

Vol. 7, Issue 2, October-2019
ISSN 2559-1649 (online)



ROMANIAN JOURNAL

ROMANIAN
STUDIES
PS
JOURNAL
PSYCHOLOGICAL

OF PSYCHOLOGICAL STUDIES

HYPERION UNIVERSITY



ROMANIAN JOURNAL OF PSYCHOLOGICAL STUDIES

Vol. 7, Issue 2, October-2019

ISSN 2559-1649, ISSN-L 2559-1649

Biannual journal published by Hyperion University,
Faculty of Psychology and Educational Sciences, Department of Psychology

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THE RELATIONSHIP BETWEEN PEDESTRIAN BEHAVIOR AND PERSONALITY TRAITS

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Abstract

The objectives and hypotheses are focused on evidencing how the personality traits predict the positive behavior as facet of the pedestrian behavior. Method: The participants were 30 pedestrians aged between 20 and 45, Bucharest. Instruments: The Hexaco-Pi-R personality inventory (Ashton and Lee, 2010) adapted on the Romanian population by Burtaverde (2015). The tool has 100 items on Likert scale from 1 (minimum) to 5 (maximum). Pedestrian behavior scale (Marie-Axelle Granié, Marjorie Pannetier, Ludivine Gueho, 2013) with 23 items and 5 dimensions on Likert scale from 1 (minimum) to 5 (maximum). The tools were applied with the keeping of anonymity and ethics in research. Results and Conclusions

The assumptions of the research have been partially confirmed. Personality traits predict pedestrian behavior measured on the dimensions: violation of rules, mistakes, negligence, aggressive behavior, positive behavior. Further studies shall investigate the relationship between the personality traits and rule violation, aggressive behavior, negligence and mistakes.

Keywords: pedestrian behavior, prudence, organization, consciousness, positive behavior.

1. INTRODUCTION

Jain, Gupta and Rastogi (2014) were interested in studying the behaviour of the pedestrians at uncontrolled intersections and the effects of the intersection conditions, traffic conditions and pedestrian movements. The collected data methods were the direct and video observations and the pedestrian's interviews. The results evidenced that perpendicular crossing and very reduce waiting time were the pedestrian characteristics for crossing the analysed crossroads.

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Zacharias (2001) presented a literature review based on over 50 studies. The author was interested to evidence how pedestrians tend respond to environment characteristics and how they formulate the walking route.

Zeng, Nakamura & Chen (2014) simulated a pedestrian crossing model based on repulsive and attractive phenomena. The model was validated in the way of avoiding the collision with vehicles and other pedestrians.

Deb, Strawdermana, DuBieb, Smitha, Carruthc & Garrisonc (2017) were focused to validate the self-reporting Pedestrian Behavior Questionnaire (PBQ) on North American population from USA. They were interested in measuring the risky behaviors frequency for pedestrians. The Alpha Cronbach coefficients for the five factors were be reliable at the lower and higher boundaries ($0.7 < \text{Cronbach's alpha } (\alpha) < 0.9$). For the dimension positive behaviours, the Alpha Cronbach in under the lower boundary ($\alpha < 0.6$). The authors encourage the use of this tool for educational and research purposes.

Sankaran & Perumal (2014) conducted a study focused on analysing the pedestrian behaviour at signalized intersections. The authors analysed 775 pedestrians in Mumbai, India. The authors applied a logistic regression model for pedestrian noncompliance and interaction. Mako & Szakonyi (2016) were interested to evidence the effects of the road measures at pedestrian crossings. The measures were focused on introducing traffic lights, roundabouts and refuge islands for pedestrian safety. The pedestrians were interviewed before and after the implementation.

Talking about negligence as part of human behaviour, Owen (2007) tried to delimitate “The Five Elements of Negligence”. As a pedestrian, the people can be careless when crossing intersections, passing vehicles between them. The pedestrian negligence was studied in many articles.

