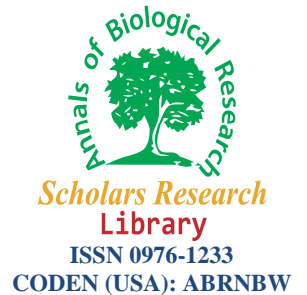




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## Associations among perceived stress and hardiness at nursing and criminology students

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### ABSTRACT

*Specific associations among perceived stress and hardiness can reflect the characteristics of workers in particular professions. The goals of this research were to analyze sets of correlations between the aspects of hardiness and experienced stress, separately for two subsamples of subjects in the research, and on the entire sample. Then, the goal was to determine the correlations among the aspects of stress and hardiness, with three variables: age, work experience and number of children. A correlative study was conducted in Croatia on two samples: 75 nursing and 63 criminology students, using Stress-test (ST) and Short Hardiness Scale (SHS). The results showed low and negative correlations among two aspects of hardiness and the dimensions of stress. Aspects of hardiness was not correlated with the dimension of diet and sleep difficulties. There are no statistical significant correlations between age, work experience and number of children with stress. The aspect of control becomes lower emphasized with age, mainly at nurses.*

**Key words:** stress, hardiness, nursing students, criminology students

### INTRODUCTION

Stress is an important factor affecting health and wellbeing of a person. Specific associations among perceived stress and hardiness can reflect the characteristics of workers in particular professions. Therefore, this article is focused on positively selected nurses and criminologists.

According to theories of stress, stress is defined by three models: stimulus models define stress as external stimulus; stress-response models define stress as response or reaction to variety of psychosocial external stimuli, while cognitive models consider the link between the stress and personality [1]. Job-related stress is defined as a string of harmful, physiological, psychological and behavioral responses to situations inconsistent with their needs and resources which can eventually lead to burnout [2, 3]. Data suggests that health care and police departments are one of the most stressful work environments [4, 5, 6]. In this paper we will use a cognitive model or a psychological approach to stress, which takes into account individual differences in perceptions, responses and coping with stress. One of the most commonly used constructs in the area of coping with stress is hardiness. According to Kobasa (1979), hardiness, a personality style, is a set of beliefs about self and the world [7, 8]. It has three components, commitment, control and challenge. Commitment is defined as a tendency to being involved in daily life activities and an internal interest and curiosity around world including society, things as well as people. Control, is defined as a tendency to believe and behave to effect on the events which occur around the person. Challenge is defined as a belief to change and avoid of stagnation which in turn can lead to personal growth [9]. In this paper topic is focused on the relations between stress and hardiness among police officers and nurses. The main goal of the research was to analyze sets of correlations between aspects of hardiness and experienced stress, separately for two subsamples of subjects in the research, and on the entire sample. Additionally, the goal was to determine the correlations among the aspects of stress and hardiness, with three variables: age, work experience and number of children.

## MATERIALS AND METHODS

A correlative study was conducted in Croatia on a sample of 75 students (14 men and 61 women) of undergraduate professional study of nursing, University of Dubrovnik, aged  $32,01 \pm 8,67$ , work experience  $10,77 \pm 8,52$  years; 34 (45%) unmarried, 32 (43%) married and 9 (12%) divorced; 36 (48 %) without children and: 14 (19%) one child, 18 (24%) two children, 6 (8%) three children and one (1%) with four children. Second sample consists of 63 students (49 men and 14 women) of specialist professional graduate study of criminology, Police Academy (Zagreb), aged  $33,85 \pm 4,84$ , work experience  $12,42 \pm 6,20$  years; 8 (13%) unmarried, 51 (82%) married, and 4 (5%) divorced; 23 (37%) without children, 16 (26%) one child, 19 (31%) two children, 2 (3%) three children and 3 (3%) with four children.

Stress-test (ST) [10] and Short Hardiness Scale (SHS) were used in order to measure the variables. Estimations in SHS were given on a 4-point Likert scale, anchored at 0 = *I don't agree* to 3 = *I agree completely*, while at the ST estimation scale was in range from Yes=2, Sometimes=1 and No=0. SHS contains 15 items based on self-assessment of hardiness, used to measure the commitment, control and challenge (five items in each aspect), defined as simple linear combinations: a higher score means greater hardiness. The subscales showed very low but satisfactory reliability: *commitment* (Cronbach  $\alpha = .51$ ), *control* ( $\alpha = .54$ ) and *challenge* ( $\alpha = .59$ ). ST contains 8 items based on self-assessment of stress, used to measure two aspects of stress: *exhaustion and lack of control* (4 items, Cronbach  $\alpha = .71$ ) and *diet and sleep difficulties* (4 items,  $\alpha = .54$ ), defined as regression factor scores: a higher score means greater stress.

Analysis of research data was performed using SPSS 11. To determine the correlations variables, the Spearman rank correlation coefficients are used, at the level of the entire sample and the level of individual subsamples. To adjust the influence of gender in two samples, the results are standardized separately for men and women using z-values. The significance of correlations were commented on the level of  $p < 0.05$ . To determine the reliability of the internal consistency of both questionnaires, Cronbach's alpha coefficients are used.

