Predictive roles of coping and resilience for the perceived stress in nurses

Mróz J.

Institute of Pedagogy and Psychology, Department of Psychology, The Jan Kochanowski University in Kielce, Kielce, Poland

ABSTRACT

Introduction: Nursing profession is physically and emotionally demanding
Purpose: To determine the relationship between coping strategies and resilience, as well as perceived stress among nurses.
Materials and methods: The study included 173 nurses from Świętokrzyskie province. Examination material was collected using the following tools: the Perceived Stress Questionnaire (KPS), The Resiliency Assessment Scale (SPP - 25), the Brief COPE
Results: Among nurses emotion-focused strategies, such as: denial, self-blame and seeking emotions, positively correlated with the perceived stress. Resilience, and particularly personal skills to cope with and tolerate negative emotions, negatively correlated with the perceived stress.
Conclusions: Resilience, to a lesser extent than coping strategies contributed to determination of the level of perceived stress.
Key words: resilience, coping with, perceived stress, nurses

***Corresponding author**
Justyna Mróz
Institute of Pedagogy and Psychology
Department of Psychology, The Jan Kochanowski University in Kielce
ul. Krakowska 11, 25- 049 Kielce, Poland
e-mail: justyna_mroz@wp.pl

Received: 07.09. 2015
Accepted: 16.11. 2015
Progress in Health Sciences
Vol. 5(2) 2015 pp 77-83

INTRODUCTION

The paper attempts to determine predictive role of resilience and coping strategies for the levels of perceived stress in nurses. Nursing profession is physically and emotionally demanding [1]. According to Bennett et al. [2], the group of environmental stressors in the nursing profession includes: unpredictable staffing and scheduling, lack of role clarity, low involvement in decision-making, poor status, and poor support. In addition, the scope of competence and autonomy of nurses has extended [3], which is likely to increase the level of stress and lead to job burnout. Emotional burden also involves contacts with suffering patients due to responsibility held for their lives and health [4]. Previous studies indicate that a higher perception of stress among nurses is associated with worse well-being, intensification of depression and anxiety symptoms [5]. However, not only environmental/objective stressors but also skills and abilities that favor effective coping strategies are responsible for the perception of stress. It is important to determine which personal resources are conducive to the perceived stress [6,7], and which may be used in developing support and preventive programmes at various levels of the nursing training and in combating job burnout.

One of the most popular models presenting how environmental stressors translate into the experience of stress has been developed by Lazarus and Folkman [8]. In that model stress is defined as a relationship with the environment that exceeds an individual's ability to cope. Assessment of a situation as a stressful one results in a coping process. Coping is defined "as efforts to prevent or diminish threat, harm, and loss or to reduce associated distress" [9]. Coping may be problem-focused or emotion-focused. Problem-focused coping includes action-oriented strategies, such as e.g. planning or performing specific activities. Emotion-focused strategies, on the other hand, include seeking social support, denial, drug use. These two coping styles complement each other rather than constitute independent categories [9].

Carver and Connor-Smith [9] have made a distinction between engagement coping and disengagement coping. Engagement coping includes problem-focused and some forms of emotion-focused coping: support seeking, positive reframing, and acceptance. On the other hand, disengagement coping includes strategies such as denial, avoidance, wishful thinking. Disengagement coping is generally ineffective in reducing distress over the long term [9]. Ineffective coping may increase the level of perceived stress. Studies among nurses indicate a relationship between selected coping strategies and health [10,11], substance use [12].

Stress assessment and initiation of a coping process depends, among others, on personality predispositions of an individual, such as e.g. self-efficacy [13], optimism [13], and resilience [14]. In this paper, particular attention was paid to resilience as a significant personality factor involved in the process of coping. Ogińska-Bulik and Juczyński [15] define resilience as a mental characteristic conducive to endurance, flexible adjustment and mobilization to act in problematic situations. Also, resilience helps tolerate negative emotions and experienced failures. In addition, Ogińska-Bulik and Juczyński [15] point out that resilience is a self-regulatory mechanism. This mechanism includes emotional, cognitive and behavioral components. Emotional components are related to the positive affect and emotional stability, whereas cognitive components are related to beliefs, expectations as well as an individual's competencies and approaching various tasks as challenges. Behavioural components of the resilience mechanism are manifested by an individual looking for new experiences and trying to apply various, effective methods of coping with difficult situations. Individuals with a high level of resilience have a positive approach to life, they are emotionally stable, feel the control over decisions they make, and they treat obstacles as a challenge and a chance for development.