Violation of rules is another pedestrian behaviour dimension. Chen, Xing & Cao (2017) were interested to study the effects of “waiting time on pedestrian violations at signalized intersections”. The authors define the violation of rules as forcing to crossing and illegality to crossing. The study was based on pedestrian behaviour recorded focused on time waiting to rule violation. The authors find out that the frequency of rule violation correlate with the age and gender. Reducing the rule violation correlate with pedestrian group size waiting at the crossroads. Akter (2017) conducted a study presented in the dissertation paper. The study was focused on pedestrian violation rules at crossroads in Bangladesh.

Concluding the findings from the studies, the pedestrian behaviour is the same all around the world when crossing the street and crossroads. There are variables that either increase or decrease the dimensions of the pedestrian behaviour.

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

Pedestrians play a fundamental role in road traffic in cities, especially for crossing pass at intersections as well as on various boulevards, streets where there are no pedestrian crossings. Hence the objective of the study is to reveal what personality traits predict the positive behavior as pedestrian behavior dimension.

2.2. HYPOTHESES

1. We assume that consciousness predicts the pedestrians' positive behavior.
2. We assume that organization predicts the pedestrians' positive behavior.
3. We assume the extraversion predicts the pedestrians' positive behavior.
4. We assume that flexibility predicts the pedestrians' positive behavior.
5. We assume the prudence predicts the pedestrians' positive behavior.

6. METHOD

6.1. The participants

The participants were a group of 45 pedestrians, age between 20 and 45 years old, from Bucharest town, Romania. From all the respondents only 30 pedestrians completed both questionnaires. Hence the collected data were analysed in the "results section".

6.2. The instruments

The Hexaco-Pi-R personality inventory (Ashton and Lee, 2010) adapted on the Romanian population by Burtaverde (2015). The tool has a number of 100 items measured on Likert scale from 1 (minimum) to 5 (maximum).

Pedestrian behavior scale (Granié, Pannetier, Gueho, 2013) with 23 items and 5 dimensions measured on Likert scale from 1 (minimum) to 5 (maximum). The pedestrian behaviour scale measures the dimensions: violation of rules, mistakes, negligence, aggressive behavior, positive behavior.

6.3. Procedure

The tools were applied with the keeping of anonymity and ethics in research. Also, the GDPR legislation was respected. The instruments were applied in the parks and on the streets with the respect and the anonymity of the pedestrians.

7. RESULTS

After data collection the hypotheses were tested using the simple linear regression model. In table 1 can be see the R and R Square values for the prediction model.

Table 1 – Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.398 ^a	.159	.129	9.35969

a. Predictors: (Constant), Conscientiousness

b. Dependent Variable: Positive behavior

In the table 2 can be seen the F and significance values.

Table 2 – ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	462.563	1	462.563	5.280	.029 ^b
	Residual	2452.904	28	87.604		
	Total	2915.467	29			

a. Dependent Variable: Positive behavior

b. Predictors: (Constant), Conscientiousness

In the table 3 can be seen the Constant, the Unstandardized Coefficients and the Standardized Coefficients of the regression model.

Table 3 – Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	33.888	9.573		3.540	.001
	Conscientiousness	.591	.257	.398	2.298	.029

a. Dependent Variable: Positive behavior

Hence, the hypotheses regarding the Conscientiousness as predictor for the positive behavior has been confirmed at the significance $p=.029<.05$. The regression equation according the presented model is the following:

$$\text{Positive behavior} = 33,888 + .591 * \text{Conscientiousness}$$

Testing the hypotheses regarding the prudence as predictor for the positive behavior of the pedestrian, the R and R Square values can be seen in the table 4.

Table 4– Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.494 ^a	.244	.217	8.87299

a. Predictors: (Constant), Prudence

b. Dependent Variable: Positive behavior

In the table 5 can be seen the F and the significance values.

Table 5 – ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	711.026	1	711.026	9.031	.006 ^b
	Residual	2204.441	28	78.730		
	Total	2915.467	29			

a. Dependent Variable: Positive behavior

b. Predictors: (Constant), Prudence

In the table 6 can be seen the Constant, the Unstandardized Coefficients and the Standardized Coefficients for the regression model with the Prudence as personality trait predictor for the positive pedestrian behavior. Hence, the hypothesis has been confirmed.

