan and Eileen M. Higgins (2005) state that stress is divided into two categories: eustress and distress. Eustress is also known as positive or good stress and distress – negative or bad stress. The main idea of discussing these two types of stress is to show that stress can help people to reach their objectives and increases the productivity;

however, stress also can lead to emotional confusion, burnout and illness. (Colligan, Higgins 2005)

2.1.3. Physiology of stress

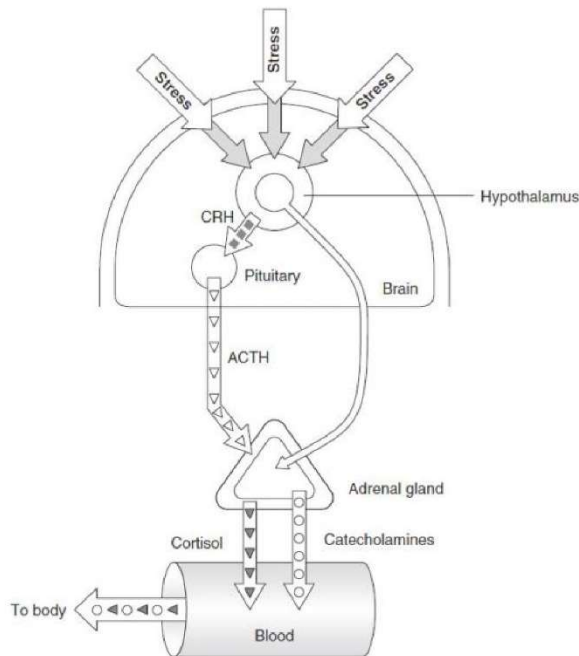


Figure 2. Physiological Stress response (Randall 2011)

According to Michael Randall (2011), the “human stress response involves a complex signaling pathway among neurons and somatic cells.” (Randall 2011)

Melanie Bickford (2005) stated, that the **Generalized Stress Response** includes different physiological responses, such as increased metabolism (high heartbeat, respiration), high blood pressure, intestinal movement (digestion), lowering in protein synthesis, high cholesterol and fatty acids in blood, faster coagulation process, immune and allergic response systems, localized inflammation (redness, swelling, heat and pain), high level of blood sugar, high level of stomach acids (Bickford 2005).

Harvard physiologist Walter Cannon in 1914, first described the term fight-or-flight response – the process involved in the body’s physiological activation to survive in the dangerous situation.

There are **four stages of the fight-or-flight response**:

Stage 1: Stimuli from senses are sent to the brain (a scream, the smell of fire, the taste of poison).

Stage 2: The brain converts the stimulus to a danger or a nondanger. The response ends, if the stimulus evaluated as a nondanger. However, the brain activates the nervous and endocrine systems, prepares body for protection and/or breakout, if the response is taken as a danger.

Stage 3: The body stays activated and awoken, until the danger is over.

Stage 4: When the danger is gone, the body returns to homeostasis, a state of physiological stability, essential for life. (The Nature of Stress)

2.1.4. Causes and symptoms of stress

In one of his works Lazarus stated “stress comes from any situation or circumstance that requires behavioral adjustment. Any change, either good or bad, is stressful, and whether it’s a positive or negative change, the physiological response is the same.” (Colligan, Higgins 2005)

Hans Selye said that almost any change person’s life is a stressor because there appears a need to deal with a new situation.

People can experience stress from four main sources: **The Environment** (weather, noise, traffic, pollution, crowding, unsafe place for living), **Social** (stressors associated with the different social roles, such as spouse, parents, caregiver or employee. Moreover, stress can cause loss of a loved one, divorce, deadlines, financial problems, job interviews, co-parenting or disagreements), **Physiological** (Illness, aging, giving birth, rapid growth of adolescence, menopause, accidents, lack of exercise, poor nutrition, and sleep disturbances), **Thoughts** (Some situations in life are stress provoking, but only brain interprets the situations as stressful, difficult, painful or pleasant). (Stress & Stress Management 2010)

According to A Harvard Medical School Special Health Report (2008), decades ago at the University of Washington two psychiatrists, Thomas Holmes and Richard Rahe, created a scale of major life events that cause stress.

Event	Mean value	Event	Mean value
Death of a spouse	100	Change in responsibilities at work	29
Divorce	73	Child leaving home	29
Marital separation	65	Trouble with in-laws	29
Imprisonment	63	Outstanding personal achievement	28
Death of a close family member	63	Spouse starts or stops work	26
Personal injury or illness	53	Beginning or end school	26
Marriage	50	Change in living conditions	25
Dismissal from work	47	Revision of personal habits	24
Marital reconciliation	45	Trouble with boss	23
Retirement	45	Change in working hours or conditions	20
Change in health of family member	44	Change in residence	20
Pregnancy	40	Change in schools	20
Sexual difficulties	39	Change in recreation	19
Gain a new family member	39	Change in church activities	19
Business readjustment	39	Change in social activities	18
Change in financial state	38	Minor mortgage or loan	17
Death of a close friend	37	Change in sleeping habits	16
Change to different line of work	36	Change in number of family reunions	15
Change in frequency of arguments	35	Change in eating habits	15
Major mortgage	32	Vacation	13
Foreclosure of mortgage or loan	30	Christmas	12
		Minor violation of law	11

Table 1 The Holms and Rahe Life Stress Inventory. (Adapted from Harvard Medical School Special Health Report (2008))

Lazarus and Folkman believed, that the little daily hassles more than the major life events stressed people the most and may cause mental and physical problems. Kanner, Coyne, Schaefer and Lazarus have created the Hassles and Uplifts Scale (HSUP) in 1981, that helps to measure respondents’ attitudes about daily situations. Daily causes of stress include environmental stressors, family and relationship stressors, work stressors and social stressors. (Miller, Tobacyk & Wilcox 1985)

When individuals experiences difficulties in coping with the stressors, they begin to show signs and symptoms that indicate it. These symptoms can be cognitive, physical, emotional and behavioral, as illustrated in the following table.

Stress Warning Signs and Symptoms	
Cognitive Symptoms	Emotional Symptoms
<ul style="list-style-type: none"> ▪ Memory problems ▪ Inability to concentrate ▪ Poor judgment ▪ Seeing only the negative ▪ Anxious or racing thoughts ▪ Constant worrying 	<ul style="list-style-type: none"> ▪ Moodiness ▪ Irritability or short temper ▪ Agitation, inability to relax ▪ Feeling overwhelmed ▪ Sense of loneliness and isolation ▪ Depression or general unhappiness
Physical Symptoms	Behavioral Symptoms
<ul style="list-style-type: none"> ▪ Aches and pains ▪ Diarrhea or constipation ▪ Nausea, dizziness ▪ Chest pain, rapid heartbeat ▪ Loss of sex drive ▪ Frequent colds 	<ul style="list-style-type: none"> ▪ Eating more or less ▪ Sleeping too much or too little ▪ Isolating yourself from others ▪ Procrastinating or neglecting responsibilities ▪ Using alcohol, cigarettes, or drugs to relax ▪ Nervous habits (e.g. nail biting, pacing)

Table 2. Stress symptoms (Adapted from Chad Abbott)

2.1.5. Occupational stress

Stavroula Leka, Amanda Griffiths and Tom Cox (2003) stated that work stress is recognized world-wide as a major challenge to worker's health and productivity. (Leka et al. 2003)

M. K. Loo, Salmiah Mohamad Amin and Nor Sa adah Abd Rahman defined occupational stress as "inability to deal with pressures in workplace, because of the person without the ability to fulfill working requirements and working conditions". (Loo et al 2015)

According to Melanie Bickford and Canadian Mental Health Association, definition of workplace stress is "harmful physical and emotional responses that can result from conflicts between job demands on the employee and the amount of control an employee has over meeting these demands".

The three most prevalent theories of occupational stress include:

the person-environment (PE) fit theory - stress appears from an inconsistency between person and environment. Individuals feel that their work environment do not fit well with their needs, wants, and desires. Environmental demands include job requirements, role expectations, rules and norms;

the framework of occupational stress – “occupational stress is a total process including the environmental sources of stress and the individual’s perception of them. Recognized stress and the resulting strains are explained as a snowball effect – negative feelings increase level of stress. Acute depression, alcoholism, unemployment, and diseases may follow the accumulation of physiological, psychological and behavioral strains;

the demand-control-support model – occupational stress depends on the work content, which divided into two components: job demands and job control. In situations where there are high demands, very low control and strong level of strain, the great level of occupational stress will occur. (Bickford 2005)

Stress can be provoked by any type of situation at the work place and any type of person can suffer from it. At the Figure 3 we can see the causes and consequences of occupational stress.

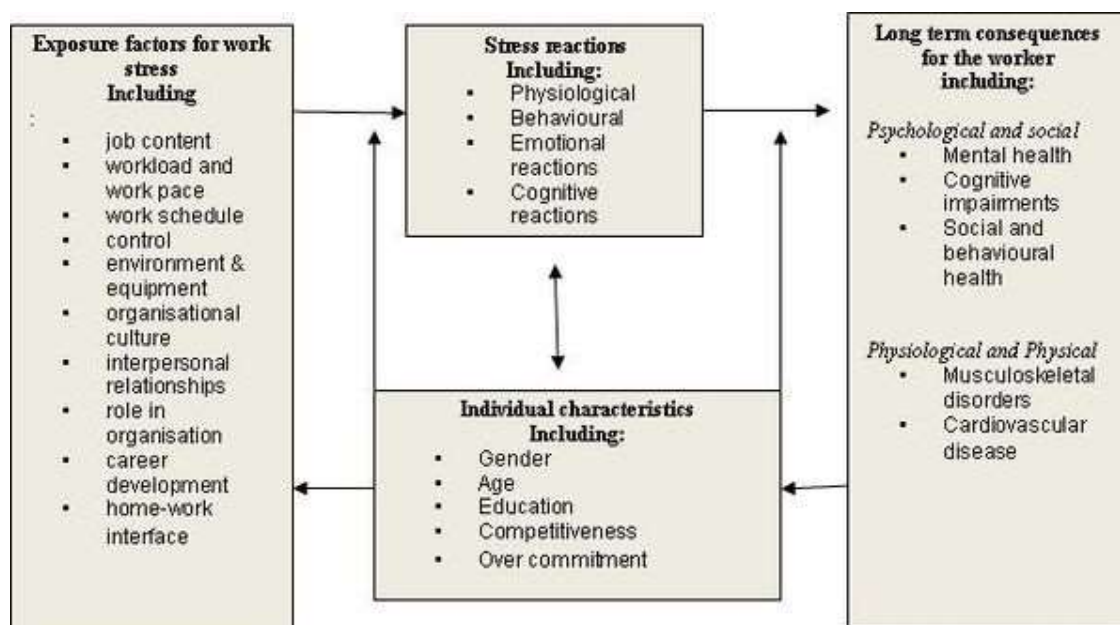


Figure 3. Work-related stress: causes and consequences (Adapted from Hassard J., Cox T.)

2.1.6. Consequences of stress

According to Melanie Bickford, human natural response to stress may cause physical and mental harm. Stress can be associated with negative emotions and vulnerability, hyperactivity of the autonomic nervous system, high hormonal base levels and psychosomatic symptoms. (Bickford 2005)

Stress may also have influence on the immune system, that means that body become more vulnerable to infections.