Resilience as a personal resource is used in job-related situations [6,16]. Taking into consideration stressful nature of the nursing profession, resilience may be an important resource protecting nurses against negative effects of occupational stress. So far there have been studies on resilience, inter alia, among: nurses on managerial posts [14], pediatric oncology nurses [17], nurses involved in palliative care [18] and operating room nurses [19]. Resilience among nurses supports more efficient coping with occupational burden and protects them against PTSD [20-22]. It also enables to maintain work-life balance among managerial nurses [14]. What is more, a high level of resilience prevents job burnout, which has been confirmed, e.g. by studies among female social workers [12] and nursing students [13]. Nevertheless, there are no studies that would refer to the significance of resilience among the general group of nurses.

Moreover, resilience impacts individually perceived stress and taking stress-combating actions; and this also refers to the job requirements and stress experienced in job-related situations [23]. Psychological capital (PsyCap) construct describes the role of resilience in job-related situations. The Psychological capital is construed as a set of positive psychological resources significant for

effective human functioning at work. This model, apart from resilience, also accounts for efficacy, optimism and hope [13].

The aim of the study was to determine the predictive role of coping strategies and resilience for the perceived stress among actively employed nurses. Resilience and engagement coping were expected to be conducive to a lower level of perceived stress, and disengagement coping to a higher level of perceived stress.

Research hypotheses

As concerns the presented considerations, the following research hypotheses have been put forward:

- Hypothesis 1: Engagement coping shows a negative correlation with the perceived stress.
- Hypothesis 2: Disengagement coping shows a positive correlation with the perceived stress.
- Hypothesis 3: Resilience shows a negative correlation with the perceived stress (emotional tension, intrapsychic stress, and external stress).

MATERIALS AND METHODS

The sample consisted of 200 nurses from Świętokrzyskie province. In the final analyses, results of 173 completed surveys were included. The respondents were employed by various institutions: hospitals, outpatient clinics, welfare houses across Świętokrzyskie province. The mean age of the respondents was 43.5, whereas their average work experience was 20.7 years. The nurses were participants of a training course. Their participation was voluntary and anonymous.

The following instruments were used:

Perceived stress. The general level of perceived stress was measured using the Perceived Stress Questionnaire (KPS) developed by Plopa and Makarowski [24]. The questionnaire is composed of 27 items divided into 3 diagnostic subscales (Emotional Tension, Intrapsychic Stress and External Stress). Respondents relate to individual items using a five-point scale. Overall score ranges from 21 to 105. Each diagnostic subscale features 7 items, the score ranges from 7 to 35. Cronbach's alpha ranges from 0.69 to 0.81. The higher the score, the higher the level of stress displayed by a respondent.

Resilience. The resilience level was assessed by the use of The Resiliency Assessment Scale (SPP - 25) developed by Ogińska–Bulik and Juczyński [15]. The SPP-25 is composed of subscales determining 5 factors and the overall score. Factor 1 - Persistence and determination in action; Factor 2 - Openness to experience and sense of humor; Factor 3 – Individual's ability to cope and tolerance of negative emotions; Factor 4 - Tolerance of failure and viewing life as a challenge; Factor 5 - An optimistic approach to life and the ability to mobilize oneself in difficult situations. Participants respond to individual items using a five-point scale. Cronbach's alpha measuring reliability is 0.89. Test retest reliability (r=0.85) is also satisfactory.

Coping. Coping strategies were measured using the Brief COPE [25,26]. The Brief COPE is a short version of COPE - The Coping Orientations to Problems Experienced [27]. The scale is composed of 28 items determining 14 coping strategies: Active Coping, Planning, Positive Reframing, Acceptance, Humor, Religion, Emotional Support Seeking, Instrumental Support Seeking, Self-Distraction, Denial, Behavioral Disengagement, Venting, Drug Use, Self–Blame. Respondents reply to each statement using a four-point scale, where 0 – "I hardly ever do it" and 3 – "I do it almost always". The higher the score, the more often a respondent uses a given strategy. The instrument shows satisfactory psychometric parameters. Cronbach's alpha is between 0.50 – 0.90.

A statistical analysis was conducted by means of the STATISTICA software by StatSoft. The Pearson test for correlations was used between resilience, coping strategies vs. the perceived stress. The stepwise regression model was created in order to estimate determinants of the perceived stress. The value of $p \leq 0.05$ was established as statistically significant.