Table 6 – Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	36.591	6.508		5.623	.000
	Prudence	1.827	.608	.494	3.005	.006

a. Dependent Variable: Positive behavior

The regression equation is the following:

$$\text{Positive behavior} = 36,591 + 1.827 * \text{Prudence}$$

Testing the hypothesis that the organization as personality trait is predictor for the positive behavior, the following three tables reveal the results. In the table 7 can be seen the R and R Square values for the regression model.

Table 7 – Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.361 ^a	.131	.100	9.51432

a. Predictors: (Constant), Organization

b. Dependent Variable: Positive behavior

In the table 8 can be seen the Constant, the Unstandardized Coefficient and the Standardized Coefficients values.

Table 8– Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	44.737	5.543		8.071	.000
	Organization	1.652	.806	.361	2.051	.049

a. Dependent Variable: Positive behavior

According to table 8 the regression equation is the following:

Positive behavior = $44,737 + 1,652 * \text{Organization}$

Hence, the hypothesis has been confirmed.

The hypotheses regarding the flexibility and extraversion predictors for the positive behaviour were not confirmed.

8. CONCLUSIONS

Personality traits (Ashton & Lee, 2010) play a key role in predicting workplace behavior and road traffic. In the present research, the fundamental objective is to establish statistically significant relationships between the personality traits and pedestrian behavior. Pedestrians play a fundamental role in road traffic in cities, especially for crossing pass at intersections as well as on various boulevards, streets where there are no pedestrian crossings.

The present study wants to highlight the personality traits that predict the positive relations and attitudes of the pedestrian in traffic. In addition to the negative dimensions of pedestrian behavior measured using the Pedestrian behavior scale tool (Marie-Axelle Granié, Marjorie Pannetier, Ludivine Gueho, 2013) positive behavior is shown in the items: I thank a driver who stops to let me cross, I stop to let the pedestrians I meet by.

Five hypotheses have been tested regarding personality traits that predict pedestrian positive behavior. Thus, as evidenced by the results obtained conscientiousness, prudence and organization predict statistically significant pedestrian positive behaviour ($p < .05$).

The study represents a starting point for many studies on pedestrian behaviour. The variables positive behaviour, violation of rules, mistakes, negligence and aggressive behaviour represents variables that may be the cause of accidents in traffic.

Received at: 12.09.2019, Accepted for publication on: 18.09.2019

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VALIDATION OF THE ROMANIAN VERSION OF THE SCALE FOR QUALITY OF LIFE FOR YOUNG PEOPLE WITH CANCER

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Abstract

Through this study we want to see what are the indicators that affect the quality of life of young cancer survivors and the validation of the scale of evaluation of the quality of life of young people with cancer, 18-25 years, PedsQL (Varni, Seid, Rode, 1999) in the population of our country. To evaluate the quality of life, a specific evaluation tool was used, namely PedsQL (Varni, Seid, Rode, 1999) with 27 items (2 items for pain, 5 items for nausea, 3 items for anxiety in procedures, 3 items for anxiety in treatment, 3 items for concern, 3 items for anxiety, 5 items for cognitive problems, 3 items for physical perception, 3 items for communication) and Hospital Anxiety Depression Scale (HADS), (Ladea, 2003) with 14 items and two subscales, one for anxiety (7 items) and one for depression (7 items). The study demonstrates the validity of the PedsQL (Varni, Seid, Rode, 1999) scale for patients participating in the study, and the results of the study provide indicators to specialists involved that can improve their daily work, communication with patients and possibly a better quality of life for the young cancer patient and for all involved in the care of a young survivor

Keywords: *young, cancer, quality of life, survivor*

1. INTRODUCTION

Adolescents and young adults (AYA) with cancer are experiencing multiple symptoms as a result of the disease and treatment. Accurate symptom assessment is vital for high quality supportive care and therapy evaluation. Research addressing symptoms among individuals with cancer has increased in the past 20 years, but nonetheless, symptom research among AYA as a distinct population is limited. Diversity among the AYA age group in terms of development and life experiences

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in general creates challenges in designing studies as well as identifying the evaluation of appropriate symptoms. AYA 18 years of age are most commonly treated at pediatric centers and included in study samples with younger children, and AYA over 18 years are included in studies with adults. This division of AYA into research prevented progress in identifying the symptoms that address this target group (Linder et al., 2015). Validated tools for measuring symptoms across the entire AYA age range (between 15 and 39 years) are rare, and in our country there is no validated quality of life tool for adolescents/young people with cancer.