People under the stress, especially long-term stress, find difficult to maintain a healthy balance between work- and leisure-time. Moreover, people who don't know how to cope with the stress,

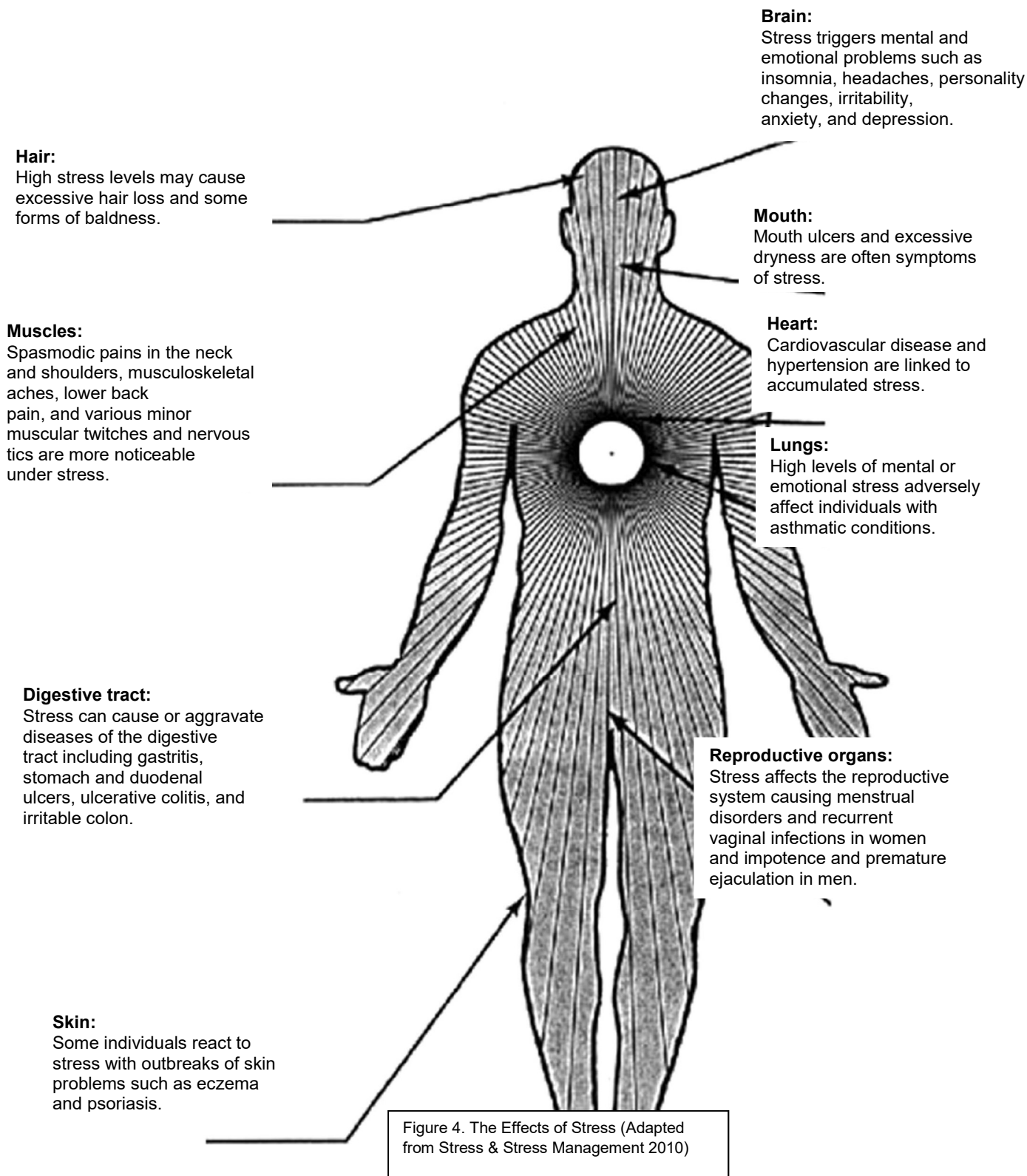
very often use “relaxants” such as alcohol, smoking, drugs and strong medicine. (Leka et al. 2003)

There are many different emotional and physical illnesses, that have been associated with stress including “depression, anxiety, heart attacks, stroke, hypertension, immune system disturbances that increase susceptibility to infections, a host of viral linked disorders ranging from the common cold to herpes to certain cancers, as well as autoimmune diseases like rheumatoid arthritis and multiple sclerosis. In addition, stress can have direct effects on the skin (rashes, hives, atopic dermatitis), the gastrointestinal system (GERD, peptic ulcer, irritable bowel syndrome, ulcerative colitis) and can contribute to insomnia and degenerative neurological disorders like Parkinson’s disease”. (Stress & Stress Management 2010)

More detailed illustration of stress effect can be found at the Figure 4.

To avoid dramatic consequences of stress, people should pay attention to any of symptoms that may appear and react in time.





2.1.7. Stress among the health care professionals

Working in a health care field often require to deal with very demanding situations at the work place. Every day health care professionals meet with pain, suffering, injuries and death. Moreover,

overload, long shifts, lack of employees, pressure of responsibility – all these aspects make health care one of the most stressful sphere.

According to Kathryn Wilkins (2007), in 2003 almost half of Canadian health care workers (413,000) reported, that most days on the job were “quite” or “extremely” stressful. (Wilkins 2007)

Susmita Halder and Akash Kumar Mahato (2013) made a research conducted to find out a stress and well-being level of health care providers in Kolkata. A sample consists of 50 professionals of both sex – 15 doctors, 15 nurses, 15 technicians and 5 paramedics. The results showed that stress is a “clearly problem” for 33% of nurses, 20% of paramedics and technicians and 13.3% of doctors. Stress as a “major problem” reported 13.3% of nurses and 6.6% of technicians. (Halder, Mahato 2013)

According to research, which took place at the North Tunisia, from 100 health care professionals, 37% reported about working more than 40 hours per week, 47% had high levels of emotional exhaustion, 36.6% had a high level of depersonalization and 33% had a low level of professional accomplishment. (Maaroufi et al. 2015)

Moreover, one-fourth of hospital doctors in Germany took part at the survey, that showed that 22% have job strain. Also, about one-fifth of the hospital doctors reported that they thought about giving up their profession at least a 1-2 times per month. Furthermore, an excessive physician workload considered “sometimes or often” as a reason of that the impaired quality of patient care by 44%. A cross-sectional study conducted in 2011 in Dubai informed that 26.2% from 282 doctors have a high level of total job stress, close results were in UK. (Al Mazrouei A. M. et al. 2015)

According to the American Psychological Association (APA), in 2008 the main stress factors at the work were heavy workloads, low salaries and lack of opportunity for growth and career – 43%, unrealistic job expectations – 40%, security – 34%. The higher stress level, the low level of service delivered to patients.

Health Advocates reported, that stress - related complications or sleepiness associated with 60% - 80% of job accidents. According to the National Institution for Occupational Safety and Health (NIOSH) in 2008, 60% - 90% of low level patient's care depend on stress of health care professionals. (Etim, J. J. et al. 2015)

2.1.8. Nursing stress and patient care

According to Barbara Farquharson, Cheryl Bell, Derek Johnston, Martyn Jones, Pat Schofield, Julia Allan, Ian Ricketts, Kenny Morrison and Marie Johnston, stress among nurses is an important aspect that may have impact not only on their health, but also on the quality of care that they provide. (Farquharson et al. 2013)

The causes of stress were discussed at the previous chapter, however here we are going to describe a connection between stress factors and nursing care. Overload at work one of the main causes of stress, according to Lois Berry and Paul Curry (2012), nurse's work schedule may effects the patient's outcome. At the hospitals where have been reported schedules with long work hours, the chance of occurrence the pneumonia deaths were 31% greater and 24% more likely to occur when nurses have limited breaks. When nurses reported about "working while sick", the mortality occurrence were detected 39% for patients with congestive heart failure.

The under-staffing at the medical sector leads to increasing of duties. The Canadian study showed that patients can be in a danger when nurse are interrupted during the work.

The fatigue is a consequence of workload and is a factor that cause stress. The Canadian survey showed that 6,312 reported that fatigue has the main negative impact on decision making, problem-solving and other aspects that include in patient care.

The stress is a reason that can influence on a work attendance. In 2010, the Statistics Canada Labour Force data showed, around 19,200 of Canadian nurses were not attending job because of the illness or disability. (Berry, Curry 2012)

According to Chin-Tien Hsu, in the U.S medical errors account more than 98000 deaths every year, moreover, 58 % of these deaths may be avoided. The nurses as a health care professionals have an important role in monitoring patient safety. Research conducted in 12 hospitals in Taipei, Tainan, and Kaohsiung with 494 professional nursing staff. The results showed the positive correlation between nursing errors and stress. (Hsu 2012)

23 nurses participated at the research conducted by Astrid Berland, Gerd Karin Natvig and Doris Gundersen. The study took part in Norway in two regional hospitals and focused on examining the effects of work-related stress on patient safety. Results showed that many of participant think that "time pressure is dangerous and can have safety consequences for the patient". (Berland et al. 2007)

2.2. Psychological methods and coping techniques

2.2.1. Stress management techniques

According to Liza Varvogli and Christina Darviri (2011), stress management techniques may use not only for coping with diagnosed condition, but also for the prevention and protection, as a daily routine. (Varvogli, Darviri 2011)

Lazarus and Folkman state, that coping is “constantly changing, cognitive and behavioral efforts, aimed to master specific external and internal expectations, evaluated by a person as aggravating or exceeding his/her resources”.

There are different categories of the techniques, one of the classifications described by Patrycja Miedziun and Jan Czesław Czabała, they mentioned it at the article “Stress Management Techniques” (2015):

1. Physical activity: individual and group training, walking, tourism, physical work.
2. Replacement – techniques: hobbies, communication with friends, listening music, reading, creative activities.
3. Distancing from the problem – techniques: based on defense mechanisms, first described by Sigmund Freud. People use defense mechanisms to protect themselves from feelings of threat or regret. These processes are not under control of consciousness. Ego-defense mechanisms are common and essential. There are many different defense mechanisms, at the following table summarized and illustrated main of them. (McLeod 2009)

Mechanism	Description	Example
Repression	Repression is an unconscious mechanism employed by the ego to keep disturbing or threatening thoughts from becoming conscious.	During the Oedipus complex aggressive thoughts about the same sex parents are repressed
Denial	Denial involves blocking external events from awareness. If some situation is just too much to handle, the person just refuses to experience it.	For example, smokers may refuse to admit to themselves that smoking is bad for their health.
Projection	This involves individuals attributing their own unacceptable thoughts, feeling and motives to another person.	You might hate someone, but your superego tells you that such hatred is unacceptable. You can 'solve' the problem by believing that they hate you.
Displacement	Satisfying an impulse (e.g. aggression) with a substitute object.	Someone who is frustrated by his or her boss at work may go home and kick the dog,
Regression	This is a movement back in psychological time when one is faced with stress.	A child may begin to suck their thumb again or wet the bed when they need to spend some time in the hospital.
Sublimation	Satisfying an impulse (e.g. aggression) with a substitute object. In a socially acceptable way.	Sport is an example of putting our emotions (e.g. aggression) into something constructive.

Table 3. Main defense mechanisms (Adapted McLeod 2009)

Examples of techniques from this category may be forgetting, joking, pseudo-rational explanation, escaping in fantasies, neglecting the stressor and sleeping.

4. Escaping the difficulty – techniques: people try to find a pleasure in different types of addictions like substances abuse, eating, adrenaline or religious practices and resting.

5. Solving problems – techniques: analyzing the situation, planning the actions for solving a problem.

6. Support – techniques: based on searching help and support from others and contacting specialists.

7. Adjusting tension and emotions – techniques: yoga, meditation, breathing techniques, Jacobson's progressive muscle relaxation, Schultz's autogenic training, visualization, focusing on sensual impressions, autohypnosis, positive thinking.

8. Lack of activity, helplessness: passive waiting. (Miedziun, Czabała 2015)

2.2.2. Visualization (guided imagery)

Visualization or guided imagery involves using of imagination to help body to become more relaxed. According to Julie Burnett (2012), visualization can be used also in the medical sphere, to help patient to go through medical procedure or surgery and make rehabilitation faster. There have been many studies and researches that show that guided imagery can help people overcome different problems, such as stress and depression, pain and anger, also insomnia. (Burnett, 2012)

There are many definitions of guided imagery, we are going through few of them in this paper. Mosby's Medical Dictionary (2009) defines guided imagery as

“a therapeutic technique in which the patient enters a relaxed state and focuses on an image related to the issue being confronted. The therapist uses the image as the basis of an interactive dialogue to help the person resolve the issue. It is used for a wide variety of indications, including relaxation and stress management, behavior modification, pain management, and the treatment of life-threatening and terminal illness.”, and

“a nursing intervention from the Nursing Interventions Classification (NIC) defined as purposeful use of imagination to achieve a particular state, outcome, or action or to direct attention away from undesirable sensations.”