RESULTS

Correlation coefficients between the analyzed variables are presented in Table 1. The obtained results revealed a relationship between some strategies vs. resilience and the perceived stress.

Emotional tension showed a negative correlation with positive reframing, and a positive correlation with strategies such as religion, denial, behavioral disengagement and self–blame. The level of intrapsychic stress, external stress and the general stress showed a negative correlation with such adaptive strategies as: active coping, planning and using emotional support, and a positive correlation with maladaptive strategies such as: denial, venting, substances use, behavioral disengagement and self-blame.

Negative correlations were recorded for the perceived stress and all resilience factors.

In order to identify contribution of the considered strategies and resilience in determining variability of the perceived stress in the responding nurses, a stepwise regression analysis was used (Table 2).

Table 1. Coping and resiliency vs. perceived stress in subjects – Pearson's r correlation coefficients

		Emotional tension	Intrapsychic stress	External stress	Perceived stress
Strategies of Coping	Active Coping	-0.12	-0.21*	-0.26*	-0.22*
	Planning	-0.13	-0.18*	-0.18*	-0.19*
	Positive Reframing	-0.15*	-0.08	-0.12	-0.13
	Acceptance	-0.04	0.01	-0.12	-0.06
	Humour	-0.08	-0.03	0.00	-0.04
	Religion	0.18*	0.06	0.14	0.14
	Using Emotional Support	-0.09	-0.15*	-0.22*	-0.18*
	Using Instrumental Support	0.04	0.02	-0.04	0.01
	Self-Distarction	0.06	0.04	0.05	0.06
	Denial	0.25*	0.28*	0.33*	0.33*
	Venting	0.15	0.19*	0.22*	0.21*
	Substances Use	0.08	0.24*	0.17*	0.18*
	Behavioural disengagement	0.33*	0.28*	0.36*	0.37*
	Self - Blame	0.35*	0.36*	0.31*	0.39*
Resiliecny	Persistence and determination in action	-0.37*	-0.32*	-0.37*	-0.41*
	Openness towards new experiences and a sense of humour	-0.37*	-0.31*	-0.38*	-0.40*
	Personal skills to cope and tolerance to negative emotions	-0.44*	-0.34*	-0.47*	-0.48*
	Tolerance to failure and view life as a challenge	-0.39*	-0.36*	-0.46*	-0.46*
	An optimistic attitude towards life and the ability to self-mobilization in difficult situations	-0.42*	-0.32*	-0.42*	-0.44*
	SPP – Resiliency	-0.45*	-0.37*	-0.48*	-0,50*

*p<0.05

The obtained results indicate that a combination of coping strategies and resilience factor accounts for 45% of the variance of the generally perceived stress. Higher frequency of using the escape and avoidance coping strategies (denial, self-blame) and a less frequent use of active strategies (using emotional support) with a simultaneous low level of personal coping competencies and tolerance of negative emotions, are conducive to a higher level of perceived stress. Predictors of specific aspects of the perceived stress identified in the study point to a higher contribution of coping strategies than resilience factors to determination of their variability.

Table 2. Coping strategies and resiliency vs. perceived stress – results of a stepwise regression analysis

Coping strategies and resiliency	**Perceived stress**		
	β	**t**	**P value**
	Emotional Tension R=0.60 R^2=0.40 F(8,164)=11.44 p<0.001		
Personal skills to cope and tolerance to negative emotions	-0.52	0.12	<0.001
Self – Blame	2.46	0.59	<0.001
Denial	1.52	0.58	0.009
Positive Reframing	-1.78	0.71	0.013
	Intrapsychic stress R=0.60 R^2=0.36 F(11,161)=8.25 p<0.001		
Self - Blame	2.25	4.17	<0.001
Denial	1.81	3.52	0.001
Using Emotional Support	-1.52	-2.13	0.035
Humour	-1.29	-2.34	0.021
Acceptance	1.86	2.86	0.005
	External stress R= 0.64 R^2= 0.41 F(9,163)=12.51 p<0.001		
Personal skills to cope and tolerance to negative emotions	-0,61	-4,04	<0.001
Self- Blame	1,95	3,59	<0.001
Denial	1,73	3,18	0.002
Using Emotional Support	-1,78	-3,06	0.003
	Perceived stress R= 0.67 R^2= 0.45 F(10,162)=13,22 p<0.001		
Personal skills to cope and tolerance to negative emotions	-1.30	-4.46	<0.001
Self-Blame	6.62	4.75	<0.001
Denial	5.09	3.64	<0.001
Using Emotional Support	-3.37	-2.24	0.027

Coping strategies and resilience factor account for 40% of the variance of emotional tension. The use of self-blame, denial and, less frequently, positive reframing is conducive to emotional tension. In addition, the variance of emotional tension is determined by a low level of an individual's ability to cope and tolerate negative emotions.