Psychosocial problems of adolescents/young people with cancer are: changes in the perception of the physical/bodily image when self-confidence is so important for AYA, self-respect and social integration, mutilating / disfigurement surgery, acne, weight gain or weight loss, infertility, delay of puberty, interruption of normal sexual function, loss of independence, discontinuation of education or employment, family conflicts, isolation of siblings ("stigma" of cancer), struggle to reconcile with diagnosis, keeping hope (Mountzios, 2019). It is important to measure the quality of life in adolescent/young patients with cancer, namely personal relationships, sexuality, employment, financial problems, education, emotions, body image and self-esteem.

Psychosocial support and palliative care are also important components of cancer care. Long-term supervision should include both the physical and the psychological side because pediatric cancer survivors face difficulties in restoring their lives at school, at home and at community level (Fitzpatrick, 2016).

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

Through this study we want to see what are the indicators that affect the quality of life of young cancer survivors and validation of the scale of evaluation of the quality of life of young people with cancer 18-25 years, PedsQL (Varni, Seid, Rode, 1999) in the population of our country.

2.2. HYPOTHESES

The working hypothesis was that for young people with cancer survivors the level of quality of life in all the areas it encompasses is significantly affected by certain indicators.

3. METHOD

To evaluate the quality of life of young people with cancer, PedsQL (Varni, Seid, Rode, 1999) was used with 27 items (2 items for pain, 5 items for nausea, 3 items for anxiety in procedures, 3 items for treatment anxiety, 3 items for concern, 3 items for problems, 5 items for problems cognitive, 3 items for perception on the physical aspect, 3 items for communication, each item has five variants reflecting

severity, rated from 0 to 4) and Hospital Anxiety Depression Scale (HADS) with 14 items validated on our population by Maria Ladea (2003). After the agreement was obtained to translate the life assessment scale for young people with cancer from the Mapi Research Trust, the translation was done by two Romanian translators authorized for English. The differences between the two translations were discussed, then a Romanian version was finalized. Another authorized translator translated this version into English and there were no understandable differences from the original English version. The test for the validation of the PedsQL scale (Varni, Seid, Rode, 1999) was done through a survey in July 2019 on a batch of 35 young people, 18 women and 17 men between the ages of 18 and 25 years ($M = 20$ years + - 2 SD, 95% CI.)

Validity was performed by testing the concurrent validity between PedsQL scale (Varni, Seid, Rode, 1999) on the one hand and the HADS (Hospital Anxiety and Depression Scale) scale (Ladea, considered “golden standard”) on the other. The HADS scale is a two-dimensional 14-item scale that contains two subscales, one for anxiety (7 items) and one for depression (7 items). The HADS (Ladea, 2003) scale has been widespread over the past twenty years, is short and is for identifying anxiety and depressive states and the severity of these conditions. For the statistical analysis of the results obtained from the two tests, the statistical software Epi Info was used, a statistical software developed by the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia (USA) and licensed as a public domain.

The association between the response categories was analyzed using the chi-squared test, the contingency table between the items in the PedsQL (Varni, Seid, Rode, 1999) scale. Linear regression was used to identify which variables are, in particular, significant predictors of the outcome variable and to explain the relationship between a dependent variable and one or more independent variables. Regression analysis helps us to understand how much the dependent variable changes with a change in one or more independent variables, and in this analysis the following indicators are used: *Coefficient* - the regression coefficient that represents the average of the response variable change for a single unit of change in the predictor variable while keeping other predictors in the model constant; *Std error* - the standard error is an estimate of the standard deviation of a coefficient; *P-value* a predictor with a low p-value is a significant addition to the model because the variations of the predictor value are correlated with the changes of the response variable; *Constant*-guarantees that the residues do not have a positive or negative overall tendency and serve as a waste bin for any prejudice that is not explained by the terms in the model; *Correlation Coefficient*: r^2 - expresses the intensity of the connection between the regression series, and $r > 0$ indicates direct links and r close to +1 indicates a close link between variables; *Sum of Squares*- provides information on how long the estimated regression line is from the horizontal line

"no relationships"; *Mean Square*- provides information on the differences between samples; *F-statistic*- says if a group of variables are significant in common; *Residuals* - the difference between the observed value and the predicted value.