Gale Encyclopedia of Medicine (2006) defined as

“the use of relaxation and mental visualization to improve mood and/or physical well-being.”

The history of imagery started in Ancient times, where people used the hallucinogenic substances in the rituals for getting into altered state of consciousness. The dreams and visual pictures understood as a message from the “God” and interpreted as an order or instruction, that help to find a decision or solve a problem. These practices were common all over the world.

According to Martha Crampton (2005), Francis Galton and Alfred Binet were representatives of Western psychology and became founders of mental imagery as a part of intelligence and cognitive process. Pierre Janet was first who studied imagery from the psychotherapeutic point of view. His technique of substitution still in use in some schools that practicing imagery. The main pioneer in Germany, who started to use imagery in diagnosing and therapy was Carl Happich. In France, imagery technique developed by Robert Desoille, who adopted a Caslant’s theory about symbolic and archetypical images and called his method – “walking dream”. The main representative of Switzerland school was doctor Marc Guillerey, who started his studies at 1925 and named the method - "rêverie dirigée" (guided reverie). One of the main ideas of his approach was to identifying the imaginal body-image. Pierce Clark used imagery in work with narcissistic neuroses, Anna Freud practiced using of imagination in work with kids. Karl Jung created a method of “active imagination”, that include not only visualization, but other types of unconscious material that come from dreams, feelings and art therapy. The archetypical and symbolic interpretation of images is an important aspect in Jung’s method. In October 1977 John T. Shaffler organized the First American Conference on the Fantasy-Imaging Process, which took place at Chicago. (Crampton, 2005)

Dr. Martin Rossman and Dr. David Bresler in 1970s started to research new ways to use imagery for helping patients with life-threatening illnesses. (Prabu, Subhash 2015; Bresler, Rossman 1999) d

The most common scenes that often used for visualization are forest, beach, sea, but person may choose any place that feels comfortable and calm. Usually, imagery involves complex images that makes person to use all the senses – vision, smell, sound, feel and taste. (Williams, Carey 2003)

The script and instructions can be found at the Appendix 1.

2.2.3. Jacobson’s Progressive Muscle Relaxation

According to Segen's Medical Dictionary (2012), progressive relaxation is

“A relaxation technique, developed in 1929 by E. Jacobson at Harvard, and used in mind-body medicine to cope with stress, in which muscle groups are grasped in succession, starting at one end of body and going to the other”

Mosby's Medical Dictionary (2009) defines it as

“a technique for combating tension and anxiety by systematically tensing and relaxing muscle groups.”

The effectiveness of Jacobson's progressive muscle relaxation checked and described in many researches. D'Souza Josmitha Maria, Umarani J. and Shetty Asha P. (2015) proved in their research that progressive relaxation has reduced the academic stress among 100 adolescents studying in Mangaluru, Karnataka (D'Souza et al. 2015)

Nisha Shinde, Shinde KJ, Khatri SM, Deepali Hande, Vichare Bhushan (2013) studied the effect of Jacobson's technique on hypertension and stated that during experiment patients experienced decreasing of blood pressure and respiratory level. (Nisha et al. 2013)

One more research, made by Febu Elizabeth Joy, Tessy Treesa Jose and Asha K. Nayak (2014), showed that muscle relaxation positively effect on a level of social anxiety among high school adolescents in Karnataka. (Febu et al. 2014)

According to Paul M. Kehrer and F. J. McGuigan (2007), Jacobson made an important discovery in a complex work of mind and body. He found, that even the thought about the moving give the unique EMG response. Moreover, his research showed that mental activity decreased and almost disappeared if the skeletal musculature totally relaxed. Jacobson stated that “It might be naive to say that we think with our muscles, but it would be inaccurate to say that we think without them”. Another aspect of Jacobson's technique is emotional control, which may be achieved through relaxation. (Lehrer et al. 2007)

The script and instructions can be found at the Appendix 2.

2.2.4. Deep breathing techniques

The power of breathing and its influence on body and mind known from Ancient times.

According to Gale Encyclopedia of Medicines (2006), deep breathing helps *“expand the lungs and forces better distribution of the air into all sections of the lungs.”*

Mosby's Dictionary of Complementary and Alternative Medicine (2005) defines deep breathing as *“a quick relaxation technique in which attention is focused on breathing: deep inhalation and holding the breath for a few seconds before exhalation.”*

Ravinder Jerath and Vernon A. Barnes (2009) studied the role of slow deep breathing, the results showed that particular breathing technique has positive effect on autonomic nervous system, reduce level of blood pressure and heart rate. Moreover, deep breathing used with a meditation gave better results for patients with stress, anxiety, hypertension and other. (Jerath, Barnes 2009)

Another research made by Fatima D'silva, Vinay H. and N.V. Muninarayanappa (2014) proved that regular practicing of deep breathing technique helps patients with CAD to reduce level of blood pressure and anxiety. (D'silva et al. 2014)

One more interesting research made in USA by F. Joseph McClernon, Eric C. Westman, Jed E. Rose (2004) showed that smokers experienced the relieve in symptoms of smoking withdrawal after using the controlled deep breathing technique. (McClernon et al. 2004)

Sophia E. Armington (2015) described the effect of yoga breathing technique (pranayama) and posture (asana) in the treatment of PTSD. (Armington 2015)

The script and instructions can be found at the Appendix 3.

3. Purpose of the study, research hypothesis and question

The **purpose of the study** is to examine the effect of psychological methods and coping techniques on the level of stress among health care professionals.

The **aim of the study** is to reduce the level of stress among health care professionals

The **research hypothesis** – there will be a significant statistical difference in the stress level before and after practicing psychological methods and coping techniques.

The **research question** - Do psychological methods and coping techniques help to reduce the level of stress among health care professionals?



4. Research

4.1. Methodology

Setting

The study was conducted in Surgical Department at the State Institution “Departmental Hospital station Kherson ES “Odessa railway”” in Ukraine.

Sample

14 health care professionals, 8 doctors and 6 nurses, age between 22-53 years, 8 females and 6 males.

		Doctors (n=8)	Nurses (n=6)
Age	Range years	36-53	22-34
	Mean	44,33	26,2
Sex	Male	6	0
	Female	2	6
Marital Status	Married	8	4
	Single	0	2
Experience	Average	15 years	8 years

Table 4. Socio-demographic details of subject

Design

The experimental (quantitative) study. According to Stephanie Tierney (2008), the experimental design is a way to get the data about subject of interest, by using the method of correlation between samples. (Tierney 2008)

Tools

Data for this study was collected by using selected 2 self-administered questionnaires (SAQ) on a paper-and-pencil instrument. (Polit, Beck 2008)

1. Professional life stress scale by David Fontana, adapted from *Managing Stress*, The British Psychological Society and Routledge Ltd., 1989. It includes 22 questions; each response has own score. The level of stress is considered from different aspects: physical symptoms of stress and mental strain, life attitude and the ability to relax, self-attitude, satisfaction with own achievements, relationships with colleagues and supervisors.

According to Lina Bartkiene, the Cronbach’s alpha of the test is 0.636.

T. Kryukova, O. Ekimchik, O. Kovaleva made an adaptation of the method into Russian language. The procedure included forward and reverse translation of questionnaire, edition questions in accordance with the semantics and grammar of the Russian language, re-

testing, verifying the reliability of the scale psychometric methods. The adaptation of the scale was attended by 136 respondents between 20 and 53 years old, mean age was 36.7 years (SD 10.05 years). The scale received an average level of reliability - Cronbach's alpha coefficient ($\alpha = 0,64$, $\alpha_{stn} = 0.98$). (Kryukova, Ekimchik, Kovaleva 2010)

2. Psychological stress scale PSM-25 (Lemyre, Tessier, Fillion, translated and adapted in Russian by Vodopyanova N.). Originally this scale was developed by Lemyre in 1987, edited by Lemyre and Tessier in 1988. The questionnaire was in French language and included 49 questions (PSM49). In 1991 it has been translated and validated in English by Lemyre, Tessier and Fillion. The PSM measures the stress level, considering four components – affective, behavioral, cognitive and somatic.

In developing the methodology, the authors tried to eliminate the shortcomings of traditional methods for studying stress, aimed mainly at indirect measurement of psychological stress through stressors or pathological manifestations of anxiety, depression, frustration, and others. Questions formulated for normal population between the ages of 18 and 65 in relation to the different professional groups.

The method was tested on a sample of the authors of more than 5000 people in Canada, England, the United States, Puerto Rico, Colombia, Argentina and Japan. In Russia, the method was tested by N. Vodopyanova on a sample of teachers, students and commercial staff of 500 people. (Vodopyanova 2009)

According to Vodopyanova (2009), PSM has sufficient psychometric properties. PSM integral indicator of the scale of the Spielberger anxiety ($r = 0,73$) correlations were found, c index depression (Beck Depression Inventory) ($r = 0,75$). (Vodopyanova 2009)

Ethical consideration

During conducting a nursing research, it is very important to consider the ethical issues and principles. The word “ethics” originally from ancient Greek and defines as “the philosophical study of the moral value of human conduct and of the rules and principles that ought to govern it” (Collins English Dictionary 2014). According to Georgia Fouka and Marianna Mantzourou (2011), the ethical question about the conduction of the research rose after 1940's. (Fouka, Mantzourou 2011) The need of ethical guideline or code showed such historical cases as The Nazi Medical Experiments 1930-1940's, Tuskegee Syphilis Study 1932-1972, the injections of live cancer cells into elderly patients at the Jewish Chronic Disease Hospital in Brooklyn in 1960's, Willowbrook study - injections of HB virus to children. The different variations of codes of ethics have been created – Nuremberg Code (1947); The Declaration of Helsinki (1964), which revised in 2000; Ethical Principles of Psychologists and Code of Conduct (1992); Code of Ethics (1999); Code of medical ethics (2016). Nurses have their own ethical codes and guidelines – Human Rights

Guidelines for Nurses in Clinical and other Research (1975); Ethical Guidelines in the Conduct, Dissemination, and Implementation of Nursing Research (1995); Code of Ethics for Nurses with Interpretive Statements (2001); ICN Code of Ethics for Nurses (2000). (Polit, Beck 2008)

According to The Belmont report (1978), the three basic ethical principles are Respect for persons, Beneficence and Justice. Respect for Persons includes the right to self-determination and the right to full disclosure. The principle of Beneficence covers two main rules – “do not make harm” and “maximize possible benefits and minimize possible harms”. The third principle is Justice and it includes The Right to Equal Treatment and The right to Privacy. Moreover, the Belmont report described the requirements for the conduction of the research – informed consent, risk/benefit assessment, and the selection of subjects of research. Georgia Fouka and Marianna Mantzorou (2011) also considered the researcher skills as an important aspect of Nursing research. (Belmont report 1978; Fouka, Mantzorou 2011, Polit, Beck 2008; The Belmont Report 1978)

Through all the study ethical factors were considered and respected.

The permission to conduct the research was obtained from the head of Surgical Department. All responders were informed about aims of the research and participated voluntary. Anonymity and confidentiality were presented.

Validity and reliability

The quality of quantitative research could be achieved by taking into consideration such criteria as validity and reliability. According to Roberta Heale and Alison Twycross (2015), **validity** can be defined as a degree to which the notion is precisely measured in the quantitative research.

There are three types of validity –

- Content (Face) validity – the degree to which the empirical measurement reflects the specific content area.
- Construct - the degree to which a research tools measures the expected construct.
- Criterion validity – the degree to which a research tool is associated to other tools that measure the same variables.

The **reliability** refers to the precision and stability of data obtained in the research.

- Homogeneity (internal consistency) – could be checked by Cronbach’s alfa, item-to-total correlation, Kuder Richardson coefficient and split-half reliability.
- Stability – could be checked by test–retest and parallel or alternate-form reliability testing.
- Equivalence – could be checked by inter-rater reliability - the comparing of the ratings of researchers, by using the correlation co-efficient.

The reliability and validity should be the essential components of nursing research. (Heale, Twycross 2015; Polit, Beck 2008)

The researching tools have average level of reliability by Cronbach's alfa and sufficient psychometric properties.