Distribution of coping strategies and resilience factors determined for intrapsychic stress, allows prediction of 36% of its variance. A higher level of intrapsychic stress involves a more frequent use of such strategies as: self-blame, denial, acceptance and a less frequent use of emotional support, humor. The intrapsychic stress level among the nurses participating in the study may also be predicted in the case of low tolerance of failure and viewing life as a challenge and an individual's ability to cope and tolerate negative emotions.

In the case of external stress, the established set of strategies and resilience factors accounts for 41% of the variance. A high level of external stress may, to some extent, be predicted based on a frequent use of escape and avoidance coping strategies (self-blame, denial), and simultaneously a non-frequent use of emotional support seeking. In addition, the level of external stress may be accounted for through poor individual's ability to cope and tolerate negative emotions.

DISCUSSION

The aim of the study was to determine the correlation between resilience, coping strategies and perceived stress among the participating nurses. In addition, the predictive role of coping strategies and resilience vs. the perceived stress was indicated.

Hypotheses 1 and 2 which predicted that disengagement coping would be positively associated with the perceived stress, and that engagement coping would be negatively correlated with the perceived stress were partly supported. It turned out that a higher level of the perceived stress in nurses was associated with intensification of such strategies as denial and self–blame, as well as venting, substances use, behavioral disengagement. Weaker intensification of engagement coping strategies, such as: active coping, planning, using emotional support and humor, positive reframing was conducive to an intensified perception of stress in this occupational group. Our results are in agreement with the so far obtained results both among nurses in Poland [28] as well as in other countries [10-12].

The results revealed a significant role of maladaptive coping strategies, such as denial and self-blame, in the respondents' stress experience. While experiencing a high level of stress, nurses deny the existence of difficult situations and additionally blame themselves for their emergence. There are numerous difficult situations in the nursing profession such as, e.g.: deterioration of a patient's health, wrong diagnosis, death of a patient. Both strategies, i.e. denial and self-blame, are categorized as escape and avoidance coping strategies, and in the study by Carver [9], they are included in one and the same factor, therefore, these two strategies may be expected to support each other. Denial is a unique strategy used at the beginning of a stressful transaction and it may prove beneficial due to temporary distance to the situation. Nevertheless, it disturbs and prevents effective coping. Self-blame, on the other hand, is a strategy manifesting helplessness, and it is defined as criticizing oneself for stressful circumstances. The study findings are confirmed by numerous studies showing that using self-blame [29,30] and denial [31] as a coping strategy is not conducive to adjustment to a difficult situation. Mark and Smith [10] indicate that strategies, such as: self-blame and avoidance are conducive to anxiety and depression among nurses. Similar results have been presented by Shreuder et al. [11] confirming that using passive coping by nurses is associated with poor general and poor mental health.

The presented results show that seeking emotional support is conducive to a lower level of stress. However, mere looking for support does not necessarily mean it will be received. Emotional support seeking is categorized as emotion-focused and engagement coping. Failure to seek such support makes it resemble disengagement coping [9]. In addition, Carver, Scheier and Weintraub [27] pay attention to the fact that this strategy is a double-edged sword. On the one hand, looking for consolation, understanding, sympathy may in some ways be helpful in gaining strength and getting back to action, but, on the other hand, it may bring about excessive focus on emotions and lead to abandonment of the activity. In the study by Łuczak [32], emotional support seeking has displayed a positive correlation with job-related stressors, such as organizational uncertainty, stressful interpersonal relations or lack of support, and a negative correlation only with adverse working conditions.

All the strategies which in the study proved the most significant for the perceived stress could be categorized as emotion-focused [8,27]. Emotion-focused strategies are less beneficial than problem-focused strategies. The relationship between emotion-focused coping strategies and the perceived stress may result from the fact that the sample was composed only of women. A higher tendency among females of different populations to use maladaptive or emotion-focused stress-coping

strategies and to experience more stress have been previously reported.