4. RESULTS

For the fidelity of the PedsQL test (Varni, Seid, Rode, 1999), the internal consistency (α Cronbach) was calculated in Excel, and the internal consistency for the Romanian version of the scale (α Cronbach) has the value of 0.68, a value below 0.7 which indicates the need for retesting, possibly and a larger number of respondents.

A statistically significant association was established between the item *I worry about recurrence of the cancer* in the worry section of the PedsQL (Varni, Seid, Rode, 1999) scale with *I feel too bad in the stomach to eat* (table 1) and *I worry about whether or not my medical treatments on the same scale work* (table 2). (probability $p < 0.05$, chi-squared test, df-degrees of freedom).

The total responses from the two subscales of the HADS (Ladea, 2003) scale indicate the easy level for both the anxiety subscale and the depression subscale. The item with the highest score in the anxiety subscale is *I worry*, and the item with the highest score in the depression subscale is *I like it as much as I liked before*. The interaction between the dependent variable was analyzed *I like what I liked before* with the independent variables *I feel too bad in the stomach to eat* (table 3) and *I worry about whether or not my medical treatments work* (table 4) through the regression model and the result obtained is statistically significant $p = 0.000$ ($p < 0.05$, F-test).

Table 1- Item association *I worry that the cancer will recur* with the item *I feel too bad in the stomach to eat*

	<i>I feel too bad in the stomach to eat</i>				
<i>I worry that the cancer will recur</i>	0	1	2	3	Total
0	1	0	0	1	2
Row%	50.00%	0.00%	0.00%	50.00%	100.00%
Col%	5.88%	0.00%	0.00%	50.00%	5.71%
1	3	5	1	1	10
Row%	30.00%	50.00%	10.00%	10.00%	100.00%

Col%	17.65%	45.45%	20.00%	50.00%	28.57%
2	12	4	1	0	17
Row%	70.59%	23.53%	5.88%	0.00%	100.00%
Col%	70.59%	36.36%	20.00%	0.00%	48.57%
3	1	2	3	0	6
Row%	16.67%	33.33%	50.00%	0.00%	100.00%
Col%	5.88%	18.18%	60.00%	0.00%	17.14%
TOTAL	17	11	5	2	35
Row%	48.57%	31.43%	14.29%	5.71%	100.00%
Col%	100.00%	100.00%	100.00%	100.00%	100.00%

Chi-Squared df Probability
 20.8471 9 0.0133

Row% - Percentage of the total item *I am worried that the cancer will recur* for each response variant; Col% - percentage of the total item *I feel too bad in the stomach to eat* for each answer variant

Table 2- Item association *I worry that the cancer will recur* with the item *I worry about whether or not my medical treatments work*

	<i>I worry about whether or not my medical treatments work</i>				
<i>I worry that the cancer will recur</i>	0	1	2	3	Total
0	2	0	0	0	2
Row%	100.00%	0.00%	0.00%	0.00%	100.00%
Col%	28.57%	0.00%	0.00%	0.00%	5.71%
1	0	7	2	1	10
Row%	0.00%	70.00%	20.00%	10.00%	100.00%
Col%	0.00%	77.78%	13.33%	25.00%	28.57%

2	5	2	10	0	17
Row%	29.41%	11.76%	58.82%	0.00%	100.00%
Col%	71.43%	22.22%	66.67%	0.00%	48.57%
3	0	0	3	3	6
Row%	0.00%	0.00%	50.00%	50.00%	100.00%
Col%	0.00%	0.00%	20.00%	75.00%	17.14%
TOTAL	7	9	15	4	35
Row%	20.00%	25.71%	42.86%	11.43%	100.00%
Col%	100.00%	100.00%	100.00%	100.00%	100.00%

Chi-Squared df Probability
34.4824 9 0.0001

Row% - Percentage of the total *item I am worried that the cancer will recur* for each response variant; Col% - percentage of the total *item I worry about whether or not my medical treatments work* for each answer variant