Limitations

According to Looi Theam Choy (2014) quantitative research methodology has some limitations (weaknesses) which could effect on the results of the study. Many important information about sample can be missing or inadequately understood without citing to additional qualitative data. The trustworthy quantitative research demands the big-size samples, but lack of the skills and resources could make large-scale research impossible to conduct. (Choy 2014) Harvey Russell Bernard (2006) described main limitations (disadvantages) of Self-Administered Questionnaire (SAQ) – the lack of the control on interpretation of questions by responders; the high level of denial to participate; participants not always give true answers. (Bernard 2006) The main weaknesses of the experimental study are the little (no) control on external factors that could have influence on participants and “treatment” (experimental intervention); randomization problem; the observer-expectancy effect. (McKenna, Morrison 2012)

The size of the sample used at the experimental part of this thesis is only 14 participants, which is a strong limitation for a trustworthiness and generalizing of the results. There have been presented a lack of control on Intervention, because participants agreed to practicing psychological methods at home.

4.2. Procedure

First stage – Pre-Intervention

In the beginning, the permission for performing the research was obtained from the Head of Surgery Department.

After the permission was granted, first meeting with the health professionals have been arranged. Invitation for the meeting received 20 health care providers, 18 came and 14 decided to take a part at the study.

At the first meeting, respondents were informed about the aim of the thesis research and ensured about confidentiality, consent about using data was taken.

Researcher gave instructions for Professional life stress scale (David Fontana) and Psychological stress scale PSM-25 (Lemyre, Tessier, Fillion, translated and adapted in Russian by Vodopyanova N.). The answers were recorded.

In addition, responders were asked to give socio-demographic detail for more accurate research.

Second stage - Intervention

All participants were divided into 2 groups by using method of randomization. (Random Team Generator)

The first group – experimental.

The second group – control.

Second meeting was only with the experimental group. Health care professionals got the information about stress management, psychological methods and coping techniques. Researcher explained to participants three main technique – visualization (guided imagery), Jacobson's progressive muscle relaxation and deep breathing techniques. The printed materials with instructions were given. The participants agreed to practice particular techniques every day, **during two weeks.**

Researcher followed up and encouraged health care providers to practice stress management techniques.

Third stage – Post - Intervention

Third meeting was arranged again with all participants. Same as at the first meeting, researcher gave instructions for Professional life stress scale (David Fontana) and Psychological stress scale PSM-25 (Lemyre, Tessier, Fillion, translated and adapted in Russian by Vodopyanova N.). The answers were recorded.

5. Results

Data has been collected and tabled.

Pre-Intervention scores (Experimental group)		
	Fontana	PSM-25
LV	33	134
IA	15	72
MA	36	165
SB	16	52
PP	38	161
NN	25	157
MV	23	71
Pre-Intervention scores (Control group)		
VV	15	45
LA	30	156
IT	7	32
OL	14	46
ND	46	164
VI	7	44
MC	24	146

Post-Intervention scores (Experimental group)		
	Fontana	PSM-25
LV	26	115
IA	6	50
MA	30	153
SB	14	52
PP	31	154
NN	24	149
MV	21	74
Post-Intervention scores (Control group)		
VV	12	39
LA	31	155
IT	8	43
OL	9	54
ND	46	163
VI	15	75
MC	26	144

Table 5.1. (left) Pre-Intervention Scores

Table 5.2. (right) Post-Intervention Scores

All results from pre-intervention and post-intervention, from both groups were calculated and presented in percentages.

Professional Life Stress Scale by David Fontana	Pre-Intervention scores (Experimental group)		Pre-Intervention scores (Control group)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Stress isn't a problem	1	14.29	4	52.14
Moderate range of stress	3	42.86	2	28.57
Stress is clearly a problem	3	42.86		
Stress is a major problem			1	14.29

Professional Life Stress Scale by David Fontana	Post-Intervention scores (Experimental group)		Post-Intervention scores (Control group)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Stress isn't a problem	2	28.57	4	52.14
Moderate range of stress	4	52.14	1	14.29
Stress is clearly a problem	1	14.29	1	14.29
Stress is a major problem			1	14.29

Table 6.1. Professional Life Stress Scale by David Fontana. Pre- and Post-Intervention scores in %

PSM-25	Pre-Intervention scores (Experimental group)		Pre-Intervention scores (Control group)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Low level of stress	3	42.86	4	52.14
Moderate level of stress	1	14.29	1	14.29
High level of stress	3	42.86	2	28.57
PSM-25	Post-Intervention scores (Experimental group)		Post-Intervention scores (Control group)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Low level of stress	3	42.86	4	52.14
Moderate level of stress	4	52.14	1	14.29
High level of stress	1	14.29	2	28.57

Table 6.2. PSM-25. Pre- and Post-Intervention scores in %

At the following histograms, have been described the differences between Pre- and Post-Intervention results at the Experimental and Control groups. We were considering Level of Professional Life Stress and Level of Psychological Stress.

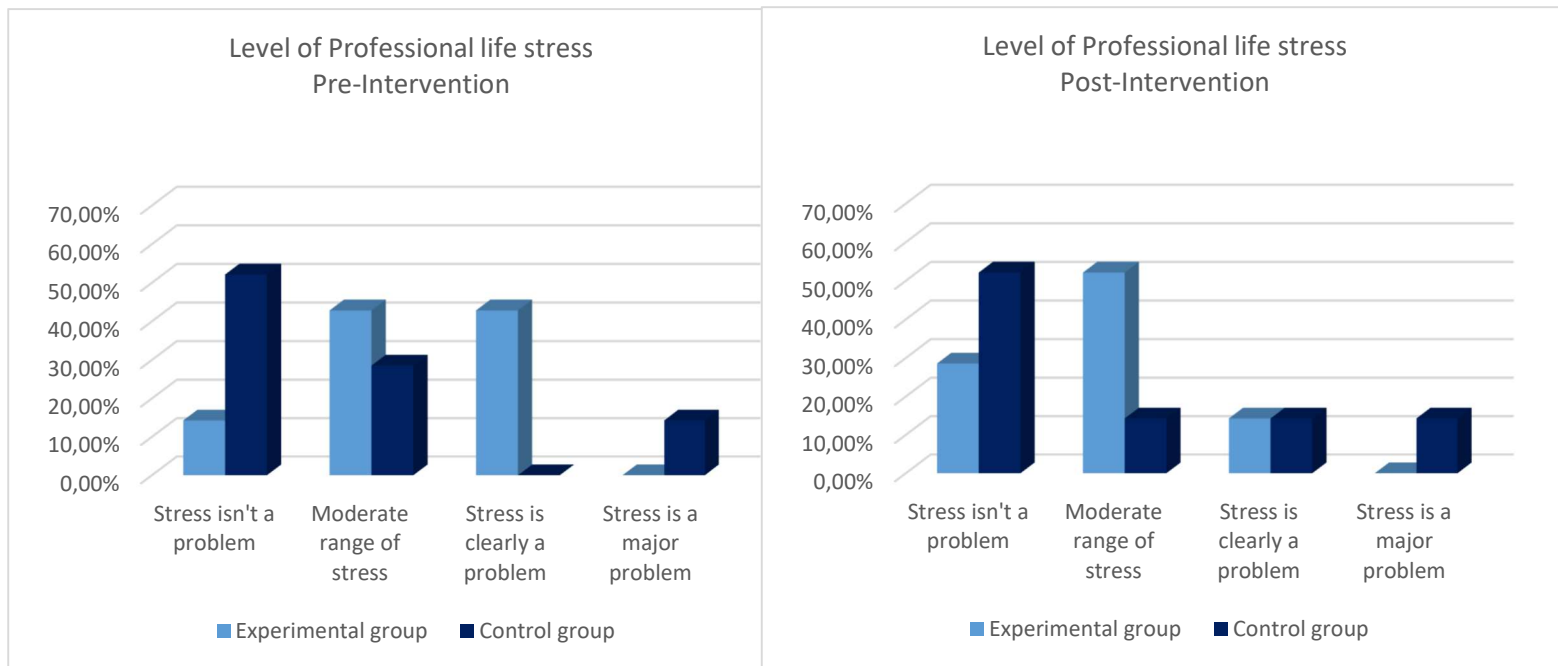


Figure 5.1. Level of professional life stress Pre- and Post-Intervention

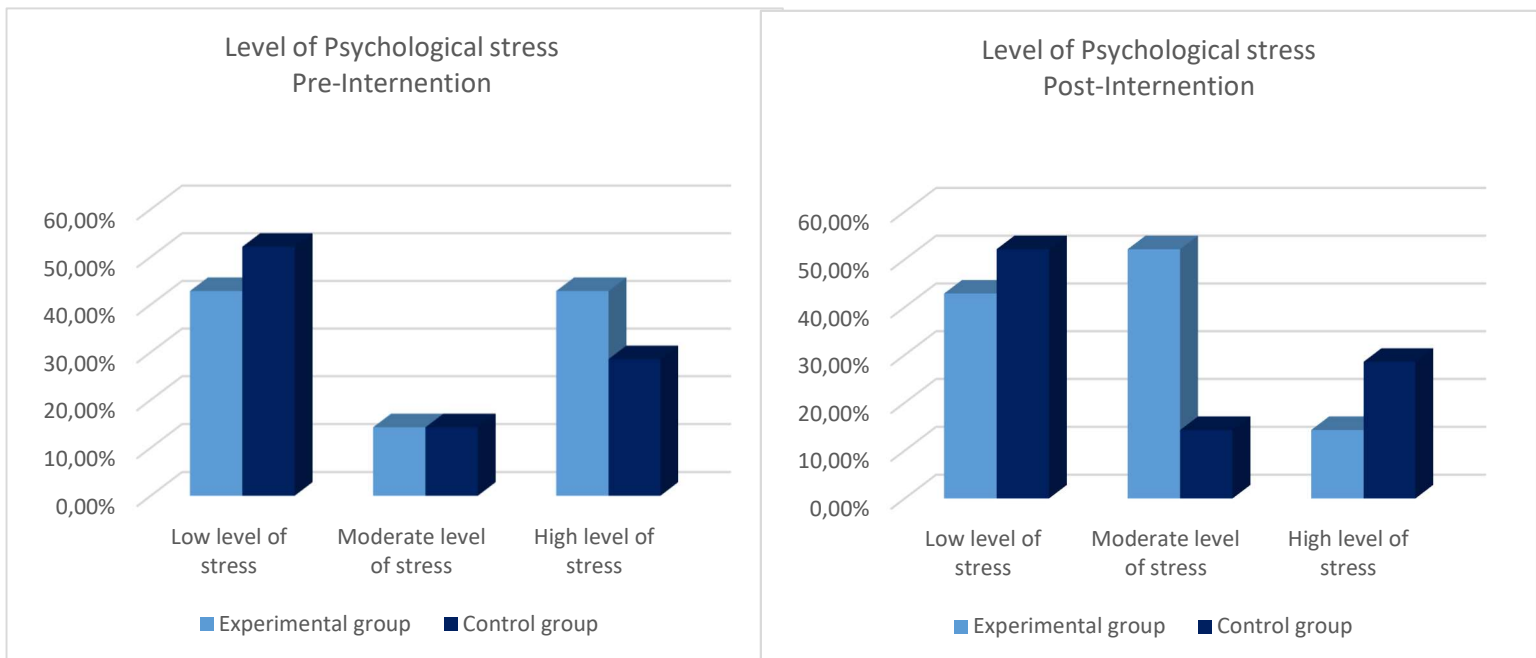


Figure 5.2. Level of psychological stress Pre- and Post-Intervention

For confirming the results of the research, we decided to check findings by statistical methods. Student's t-test for comparison 2 dependent samples has been chosen. The paired t-test t is used to compare two means of the same subject before and after the intervention.