The study results also confirmed that the hypothesis (3) about a negative correlation between the perceived stress and resilience was right. The results indicated that a low level of the perceived stress is related to a high level of resilience. This shows that the ability to adapt to and solve problems in a flexible manner is conducive to perceiving various problems as stressful. The presented in the paper results have been confirmed by other research. Kim and Windsor [14] have proven that resilience interpreted as positive thinking, flexibility, assuming responsibility, and separating work and life is conducive to the ability to maintain the work-life balance among nurses on managerial posts. Resilience also protects nurses against development of the symptoms of PTSD [20], and the level of perceived stress and job burnout [7]. The obtained results are consistent with empirical findings of other research, where a high level of resilience was conducive to a lower level of stress in other groups [24-26].

The obtained results allowed verification of research hypotheses and drawing the following conclusions. The level of perceived stress in nurses significantly correlated with coping strategies they use and resilience. However, it was found that the level of perceived stress may be primarily predicted based on denial, self-blame, failure in seeking closeness and consolation in others, with a simultaneous low level of individual's ability to cope and tolerate negative emotions. What is more, based on the conducted research, it may be observed that disengagement coping, especially escape and avoidance coping strategies, such as: denial and self-blame play a more significant role for the perceived stress than engagement coping and problem-focused strategies, although the latter are also important for the perceived stress but to a smaller extent.

Limitations

One limitation of the presented research is lack of diversification among the studied nurses due to the place of work, age and length of working experience. The available research indicates legitimacy of such divisions [10,11,12]. Therefore, the obtained results should be treated as an introductory stage for further research, in which attention could be paid to the characteristics of the workplace and in which not only general, but also occupational stress could be included. Another limitation is certainly homogeneity of the group in terms of gender. The available results indicate differences between men and women in terms of the used stress coping strategies [36], and that is why it would be interesting to include also men working as nurses in the study.

CONCLUSIONS

1. The level of perceived stress in nurses may be accounted for by using disengagement, emotion-focused coping strategies as well as a poor level of personal competencies and low tolerance of negative emotions.
2. Coping strategies used, such as self-blame, denial and absence of emotional support seeking are the most significant for the perceived stress. However, for particular types of the perceived stress (emotional tension, external and intrapsychic stress), the range is additionally extended by other strategies.
3. The obtained results may be used and included in psychoeducational programmes for nurses focused on building resilience and raising awareness of the negative effects of the use of maladaptive coping strategies.

Conflicts of interest

The author have declared no conflicts of interest.

REFERENCES

1. Kravits K, McAllister-Black R, Grant M, Kirk C. Self-care strategies for nurses: A psycho-educational intervention for stress reduction and the prevention of burnout. Appl Nurs Res. 2010;23(3):130–8.
2. Bennett P, Lowe R, Matthews V, Dourali M, Tattersall A. Stress in nurses: coping, managerial support and work demand. Stress and Health. 2001;17(1):55-63.
3. Włodarczyk D, Tobolska B. Proffesional image of nurses as perceived by doctor, patients and nusres themselves. Med Pr. 2011;62(3):269–79. (Polish)
4. Dębska G, Pasek M, Wilczek-Rużyczka E. Psychological strain and occupational burnout among nurses of various specialties. Hygeia Public Health 2014;49(1):113-9. (Polish)
5. Onan N, Barlas GU, Karaca S, Yıldırım N K, Taşkıran O, Sumeli F. The relations between perceived stress, communication skills and psychological symptoms in oncology nurses. MUSBED 2015;5(3):170-7.
6. Mróz J. Personal resources in work-related behaviour and experience patterns of nurses. Probl Hig Epidemiol. 2014;95(3):731-6. (Polish)
7. Mróz J. Resilience, perceived stress and types of work-related behavior and experience among nurses. Hygeia Public Health, 2014;49(4):857-63. (Polish)
8. Lazarus RS, Folkman S. Stress, Appraisal, and Coping. New York: Springer, 1984.