## RESULTS AND DISCUSSION

Associations between aspects of stress and hardiness at nursing and criminology students show low negative correlations among two aspects of *hardiness* (commitment and control) and the dimension of *exhausting and loss of control* (at the entire sample and at criminology students), while at nursing students the correlation with *control* is insignificant (Table 1). The aspect of challenge was low and negatively correlated, only with *exhausting and less of control* and only at nursing students (the other correlations are insignificant). Possible explanation could be in the fact that in this study we have measured the general stress, and not job - related stress, which would have likely shown a higher level of negative correlation between aspects of hardiness and perceived stress. Shift work is a major characteristic of all police and health professionals, especially nurses. Although some research suggests that shift and night work could have a significant influence on sleep, digestive and cardiovascular disorders, as well and health and safety at work [11], the results of our study did not show any significant correlation. Due to the nature of nursing and police occupations (shifts and night work) and time spent on-call (being ready to be called to work at a moment's notice), our participants are used not to have regular meals and rest intervals, so they probably did not perceive those factors as stressors.

Table 1 – Correlations between aspects of stress and hardiness at nursing and criminology students

Variable	Entire sample		Nursing		Criminology	
	Exhausting	Diet and sleep	Exhausting	Diet and sleep	Exhausting	Diet and sleep
Commitment	<b>-0.257**</b>	0.156	<b>-0.271*</b>	0.114	<b>-0.298*</b>	0.206
Control	<b>-0.214*</b>	-0.053	-0.131	-0.101	<b>-0.352**</b>	0.013
Challenge	-0.163	0.067	<b>-0.250*</b>	0.006	-0.098	0.136

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

There are no statistical significant correlations between stress and age, work experience and number of children, at nursing and criminology students (Table 2). Correlation among two aspects of stress is low, negative and statistically significant only in the sample of criminology students. Other research also indicated the lack of correlations of age and some socioeconomic factors with the prevalence of stress [12]. It seems like that work demands in both professions outweighs the impact that age, work experience and the number of children can have on the perception of stress. Future studies could include profession-adjusted stress measures in order to obtain more clear trends.

**Table 2 - Correlations between aspects of stress with age, work experience and number of children (at nursing and criminology students)**

Variable	Entire sample		Nursing		Criminology	
	Exhausting	Diet and sleep	Exhausting	Diet and sleep	Exhausting	Diet and sleep
number children	0.085	-0.033	-0.013	0.127	0.195	-0.233
age	0.066	-0.088	0.082	0.003	0.154	-0.232
work experience	0.137	-0.014	0.156	0.089	0.182	-0.142
<b>Exhausting</b>	1	-0.152	1	-0.002	1	<b>-0.362**</b>
<b>Diet and sleep</b>	-	1	-	1	-	1

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Statistically significant negative and very low correlations between aspects of hardiness with age, work experience and number of children are only three: among control with age and number of children (on the entire sample) and between control and age (at nursing students). Correlation among three aspects of hardiness mainly positive, low and statistically significant: among commitment with challenge and control (in all three samples) and among control and challenge, only in the sample of criminology students (Table 3). The results show that the aspect of control decline with age, especially among nurses, which can mean that they do not have ability to cope with stress as younger personnel. A survey conducted in the USA among adults aged 25 to 74 years, years, showed that increasing age is directly proportional to the level of stress [13]. As previous discussed, the control component of hardiness is the ability of the individual to believe and act in a way that influences life's events rather than feeling helpless when confronted with adversity [4]. Our results indicate that people with greater life experience realize at some point that one cannot always influence life's events as desired. Similar negative correlation exists between work experience and control, but on a statistically insignificant level.

**Table 3 - Correlations between aspects of hardiness with age, work experience and number of children (at nursing and criminology students)**

Variable	Entire sample			Nursing			Criminology		
	Commit.	Contr.	Challen.	Commit.	Contr.	Challen.	Commit.	Contr.	Challen.
number children	-0.065	<b>-0.169*</b>	-0.048	-0.077	-0.105	-0.096	-0.027	-0.240	0.062
age	-0.121	<b>-0.196*</b>	-0.125	-0.194	<b>-0.250**</b>	-0.140	0.108	-0.092	-0.036
work experience	-0.104	-0.130	-0.141	-0.215	-0.192	-0.217	0.186	-0.027	0.066
<b>Commit.</b>	1	<b>0.335**</b>	<b>0.399**</b>	1	<b>.285*</b>	<b>.262*</b>	1	<b>.469**</b>	<b>.496**</b>
<b>Control</b>		1	0.065		1	-0.136		1	<b>.383**</b>
<b>Challenge</b>			1			1			1

\*\*Correlation is significant at the 0.01 level (2-tailed).

\*Correlation is significant at the 0.05 level (2-tailed).

The advantage of this research is general lack of similar comparative studies of stress and hardiness between two highly stressful occupation such as of nurses and police officers with regards to different investigated variables. Besides their daily job-related stress they are also under academic stress, since educational stress has been proved in many studies [14, 15]. The main disadvantage is a relatively small number of participants (although it should be noted that we have included most of the current student population of both studies). In the future, the sample could be extended to students of the same study in other countries. The results of our study indicate that in the stressful occupations such as nursing and criminology, the guidelines for stress preventive and workshops with the aim of enhancing hardiness should be given for the targeted occupations.

## CONCLUSION

Associations between two aspects of stress and three aspects of hardiness at nursing and criminology students show low and negative correlations among two aspects of hardiness and the dimensions of stress. Aspects of hardiness was not correlated with the dimension of *diet and sleep difficulties*. There are no statistical significant correlations between age, work experience and number of children with stress. The aspect of control becomes lower emphasized with age, mainly at nurses.

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