Hypothesis:

$$H_0 : \mu_d = 0$$

H0 hypothesis – no significant differences

$$H_a : \mu_d \neq 0$$

Ha hypothesis – significant differences

$$t = \frac{M_d}{\sigma_d / \sqrt{n}} \quad d_i = x_{i1} - x_{i2} \quad \bar{x}_d = \frac{\sum_{i=1}^n d_i}{n}$$

$$\hat{\sigma}_d = \sqrt{\frac{\sum_{i=1}^n (d_i - \bar{x}_d)^2}{n-1}}$$

The dependence of two measures from the two samples is gathered from the differences of the measurement pairs. (Shier 2004)

Treatment 1	Treatment 2	Diff (T2 - T1)	Dev (Diff - M)	Sq. Dev	Difference Scores Calculations
33	26	-7	-2.14	4.59	Mean: -4.86 $\mu = 0$ $S^2 = SS/df = 58.86/(7-1) = 9.81$ $S^2_M = S^2/N = 9.81/7 = 1.40$ $S_M = \sqrt{S^2_M} = \sqrt{1.40} = 1.18$
15	6	-9	-4.14	17.16	
36	30	-6	-1.14	1.31	
16	14	-2	2.86	8.16	
38	31	-7	-2.14	4.59	
25	24	-1	3.86	14.88	
23	21	-2	2.86	8.16	
		M: -4.86		S: 58.86	

Table 7.1. Professional Life Stress Scale by David Fontana (Experimental group)

Treatment 1	Treatment 2	Diff (T2 - T1)	Dev (Diff - M)	Sq. Dev	Difference Scores Calculations
15	12	-3	-3.57	12.76	Mean: 0.57 $\mu = 0$ $S^2 = SS/df = 101.71/(7-1) = 16.95$ $S^2_M = S^2/N = 16.95/7 = 2.42$ $S_M = \sqrt{S^2_M} = \sqrt{2.42} = 1.56$
30	31	1	0.43	0.18	
7	8	1	0.43	0.18	
14	9	-5	-5.57	31.04	
46	46	0	-0.57	0.33	
7	15	8	7.43	55.18	
24	26	2	1.43	2.04	
		M: 0.57		S: 101.71	

Table 7.2. Professional Life Stress Scale by David Fontana (Control group)

Treatment 1	Treatment 2	Diff (T2 - T1)	Dev (Diff - M)	Sq. Dev	Difference Scores Calculations
134	115	-19	-9.71	94.37	Mean: -9.29 $\mu = 0$ $S^2 = SS/df = 507.43/(7-1) = 84.57$ $S^2_M = S^2/N = 84.57/7 = 12.08$ $S_M = \sqrt{S^2_M} = \sqrt{12.08} = 3.48$
72	50	-22	-12.71	161.65	
165	153	-12	-2.71	7.37	
52	52	0	9.29	86.22	
161	154	-7	2.29	5.22	
157	149	-8	1.29	1.65	
71	74	3	12.29	150.94	
		M: -9.29		S: 507.43	T-value Calculation $t = (M - \mu)/S_M = (-9.29 - 0)/3.48 = -2.67$

Table 8.1. PSM-25 (Experimental group)

Treatment 1	Treatment 2	Diff (T2 - T1)	Dev (Diff - M)	Sq. Dev	Difference Scores Calculations
45	39	-6	-11.71	137.22	Mean: 5.71 $\mu = 0$ $S^2 = SS/df = 959.43/(7-1) = 159.90$ $S^2_M = S^2/N = 159.90/7 = 22.84$ $S_M = \sqrt{S^2_M} = \sqrt{22.84} = 4.78$
156	155	-1	-6.71	45.08	
32	43	11	5.29	27.94	
46	54	8	2.29	5.22	
164	163	-1	-6.71	45.08	
44	75	31	25.29	639.37	
146	144	-2	-7.71	59.51	
		M: 5.71		S: 959.43	T-value Calculation $t = (M - \mu)/S_M = (5.71 - 0)/4.78 = 1.20$

Table 8.2. PSM-25 (Control group)

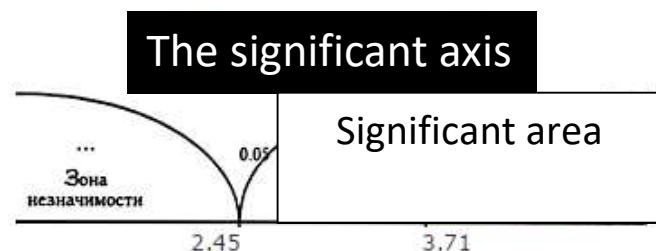
Student's T Critical Values

$$f = n - 1$$

$$f = 7 - 1 = 6$$

Conf. Level	50%	80%	90%	95%	98%	99%
One Tail	0.250	0.100	0.050	0.025	0.010	0.005
Two Tail	0.500	0.200	0.100	0.050	0.020	0.010
df = 1	1.000	3.078	6.314	12.706	31.821	63.657
2	0.816	1.886	2.920	4.303	6.965	9.925
3	0.765	1.638	2.353	3.182	4.541	5.841
4	0.741	1.533	2.132	2.776	3.747	4.604
5	0.727	1.476	2.015	2.571	3.365	4.032
6	0.718	1.440	1.943	2.447	3.143	3.707
7	0.711	1.415	1.895	2.365	2.998	3.499
8	0.706	1.397	1.860	2.306	2.896	3.355
9	0.703	1.383	1.833	2.262	2.821	3.250
10	0.700	1.372	1.812	2.228	2.764	3.169

$p \leq 0.05$	$p \leq 0.01$
2.45	3.71



Differences between doctors and nurses also were calculated.

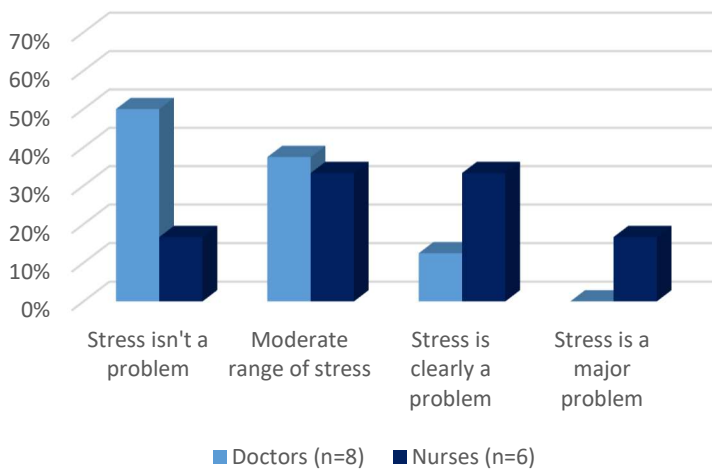
	Doctors		Nurses	
	PLSS	PSM-25	PLSS	PSM-25
1	33	134	36	165
2	15	72	38	161
3	16	52	25	157
4	23	71	30	156
5	15	45	7	32
6	14	46	46	164
7	7	44		
8	24	146		

Table 9.1. PLSS and PSM-25. Doctor's and nurse's results.

Professional Life Stress Scale by David Fontana	Doctors (n=8)		Nurses (n=6)	
Level of Professional life stress	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Stress isn't a problem	4	50	1	16,67
Moderate range of stress	3	37,5	2	33,33
Stress is clearly a problem	1	12,5	2	33,33
Stress is a major problem			1	16,67
PSM-25	Doctors (n=8)		Nurses (n=6)	
Level of Psychological stress	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Low level of stress	6	75	1	16,67
Moderate level of stress	2	25		
High level of stress			5	83,13

Table 9.2. PLSS and PSM-25. Doctor's and nurse's results in %

Level of Professional life stress



Level of Psychological stress

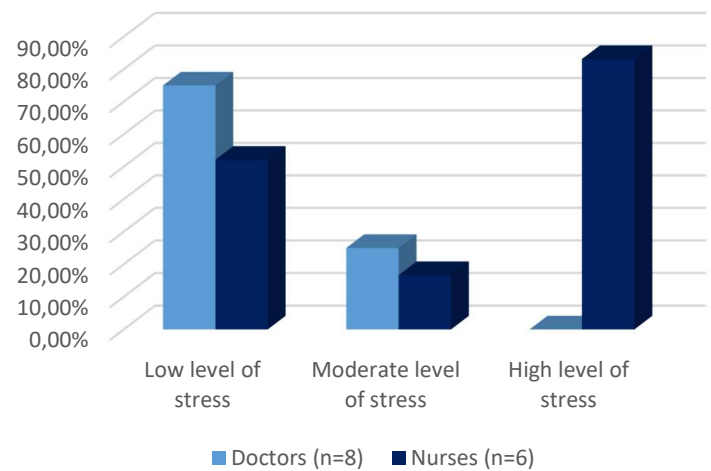


Figure 6. Comparison Doctors and Nurses Results

6. Discussion

Sample: Mean age of doctors was 44.33 years, while that of nurses 26.2 years. Majority of the doctors, were male, while nurses were only females. Majority of the sample was married. The average experience of doctors was 15 years, while nurses – 8 years. (Table 4)

The analyze of results from PLSS and PSM-25 illustrated that doctors have lower level of professional stress and level of psychological stress than nurses. Both questionnaires detected that “stress is a major problem” for 16.67% and “high level of stress” for 83.13% of nurses, while doctors had 0%.

Professional life stress scale by David Fontana showed that “stress is a clear problem” for 33.33% of nurses, same as “moderate range of stress”; while doctor’s results were 12.5% and 37.5% respectively. “Stress is not a problem” only for 16.67% of nurses, while for doctors it was 50%.

Psychological stress measure showed that “moderate level of stress” had only 25% of doctors, while nurses had 0% by this category. “Low level of stress” showed 75% of doctors, while nurses only 16.67%. (Table 9.1, 9.2)

The percentage results from PLSS by David Fontana from Experimental and Control groups illustrated at the Table 6.1. and Figure 5.1. The pre-Intervention results of Experimental group were 14.29% “stress isn’t a problem”, 42.86% “moderate range of stress” and “stress is a clear problem”, while at the Control group – 52.14% “stress isn’t a problem”, 28.57% “moderate range of stress” and 14.29% “stress is a major problem”. The Post-Intervention results of Experimental

group showed that level of professional life stress became lower – 28.57% “stress isn’t a problem”, 52.14% “moderate range of stress” and 14.29% “stress is a clear problem”. While at the Control group the differences mostly were not found, only “moderate range of stress” and “stress is a clear problem” changed to 14.29%

The percentage results from PSM-25 from Experimental and Control groups illustrated at the Table 6.2. and Figure 5.2. The Pre-Intervention results of Experimental group were 42.86% “low level of stress” and “high level of stress” and 14.29% “moderate level of stress”, while at the Control group – 52.14% “low level of stress”, 14.29% “moderate level of stress” and 28.57% “high level of stress”. The Post-Intervention results of Experimental group showed that level of psychological stress became lower in general – “low level of stress” remain same 42.86%, “moderate level of stress” - 52.14% and “high level of stress” was 14.29%. While at the Control group the differences were not found.

Table 7.1. – 8.2. showed the statistical differences, found by using Student’s T-test, in results at the Experimental and Control groups from both questionnaires.

As seen at the table 7.1. at the Experimental group the value of t is -4.103042. The value of p is 0.003168. **The result is significant at $p \leq 0.05$.** We can suppose that the level of professional life stress is lower after practicing psychological methods and coping techniques.

Table 8.1. showed that PSM-25 at the Experimental group, the value of t is -2.671484. The value of p is 0.018477. **The result is significant at $p \leq 0.05$.** We can suppose that the level of psychological stress is lower after practicing psychological methods and coping techniques.

At the Control group, no significant differences were found.

The research hypothesis (H_a) of this thesis may be confirmed – there were a significant statistical difference in the stress level before and after practicing psychological methods and coping techniques.

However, we cannot say, that results obtained in this study are trustworthy, even we found the significant differences between Pre- and Post-Intervention scores. Due to limitations that have been presented - the small-sized sample, lack of control on intervention and trustworthiness of answers - the results from the research part of this thesis cannot be generalized. The purpose of doing this experiment was to learn more about the method and prepare the base for the future researches.

7. Conclusion

The main purpose of this thesis was to examine the effect of psychological methods and coping techniques on the level of stress among health care professionals. This topic has been chosen, because stress among health care professionals and especially nurses is an important aspect that could influence on health and on quality of care that they provide. (Farquharson et al. 2013) In this thesis we tried to find and study the psychological methods and coping techniques as a type of stress management that could be used by care givers.