9. Carver CS, Connor-Smith J. Personality and coping. Ann Rev Psychol. 2010;61:679-704.
10. Mark G, Smith AP, Occupational stress, job characteristics, coping, and the mental health of nurses. Br J Health Psychol. 2011;1-17.
11. Schreuder JA, Roelen CA, Groothoff JW, van der Klink JJ, Magerøy NA, Pallesen SN, Bjorvatn B, Moen BE. Coping styles relate to health and work environment of Norwegian and Dutch hospital nurses: a comparative study. Nurs Outlook. 2012;60(1):37-43.
12. Collins L, Gollnisch G, Morsheimer E. Work stress, coping, and substance abuse among female nurses. In: Wetherington CL, Romand AB, editors. Drug Addiction Research and the Health of Women. NIDA; Rockville, MD: 1998, 319–38.
13. Avey JB, Reichard RJ, Luthans F, Mhatre KH. Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. Hum Resour Dev Q. 2001;22(2):127-52.
14. Kim M, Windsor C. Resilience and Work-life Balance in First-line Nurse Manager. Asian Nurs Res. 2015;9:21-7.
15. Ogińska-Bulik N, Juczyński Z. The Resiliency Assessment Scale (SPP-25). Now Psychol. 2008;3:39-56. (Polish)
16. Avey JB, Luthans F, Youssef CM. The additive value of positive psychological capital in predicting work attitudes and behaviors. J Manage. 2010;36(2):30-452.
17. Zander M, Hutton A, King L. Coping and resilience in pediatric oncology nurses CE. J Pediatr Oncol Nurs. 2010;27(2):94–108.
18. Ablett JR, Jones RS. Resilience and well-being in palliative care staff: a qualitative study of hospice nurses' experience of work. Psycho-Oncology. 2007;16(8):733-40.
19. Gillespie BM, Charboyer W, Wallis M. The influence of personal characteristics on the resilience of operating room nurses: A predictor study. Intern J Nurs Studies. 2009;46:968–76.
20. Mealer M, Jones J, Moss M. A qualitative study of resilience and posttraumatic stress disorder in United States ICU nurses. Intensive Care Med. 2012;38:1445–51.
21. Ogińska-Bulik N. The role of resiliency in preventing the negative effects negative of occupational stress. [in:] Family and work in crisis conditions. Golińska L, Bielawska-Batorowicz E (ed). Wyd UŁ, Łódź 2011:486-97. (Polish)
22. Ríos MI, Carrillo C, Sabuco E. Resilience and burnout syndrome in nursing students and its relationship with sociodemographic variables and interpersonal relationship. Int J Psychol Res. 2012;5(1):88-95. (Spanish)
23. Wei S, Shujuanb Z, Qiboc H. Resilience and socialsupport as moderators of work stress of young teachers in engineering college. Procedia Eng. 2011;24:856-60.
24. Plopa M, Makarowski R. Perceived Stress Questionnaire. Warszawa: Vizja Press & IT 2010. (Polish)
25. Carver C. You want to measure coping but your protocol's too long: consider the Brief COPE. Int J Behav Med. 1997;4(1):92-100.
26. Juczyński Z, Ogińska – Bulik N. Measurements assessed stress and coping with stress. Pracownia Testów Psychologicznych, Warszawa 2009. (Polish)
27. Carver CS, Scheier MF, Weintraub JK. Assessing coping strategies: A theoretically based approach. J Pers Soc Psychol. 1989;56: 267-83.
28. Basińska MA, Andruszkiewicz A. Strategies of copping with Professional stress among nurses and their behaviors and work experiences, Polskie Forum Psychologiczne. 2010;15(2):169-92. (Polish)
29. Sirois FM, Davis CG, Morgan MS. "Learning to live with what you can't rise above": Control beliefs, symptom control, and adjustment to tinnitus. Health Psychol. 2006;25:119– 23.
30. Voth J, Sirois FM. The role of self-blame and responsibility in adjustment to inflammatory bowel disease. Rehabilitation Psychol. 2009; 54:99-108.
31. Ogińska-Bulik N, Langner I. Type D personality, coping with stress and intensity of PTSD symptoms in firefighters. Med Pr. 2007;5 8(4):307–16. (Polish)
32. Łuczak A. Coping with occupational stress strategies in professional lorry drive. Polskie Forum Psychologiczne. 2012;17(1):137-54. (Polish)
33. Smitha BW, Tooleya EM, Christophera PJ, Kayb VS. Resilience as the ability to bounce back from stress: A neglected personal resource? J Positive Psychol. 2010;5(3):166–76.
34. Tung KS, Ning WW, Kris LEE. Effect of Resilience on Self-Perceived Stress and Experiences on Stress Symptoms A Surveillance Report. Univ J Public Health. 2014;2(2):64-72.
35. Ogińska-Bulik N. Resliliency and satisfactiona with life in alcohol-dependet person. Alcohol Drug Addiction. 2014;27(4):319–24. (Polish)
36. Matud MP. Gender differences in stress and coping styles. Pers Indiv Differ. 2004;37(7): 1401-15.