The study took place in Surgical Department at the State Institution “Departmental Hospital station Kherson ES “Odessa railway”” in Ukraine. 14 health care professionals took part at the research, 8 doctors and 6 nurses. Participants were divided in two groups by using method of randomization (experimental and control). Responders filled the questioners – Psychological Life Stress Scale by David Fontana - PLSS) and Psychological stress scale - PSM-25 (Lemyre, Tessier, Fillion, translated and adapted in Russian by Vodopyanova N.). All obtained data were analyzed and interpreted, Student’s t-test for comparison 2 dependent samples has been used.

The results showed that stress level among health care professionals is high and can be easily named as a problem. However, experimental group that became familiar and used Guided imagery (Visualization), Jacobson’s progressive muscle relaxation and Deep breathing techniques might have the significant lower level of professional and psychological stress after practicing these methods.

This study is aimed to health care professionals in general. We recommend to repeat the research on a bigger sample for confirming findings and get more trustworthy results. The future plan according this study is to wider it, add a “burn out” as an important aspect that have influence on health care professionals and make it more International.

8. References

- Al Mazrouei A. M., Al Faisal W., Hussein H., El Sawaf E., Wasfy A. 2015. Determinants of Workplace Stress Among Healthcare Professionals in Dubai, Physicians Experience. *Advances in Applied Psychology* Vol. 1, No. 1, 2015, pp. 31-34 Accessed 01.10.2016
<http://www.aiscience.org/journal/aap>
- American Psychological Association. 2015. Stress in America. Accessed 01.10.2016
<http://www.sciencedirect.com/science/article/pii/S2213058614200064>
- Anxiety and Depression Association of America. Posttraumatic Stress Disorder: PTSD. Accessed 01.10.2016
https://www.adaa.org/sites/default/files/ADAA_PTSD.pdf
- Armington S. E. 2015. Take a Deep Breath: How Yoga Postures and Breathing Techniques Can Impact PTSD Symptoms. *Scripps Senior Theses*. Paper 531. Accessed 03.10.2016
http://scholarship.claremont.edu/cgi/viewcontent.cgi?article=1597&context=scripps_theses
- Bernard H. R. 2006. *Research methods in anthropology : qualitative and quantitative approaches*. 4th ed. Accessed 23.10.2016
<http://www.antropocaos.com.ar/Russel-Research-Method-in-Anthropology.pdf>
- Berry L., Curry P. 2005. Nursing Workload and Patient Care. Understanding the Value of Nurses, the Effects of Excessive Workload, and How Nurse-Patient Ratios and Dynamic Staffing Models Can Help. The Canadian Federation of Nurses Unions. Accessed 01.10.2016
https://nursesunions.ca/sites/default/files/cfnu_workload_paper_pdf.pdf
- Bickford M. 2005. Stress in the Workplace: A General Overview of the Causes, the Effects, and the Solutions. Canadian Mental Health Association. Newfoundland and Labrador Division. Accessed 05.10.2016
<http://changeforthegood.ca/wp-content/uploads/2014/09/workplace-stress.pdf>
- Bresler D. E., Rossman M. L. 1999. *Interactive Guided Imagery. Clinician's Rapid Access Guide To Complementary and Alternative Medicine* NY. Mosby Accessed 01.10.2016
<http://acadgi.com/resources/Publications/Imagery-Publications/Interactive-Guided-Imagery.pdf>
- Burnett J. 2012. Guided Imagery As An Adjunct To Pharmacologic Pain Control At End Of Life. Accessed 05.10.2016
<http://www.nacsw.org/Publications/Proceedings2012/BurnettJGuidedImagery.pdf>
- Butler. G. Definitions of stress. CHAPTER 1. 1993. *The Journal of the Royal College of General Practitioners*. Occasional paper. 61. 1–5. Accessed 01.10.2016
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2560943/pdf/occpaper00115-0007.pdf>
- Choy L. T. 2014. The Strengths and Weaknesses of Research Methodology: Comparison and Complimentary between Qualitative and Quantitative Approaches. *Journal Of Humanities And Social Science*. Vol. 19, Issue 4, Ver. III, PP 99-104 Accessed 03.10.2016

<http://www.iosrjournals.org/iosr-jhss/papers/Vol19-issue4/Version-3/N0194399104.pdf>

Colligan T. W., Higgins E. M. 2005. Workplace Stress: Etiology and Consequences. *Journal of Workplace Behavioral Health*, Vol. 21(2) Accessed 08.10.2016
<http://www.choixdecariere.com/pdf/6573/2010/ColliganHiggins2005.pdf>

Collins English Dictionary. 2014. Complete and Unabridged, 12th Edition. HarperCollins Publishers Accessed 03.10.2016

Crampton M. 2005. GUIDED IMAGERY: A Psychosynthesis Approach History and Manual for Practitioners. Accessed 05.10.2016
<http://synthesiscenter.org/articles/Martha%20Crampton%20Guided%20Imagery.pdf>

D'silva F., Vinay H. & Muninarayanappa N.V. 2014. Effectiveness Of Deep Breathing Exercise (Dbe) On The Heart Rate Variability, Bp, Anxiety & Depression Of Patients With Coronary Artery Disease. *Nitte University Journal of Health Science*. 4(1). Accessed 01.10.2016
<http://www.nitte.edu.in/journal/March%202014/35-41.pdf>

D'Souza J. M., Umarani J., Shetty Asha P. 2015. Academic Stress Reduction by Jacobson's Progressive Muscle Relaxation: A Quasi experimental study. *International Research Journal of Medical Sciences*. Vol. 3(8), 7-13. Accessed 10.10.2016
http://www.isca.in/MEDI_SCI/Archive/v3/i8/2.ISCA-IRJMedS-2015-032.pdf

Etim J. J., Basseyy P. E., Ndep A. O. 2015. Work – Related Stress Among Healthcare Workers In Ugep, Yakurr Local Government Area, Cross River State, Nigeria: A Study Of Sources, Effects, And Coping Strategies. *International Journal of Public Health, Pharmacy and Pharmacology* Vol.1, No.1, 23-34 Accessed 03.10.2016
<http://www.eajournals.org/wp-content/uploads/Work----Related-Stress-among-Healthcare-Workers-in-Ugep-Yakurr-Local-Government-Area1.pdf>

European Agency for Safety and Health at Work. 2009. EUROPEAN RISK OBSERVATORY REPORT: OSH in figures: stress at work — facts and figures. Luxemburg. European Communities. Accessed 01.10.2016
https://osha.europa.eu/en/tools-and-publications/publications/reports/TE-81-08-478-EN-C_OSH_in_figures_stress_at_work

Farquharson B., Bell C., Johnston D., Jones M., Schofield P., Allan J., Ricketts I., Mor Rison K. & Johnston M. 2013. Nursing stress and patient care: real-time investigation of the effect of nursing tasks and demands on psychological stress, physiological stress, and job performance: study protocol. *Journal of Advanced Nursing*. Blackwell Publishing Accessed 03.10.2016
<http://nursingmidwifery.dundee.ac.uk/sites/nursingmidwifery.dundee.ac.uk/files/page-files/Nursing%20stress%20and%20patient%20care%20real-time%20investigation%20of%20the%20effect%20of%20nursing%20tasks%20and%20demands%20on%20psychological%20stress.pdf>

Febu E. J., Tessy T. J. & Asha K. N. 2014. Effectiveness Of Jacobson's Progressive Muscle Relaxation. Technique On Social Anxiety Among High School Adolescents In A Selected School Of Udupi District, Karnataka State. *Nitte University Journal of Health Science*. Vol. 4, No.1. Accessed 05.10.2016
<http://www.nitte.edu.in/journal/March%202014/86-90.pdf>

Fouka G., Mantzourou M. 2011. What are the Major Ethical Issues in Conducting Research? Is there a Conflict between the Research Ethics and the Nature of Nursing? Health Science Journal. Volume 5, Issue 1 Accessed 23.10.2016
<http://www.hsj.gr/medicine/what-are-the-major-ethical-issues-in-conducting-research-is-there-a-conflict-between-the-research-ethics-and-the-nature-of-nursing.pdf>

Gale Encyclopedia of Medicine. 2006. 3rd edition. Detroit: Thomson Gale. 5 vols. Accessed 03.10.2016

Geuens N., Braspenninga M., Bogaert P. V., Franck E. 2015. Individual vulnerability to burnout in nurses: The role of Type D personality within different nursing specialty areas. Burnout Research 2, 80–86. Accessed 01.10.2016
<http://www.sciencedirect.com/science/article/pii/S2213058614200064>

Halder S., Mahato A. 2013. Stress and psychological well being status among health care professionals. The International journal of occupational health & safety 3(1), 32 – 35 Accessed 01.10.2016
https://www.researchgate.net/publication/272355244_Stress_and_psychological_well_being_status_among_health_care_professionals

Harvard Medical School Special Health Report. 2008. Stress Management: Special Health Report. Harvard Health Publications Accessed 01.10.2016
https://www.taijiquan.nl/wp-content/uploads/2014/11/Stress_management-Approaches-for-preventing-and-reducing-stress.pdf

Heale R., Twycross A. 2015. Validity and reliability in quantitative studies. Evid Based Nurs. 18, 66-67 Accessed 23.10.2016
<http://ebn.bmj.com/content/18/3/66.full.pdf+html>

Hsu C.-T. 2012. The Relationship between Stress and Nursing Errors: The Moderating Role of Professional Ethics. Chiao Da Management Review 1. 32 No. 2, 1-36 Accessed 01.10.2016

International Council of Nurses. 2012. THE ICN CODE OF ETHICS FOR NURSES. Geneva. Accessed 01.10.2016
http://www.icn.ch/images/stories/documents/about/icncode_english.pdf

Jerath R., Barnes A. V. 2009. Augmentation of Mind-body Therapy and Role of Deep Slow Breathing. Journal of Complementary and Integrative Medicine 6(1). Accessed 07.10.2016
https://www.researchgate.net/publication/239324032_Augmentation_of_Mind-body_Therapy_and_Role_of_Deep_Slow_Breathing

Krohne H. W. 2002. Stress and Coping Theories. Johannes Gutenberg-Universität Mainz. Germany. Accessed 01.10.2016
http://userpage.fu-berlin.de/schueez/folien/Krohne_Stress.pdf

Kryukova, Ekimchik, Kovaleva. 2010. D. Fontana's «Professional Life Stress Scale» Adaptation among A Russian Sample Accessed 05.10.2016

Lehrer P. M., Woolfolk R. L., Sime W. E. 2007. Principles and Practice of Stress Management. 3-rd edition. New York. The Guilford Press. Accessed 01.10.2016

- Leka S., Griffiths A., Cox T. 2003. Work organization and Stress: systematic problem approaches for employers, managers and trade union representatives. Protecting worker's health series. 3. WHO. Accessed 10.10.2016
http://www.who.int/occupational_health/publications/en/oehstress.pdf
- Lemyre L., Tessier R. 2003. Hypothesis: The Research Page. Measuring psychological stress Concept, model, and measurement instrument in primary care research. Canadian Family Physician Accessed 01.10.2016
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2214290/pdf/14526870.pdf>
- Loo M.K, Amin S. M., Rahman N. S. a D. 2015. The sources and the impacts of occupational stress among manufacturing workers. International Journal of Current Research and Academic Review. Special issue- 2, 166-173. Accessed 07.10.2016
<http://www.ijcrar.com/special/2/M.K.Loo,%20et%20al.pdf>
- Maaroufi N., RzeiguiJ., AyariL., Abid Z., Dhaouadi M., Saidi H. 2015. Assessment of Effects of Stress among Healthcare Providers at the Tabarka and Jendouba General Hospital's Emergency Service Units in Northern Tunisia. Health, 7, 910-914. Accessed 01.10.2016
http://file.scirp.org/pdf/Health_2015080410354256.pdf
- McClernon F. J., Westman E. C., Rose J. E. 2004. The effects of controlled deep breathing on smoking withdrawal symptoms in dependent smokers. Addictive Behaviors 29 (2004) 765 – 772. Accessed 12.10.2016
http://healthygoods.com/media/Research/Deep_breathing_in_dependent_smokers.pdf
- McKenna C., Morrison A. 2012. Scottish Government Social Research Group Social Science Methods Series. Guide 3: Natural experiments. Accessed 23.10.2016
<http://www.gov.scot/resource/doc/175356/0091395.pdf>
- McLeod S. 2009. Defense Mechanisms. Accessed 03.10.2016
<http://www.simplypsychology.org/defense-mechanisms.html>
- Miller L. H., Smith A. D. 2016. Stress: The different kinds of stress. American Psychological Association. Accessed 01.10.2016
<http://www.apa.org/helpcenter/stress-kinds.aspx>
- Miller M. J., Tobacyk J. J. & Wilcox C. T. 1985. Psychologist Reports. 56, 221-222. Accessed 01.10.2016
<http://prx.sagepub.com/content/56/1/221.full.pdf>
- Mosby's Dictionary of Complementary and Alternative Medicine. 2005 Accessed 03.10.2016
- Mosby's Medical Dictionary. 2009. 9th edition. Accessed 03.10.2016
- Nisha S., Shinde KJ., Khatri SM., Deepali H., Vichare B. 2013. Immediate Effect of Jacobson's Progressive Muscular Relaxation in Hypertension. Scholars Journal of Applied Medical Sciences 1(2), 80-85. Accessed 01.10.2016
<http://saspublisher.com/wp-content/uploads/2013/04/SJAMS1280-85.pdf>
- Polit D. F., Beck C. T. 2008. Nursing research: Generating and Assessing Evidence for Nursing Practice. Eight edition. Accessed 23.10.2016

Prabu P. K., Subhash J. 2015. Guided Imagery Therapy. Journal of Nursing and Health Science. Volume 4, Issue 5 Ver. III,56-58. Accessed 11.10.2016
<http://iosrjournals.org/iosr-jnhs/papers/vol4-issue5/Version-3/J04535658.pdf>

Randall M. 2011. The Physiology of Stress: Cortisol and the Hypothalamic-Pituitary-Adrenal Axis. Dartmouth Undergraduate Journal of Science. Accessed 01.10.2016
<http://dujs.dartmouth.edu/2011/02/the-physiology-of-stress-cortisol-and-the-hypothalamic-pituitary-adrenal-axis/#.WCLv9Pp97IU>

Random Team Generator, Accessed 10.10.2016
<https://www.randomlists.com/team-generator?items=IA,OL,VV,SB,LV,M,VI,MV,IT,ND,NN,LA,PP,MA&qty=14&grp=2>

Segen's Medical Dictionary. 2012 Accessed 03.10.2016

Shier R. 2004. Statistics: 1.1 Paired t-tests. Mathematics learning. Support methods.
<http://www.statstutor.ac.uk/resources/uploaded/paired-t-test.pdf>

Stress Advocate. 2009. Stress at the workplace: meeting the challenges. Accessed 01.10.2016
<http://healthadvocate.com/downloads/webinars/stress-workplace.pdf>

Stress & Stress Management. 2010.Klinik Community Health Centre Accessed 01.10.2016
<http://hydesmith.com/de-stress/files/StressMgt.pdf>

Szabo S., Tache Y., Somogyi A., September 2012; 15(5): 472–478 Informa Healthcare USA. Accessed 01.10.2016
<http://selyeinstitute.org/wp-content/uploads/2013/06/TheLegacuyofHansSelyearticle.pdf>

The Belmont Report. Ethical Principles and Guidelines for the Protection of Human Subjects of Research. 1978. The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. Accessed 23.10.2016
https://videocast.nih.gov/pdf/ohrp_belmont_report.pdf

The Nature of Stress. 2013. Part 1. Accessed 01.10.2016
http://samples.jbpub.com/9781284036640/9781449688448_CH01_PASS02.pdf

Tierney S. 2008. Experimental (quantitative) studies: An overview and general issues
<http://www.researchdirector.org.uk/merg/documents/Experimental%20Studies.pdf>

Varvogli L., Darviri C. 2011. Stress Management Techniques: evidence-based procedures that reduce stress and promote health. HEALTH SCIENCE JOURNAL ® VOLUME 5, ISSUE 2
http://www.gpsc.bc.ca/sites/default/files/uploads/Pain_243.0_Stress_Management_Techniques_Health_Science_Journal.pdf

Vodopyanova N. E. 2009. Psycho-diagnosing of stress. 3-rd edition. Accessed 05.10.2016
http://thelib.ru/books/nataliya_evgenovna_vodopyanova/psihodiagnostika_stressa.html

Williams D. A., Carey M. 2003. YOU REALLY NEED TO RELAX: Effective Methods.
Accessed 07.10.2016

<http://www.med.umich.edu/painresearch/patients/Relaxation.pdf>

Wilkins K. 2007. Health Reports, Vol. 18, No. 4. Statistics Canada

<http://greyliit.pbworks.com/f/Work%2BStress%2BAmong%2BHealth%2BCare%2BProviders.pdf>

Figures and tables

Abbott C. Stress warning signs and symptoms. Stress Management 101

<https://www.marquemedical.com/stress-management-101-by-chad-abbott-m-d/>

Hassard J., Cox T. Work-related stress: Nature and management.

https://oshwiki.eu/wiki/Work-related_stress:_Nature_and_management

Stress & Stress Management. 2010. The Effects of Stress. Clinic Community Health Centre

<http://hydesmith.com/de-stress/files/StressMgt.pdf>

McLeod S. 2009. Defense Mechanisms.

<http://www.simplypsychology.org/defense-mechanisms.html>

Focus Family Resiliency Training Manual. [http://hprc-online.org/family-](http://hprc-online.org/family-relationships/families/managing-emotions/focus-calming-grounding-activities-pdf)

[relationships/families/managing-emotions/focus-calming-grounding-activities-pdf](http://hprc-online.org/family-relationships/families/managing-emotions/focus-calming-grounding-activities-pdf)

Appendices

Appendix 1

Guided imagery (Visualization)

(Adapted from Focus Family Resiliency Training Manual)

Sit or lie in a comfortable position.

Take several deep breaths. In, 1, 2, 3, out 1, 2, 3.

If you want, you can close your eyes. Relax. Breathe in through your nose and out through your nose. In 1, 2, 3, out 1, 2, 3. In 1, 2, 3, out 1, 2, 3. When you breathe in, bring the air all the way down into your abdomen. In 1, 2, 3, out 1, 2, 3.

Notice your breath. In 1, 2, 3, out 1, 2, 3.

Keep breathing in slowly and breathing out slowly.

Think about a place that makes you feel content, calm, and relaxed. This could be a beach, a meadow, a room in your house, a favorite vacation spot. This could be near the ocean, or a stream, or up in the mountains. Think about whatever place helps you to feel content, calm, and relaxed.

Continue to breathe in slowly and out slowly.

Think about the place that makes you feel content, calm, and relaxed.

Imagine that you are there now. Imagine how the place looks. Is it sunny? What colors do you see? As you imagine yourself in this special place, pay attention to the textures, colors, and what objects are around. Is there any water? Are there trees? Is there grass? Or sand? What color is the sky?

Now focus on the sounds? Can you hear any wind? Do you hear water? Think about how it sounds. Do you hear any birds? Do you hear any children or people talking? How does the ground sound as you walk on it?

Now think about how it smells? What are the different scents that are entering your nose? Breathe in deeply and focus on the different smells.

Next focus on how it feels to be there. How does your skin feel? How do your feet feel walking around your special place? Do you feel warm? Or cool? How do your eyes feel? Do you feel calm and relaxed?

Take a few more moments and savor how it feels to be here. Think about the sights, sounds, smells, and sensations.

(Stay quiet for one minute).

Sit or lie in a comfortable position.

Take several deep breaths. In, 1, 2, 3, out 1, 2, 3.

If you want you can close your eyes. Relax. Breathe in through your nose and out through your nose. In 1, 2, 3, out 1, 2, 3. In 1, 2, 3, out 1, 2, 3. When you breathe in, bring the air all the way down into your abdomen. In 1, 2, 3, out 1, 2, 3.

Notice your breath. In 1, 2, 3, out 1, 2, 3.

Keep breathing in slowly and breathing out slowly.

Now imagine that you are at the beach. Imagine yourself standing on the sand.

- The sun is bright.
- The sky is blue.
- There are few white clouds but for the most part it is a beautiful clear day.

You see the ocean ahead and hear the waves crashing.

Smell the salt in the air.

You can feel the light humidity in the air.

- Feel the sun shining on your skin.
- Feel the warmth of the sun wrapping around your whole body.
- Feel the gentle breeze against your face, your cheeks, your skin.
- Feel the warm sand around your feet. It feels like a warm blanket covering your toes.

Listen to the waves breaking against the sand.

- You see the waves gently rolling onto shore.

Hear the seagulls passing over head.

- Watch as they fly by in their formation.

You hear some children playing in the distance. Laughing. And splashing in the water.

Then you turn your attention to the sound of the ocean. You notice the rhythm of the ocean sounds. The waves coming in and gently rolling back out.

You feel yourself getting calm and relaxed.

You take several deep breathes in to savor the sights, sounds, and sensations all around you.

The warmth that is swimming around your whole body. The sun's rays on your head. On your shoulders. The warm sand on your toes and feet. The cool breeze that matches the ocean's rhythm.

With each deep breath you are taking in the warmth of the beach and the sun and the cool of the ocean and the wind.

Each breath makes you feel more and more calm and relaxed. Notice how your body feels. The tension moves out of your shoulders. Your jaw relaxes. Any tension in the muscles seems to fade away as you savor this beautiful day on the beach.

(Stay quiet for one minute).

Now bring your awareness back to your breathing.

- Focus on your breathing.
- Bring your awareness back into the room.
- When you are ready, open your eyes.

Appendix 2

Jacobson's Progressive Muscle Relaxation

(Adapted from Focus Family Resiliency Training Manual)

Sit or lie in a comfortable position.

Take several deep breaths. In, 1, 2, 3, out 1, 2, 3.

If you want, you can close your eyes. Relax. Breathe in through your nose and out through your nose. In 1, 2, 3, out 1, 2, 3. In 1, 2, 3, out 1, 2, 3. When you breathe in, bring the air all the way down into your abdomen. In 1, 2, 3, out 1, 2, 3.

Notice your breathing. In 1, 2, 3, out 1, 2, 3.

Keep breathing in slowly and breathing out slowly.

Think about your feet and toes. Squeeze your toes and feet really tight. Count to 5. 1, 2, 3, 4, 5. Relax your feet. Do this two more times.

1
2

Feel your feet relaxing.

Think about your legs. Straighten your legs, flexing your knees and all the muscles in your legs. Your calves, your thighs. Squeeze. Count to 5. 1, 2, 3, 4, 5. Relax your legs. Do this two more times.

1
2

Feel the muscles in your knees and legs relaxing.

Think about your stomach. Tense up the muscles in your stomach like you are doing an abdominal crunch. Squeeze. Count to 5. 1, 2, 3, 4, 5. Relax your stomach. Do this two more times.

1
2

Feel your stomach muscles relaxing.

Think about your hands. Make tight fists. Squeeze. Count to 5. 1, 2, 3, 4, 5. Relax your hands. Do this two more times.

Feel your hands and arms relaxing

Think about your shoulders. Shrug your shoulders up to your head. Squeeze. Count to 5. 1, 2, 3, 4, 5. Relax your shoulders. Do this two more times.

1
2

Feel your shoulders relaxing.

Think about your eyes. Tighten your eyes. Close them really tight. Count to 5. 1, 2, 3, 4, 5. Relax your eyes without opening them. Do this two more times.

1
2

Feel your face feeling relaxed and calm.

Take 3 more deep breaths. Feel any left over tension leaving your body. Feel your body relax. Feel the calmness take over your body.

Appendix 3

Deep breathing techniques

(Adapted from Focus Family Resiliency Training Manual)

Sit or lie in a comfortable position.

Take several deep breaths. In, 1, 2, 3, out 1, 2, 3.

If you want, you can close your eyes. Relax. Breathe in through your nose and out through your nose. In 1, 2, 3, out 1, 2, 3. In 1, 2, 3, out 1, 2, 3. When you breathe in, bring the air all the way down into your abdomen. In 1, 2, 3, out 1, 2, 3.

Notice your breathing. In 1, 2, 3, out 1, 2, 3.

Keep breathing in slowly and breathing out slowly.

As you breathe in, picture the air coming into your mouth, down into your lungs. The air is swirling around and dancing through your lungs.

Now continue to breathe in. And out. Imagine the oxygen crossing out of your lungs and into the rest of your body. Picture the oxygen all over your body.

Breathe in slowly and exhale slowly.

As oxygen is delivered to all of your muscles and organs, any toxins or waste products are picked up and pushed back out of the body. Imagine these toxins coming back into your lungs. Up and out of your mouth with every exhalation.

Continue to breathe deeply. In 1, 2, 3. With nutrients and oxygen for your lungs and muscles.

And exhale. Blowing out all of the toxins and waste from your body.

This time when you inhale, picture the air traveling up into your head. It will deliver all of the healthy and refreshing oxygen to your brain. And on its way back out, it will take with it any negative thoughts or stress. All of that stress disappears as you exhale. 1, 2, 3.

Continue breathing, delivering nutrients and getting rid of negativity for five more breaths.

- 1
- 2
- 3
- 4
- 5

Appendix 4

PROFESSIONAL LIFE STRESS SCALE

By David Fontana

Adapted from Managing Stress, The British Psychological Society and Routledge Ltd., 1989

The following stress scale must be treated as a useful guide rather than as a precise instrument. Complete it quickly, and don't think too hard before responding to each question. Your first response is often the most accurate one. As with any stress scale, it isn't difficult to spot what is the 'low stress' answer to each question. Don't be tempted to give this answer if it isn't the accurate one. Nothing is at stake. You are as stressed as you are. Your score on the scale doesn't change that, one way or the other. The purpose of the scale is simply to help you clarify some of your thinking about your own life.


The Professional Life Stress Test

1. Two people who know you well are discussing you. Which of the following statements would they be most likely to use?

- a. 'X is very together. Nothing much seems to bother him/her.'
- b. 'X is great. But you have to be careful what you say to him/her at times.'
- c. 'Something always seems to be going wrong with X's life.'
- d. 'I find X very moody and unpredictable.'
- e. 'The less I see of X the better!'

2. Are any of the following common features of your life?

- a. Feeling you can seldom do anything right
- b. Feelings of being hounded, trapped, or cornered
- c. Indigestion
- d. Poor appetite
- e. Difficulty in getting to sleep at night
- f. Dizzy spells or palpitations
- g. Sweating without exertion or high air temperature
- h. Panic feelings when in crowds or in confined spaces
- i. Tiredness and lack of energy
- j. Feelings of hopelessness ('what's the use of anything?')
- k. Faintness or nausea sensations without any physical cause
- l. Extreme irritation over small things
- m. Inability to unwind in the evenings
- n. Waking regularly at night or early in the mornings
- o. Difficulty in making decisions
- p. Inability to stop thinking about problems or the day's events
- q. Tearfulness
- r. Convictions that you just can't cope

- s. Lack of enthusiasm even for cherished interests
 - t. Reluctance to meet new people and attempt new experiences
 - u. Inability to say 'no' when asked to do something
 - v. Having more responsibility than you can handle
3. Are you more or less optimistic than you used to be (or about the same)?
- a. more
 - b. about the same
 - c. less
4. Do you enjoy watching sports?
- a. yes
 - b. no
5. Can you get up late on weekends if you want to without feeling guilty?
- a. yes
 - b. no
6. Within reasonable professional and personal limits, can you speak your mind to your boss?
- a. yes
 - b. no
7. Can you speak your mind to your colleagues?
- a. yes
 - b. no
8. Can you speak your mind to members of your family?
- a. yes
 - b. no
9. Who usually seems to be responsible for making the important decisions in your life?
- a. yourself
 - b. someone else
10. When criticized by superiors at work, are you usually:
- a. very upset?
 - b. moderately upset?
 - c. mildly upset?
11. Do you finish the working day feeling satisfied with what you have achieved?
- a. often
 - b. sometimes
 - c. only occasionally
12. Do you feel most of the time that you have unsettled conflicts with colleagues?
- a. yes
- 

b. no

13. Does the amount of work you have to do exceed the amount of time available?

a. habitually

b. sometimes

c. only very occasionally

14. Do you have a clear picture of what is expected of you professionally?

a. mostly

b. sometimes

c. hardly ever

15. Would you say that generally you have enough time to spend on yourself?

a. yes

b. no

16. If you want to discuss your problems with someone, can you usually find a sympathetic ear?

a. yes

b. no

17. Are you reasonably on course towards achieving your major objectives in life?

a. yes

b. no

18. Are you bored at work?

a. often

b. sometimes

c. very rarely

19. Do you look forward to going into work?

a. most days

b. some days

c. hardly ever

20. Do you feel adequately valued for your abilities and commitment at work?

a. yes

b. no

21. Do you feel adequately rewarded in terms of status and promotion for your abilities and commitment at work?

a. yes

b. no

22. Do you feel your superiors actively hinder you in your work? Or do they actively help you in your work?

a. hinder

b. help

23. If ten years ago you had been able to see yourself professionally as you are now, how would you have seen yourself?

- a. exceeding your expectations
- b. fulfilling your expectations
- c. falling short of your expectations

24. If you had to rate how much you like yourself on a scale from 1 (least like) to 5 (most like), what would your rating be?

- a. 1
- b. 2
- c. 3
- d. 4
- e. 5

Key for the Professional Life Stress Test

For each question, score according to the directions that follow:

1. (a) 0, (b) 1, (c) 2, (d) 3, (e) 4
2. Score 1 for each 'yes' response
3. Score 0 for a. more optimistic, 1 for b. about the same, 2 for c. less optimistic
4. Score 0 for a. 'yes', 1 for b. 'no'
5. Score 0 for a. 'yes', 1 for b. 'no'
6. Score 0 for a. 'yes', 1 for b. 'no'
7. Score 0 for a. 'yes', 1 for b. 'no'
8. Score 0 for a. 'yes', 1 for b. 'no'
9. Score 0 for a. 'yourself', 1 for b. 'someone else'
10. Score 2 for a. 'very upset', 1 for b. 'moderately upset', 0 for c. 'mildly upset'
11. Score 0 for a. 'often', 1 for b. 'sometimes', 2 for c. 'only occasionally'
12. Score 0 for a. 'no', 1 for b. 'yes'
13. Score 2 for a. 'habitually', 1 for b. 'sometimes', 0 for c. 'only very occasionally'
14. Score 0 for a. 'mostly', 1 for b. 'sometimes', 2 for c. 'hardly ever'
15. Score 0 for a. 'yes', 1 for b. 'no'
16. Score 0 for a. 'yes', 1 for b. 'no'
17. Score 0 for a. 'yes', 1 for b. 'no'
18. Score 2 for a. 'often', 1 for b. 'sometimes', 0 for c. 'very rarely'
19. Score 0 for a. 'most days', 1 for b. 'some days', 2 for c. 'hardly ever'
20. Score 0 for a. 'yes', 1 for b. 'no'
21. Score 0 for a. 'yes', 1 for b. 'no'
22. Score 1 for a. 'hinder', 0 for b. 'help'
23. Score 0 for a. 'exceeding your expectations', 1 for b. 'fulfilling your expectations', 2 for c. 'falling short of your expectations'

24. Score 4 for a. '1', 3 for b. '2', 2 for c. '3', 1 for d. '4', and 0 for e. '5'

Interpreting Your Score

Keep in mind that scores on stress scales must be interpreted cautiously. There are so many variables which lie outside the scope of these scales but which influence the way in which we perceive and handle our stress, that two people with the same scores may experience themselves as under quite different levels of stress. Nevertheless, taken as no more than a guide, these scales can give us some useful information.

Score = 15. Stress isn't a problem in your life. This doesn't mean that you have insufficient stress to keep yourself occupied and fulfilled. The scale is only designed to assess undesirable responses to stress.

Score = 16-30. This is a moderate range of stress for a busy professional person. It's nevertheless well worth looking at how it can reasonably be reduced.

Score = 31-45. Stress is clearly a problem, and the need for remedial action is apparent. The longer you work under this level of stress, the harder it often is to do something about it. There is a strong case for looking carefully at your professional life.

Score = 45-60. At these levels, stress is a major problem, and something must be done without delay. You may be nearing the stage of exhaustion in the general adaptability syndrome. The pressure must be eased.



Appendix 5

Методика «Шкала психологического стресса PSM-25»

Инструкция: Дайте оценку вашему общему состоянию. После каждого высказывания обведите число от 1 до 8, которое наиболее четко выражает ваше состояние в последние дни (4-5 дней). Здесь нет неправильных или ошибочных ответов.

Баллы означают:

- 1 – никогда (never)
- 2 – крайне редко (extremely rare)
- 3 – очень редко (very rare)
- 4 – редко (rare)
- 5 – иногда (sometimes)
- 6 – часто (often)
- 7 – очень часто (very often)
- 8 – постоянно (all the time)

Шкала психологического стресса PSM -25

№	Утверждения (высказывания)	Оценка
1.	Я напряжен и взволнован (взвинчен)	1 2 3 4 5 6 7 8
2.	У меня ком в горле, и (или) я ощущаю сухость во рту	1 2 3 4 5 6 7 8
3.	Я перегружен работой. Мне совсем не хватает времени.	1 2 3 4 5 6 7 8
4.	Я проглатываю пищу или забываю поесть.	1 2 3 4 5 6 7 8
5.	Я обдумываю свои идеи снова и снова; я меняю свои планы; мои мысли постоянно повторяются.	1 2 3 4 5 6 7 8
6.	Я чувствую себя одиноким, изолированным и непонятым.	1 2 3 4 5 6 7 8
7.	Я страдаю от физического недомогания; у меня болит голова, напряжены мышцы шеи, боли в спине, спазмы в желудке.	1 2 3 4 5 6 7 8
8.	Я поглощён мыслями, измучен или обеспокоен.	1 2 3 4 5 6 7 8
9.	Меня внезапно бросает то в жар, то в холод.	1 2 3 4 5 6 7 8
10.	Я забываю о встречах или делах, которые должен сделать или решить.	1 2 3 4 5 6 7 8
11.	Я легко могу заплакать, часто портится настроение	1 2 3 4 5 6 7 8
12.	Я чувствую себя уставшим.	1 2 3 4 5 6 7 8
13.	Я крепко стискиваю зубы.	1 2 3 4 5 6 7 8
14.	Я спокоен.	1 2 3 4 5 6 7 8
15.	Мне тяжело дышать, и (или) у меня внезапно перехватывает дыхание	1 2 3 4 5 6 7 8
16.	Я имею проблемы с пищеварением и с кишечником (боли, колики, расстройства или запоры).	1 2 3 4 5 6 7 8
17.	Я взволнован, обеспокоен или смущен.	1 2 3 4 5 6 7 8
18.	Я легко пугаюсь; шум или шорох заставляет меня вздрагивать.	1 2 3 4 5 6 7 8

19.	Мне необходимо более чем полчаса для того, чтобы заснуть.	1 2 3 4 5 6 7 8
20.	Я сбив с толку; мои мысли спутаны; мне не хватает сосредоточенности, и я не могу сконцентрировать внимание.	1 2 3 4 5 6 7 8
21.	У меня усталый вид; мешки или круги под глазами.	1 2 3 4 5 6 7 8
22.	Я чувствую тяжесть на своих плечах.	1 2 3 4 5 6 7 8
23.	Я встревожен. Мне необходимо постоянно двигаться; я не могу устоять на одном месте.	1 2 3 4 5 6 7 8
24.	Мне трудно контролировать свои поступки, эмоции, настроение или жесты.	1 2 3 4 5 6 7 8
25.	Я чувствую напряженность.	1 2 3 4 5 6 7 8

Подсчитайте сумму баллов по всем вопросам. Чем она больше, тем выше уровень вашего стресса. Шкала оценок:

- **Меньше 100 баллов** – низкий уровень стресса (low level of stress)
- **100 - 154 баллов** – средний уровень стресса (moderate level of stress)
- **Больше 155 баллов** – высокий уровень стресса (High level of stress)