Tabel 3- Linear Regression- *item I feel too bad in the stomach to eat*

Variable	Coefficient	Std Error	F-test	P-Value
<i>I like it as much as I liked before</i>	0.235	0.109	4.6490	0.038457
CONSTANT	-0.031	0.253	0.0146	0.904405

Correlation Coefficient: $r^2 = 0.12$

Source	df	Sum of Squares	Mean Square	F-statistic
Regression	1	1.080	1.080	4.649
Residuals	33	7.663	0.232	
Total	34	8.743		

Tabel 4- Linear Regression- I worry about whether or not my medical treatments work

Variable	Coefficient	Std Error	F-test	P-Value
<i>I like it as much as I liked before</i>	0.235	0.109	4.6490	0.038457
CONSTANT	-0.031	0.253	0.0146	0.904405

Correlation Coefficient: $r^2 = 0.12$

Source	df	Sum of Squares	Mean Square	F-statistic
Regression	1	1.080	1.080	4.649
Residuals	33	7.663	0.232	
Total	34	8.743		

5. CONCLUSIONS

High fear of cancer recurrence (FCR) is a commonly reported problem in cancer patients. Previous research has shown that younger age is associated with higher levels of FCR. However, so far, little attention has been paid to how FCR manifests itself among adolescents and young adults (AYA) cancer patients. A 2018 study explores the prevalence, high FCR correlations and its association with HRQoL in cancer patients in adolescence or young adulthood. Seventy-three AYA cancer patients, aged between 18 and 35 years at diagnosis, consulted the AYA team at Radboud University Medical Center, completed questionnaires, including the Cancer Concern Scale, CWS, (Lerman, Trock, Rimer, Jepson, et al., 1991) Quality of Life of Survivors cancer, QOL-CS, (Ferrell, Hassey-Dow, Grant, 2012) and Anxiety and Depression Scale (HADS), (Ladea, 2003). The socio-demographic and medical data were collected through a self-reported questionnaire. Forty-five participants had a high level of FCR (62%), and high FCR was significantly associated with lower levels of social and psychological functioning and general HRQOL and higher levels of anxiety and psychological distress. The results illustrate that FCR is a significant problem among AYA cancer patients, with participants reporting higher levels of FCR than mixed-age cancer patients.

Healthcare providers should pay specific attention to this issue by screening and providing appropriate psychosocial care when needed (Thewes et al, 2018).

Quality of life, anxiety and depression among people diagnosed with adolescent cancer up to 4 years after diagnosis and compared to a reference group were investigated in a study in 2010. The cancer group (N = 61) completed a SF-36 mental health and vitality questionnaire, and anxiety and depression through HADS subscale (Ladea, 2003) shortly and at 6, 12, 18, 24, 36 and 48 months after diagnosis. The reference group (N = 300) randomly extracted from the civil register of the Swedish population of statistics completed the same tools for an evaluation. Data were collected through telephone interviews. Up to 6 months after diagnosis, the cancer group reports lower levels of mental health and vitality and a higher level of depression than the reference group. At 18 months after diagnosis a reverse condition occurs and at 48 months after diagnosis, the cancer group reports a higher level of vitality and a lower level of anxiety and depression than the reference group. The results suggest that a positive psychological change may occur following cancer during adolescence. However, efforts should be made to enable clinicians and healthcare personnel to identify and provide psychological support to people experiencing poor quality of life and high emotional distress. If these problems remain undetected and adequate support is not provided, suffering can become a barrier to physical recovery, leading to a vicious cycle of physical and mental disability (Larson et al. 2010).

Adolescents with cancer must cope with their disease and their treatment, while fulfilling the unique tasks of this developmental period. In a pilot study, the prevalence of psychological morbidity among adolescents with cancer was examined. In addition, the evaluation methods and risk factors were analyzed. Forty-three recently diagnosed with cancer completed the Anxiety and Depression Scale, HADS, (Ladea, 2003) Beck Depression Inventory, BDI, (Beck, Steer, Carbin, 1988) and Rotterdam Symptom Checklist, RSCL, (De Haes et al., 1983) and underwent a comprehensive psychiatric evaluation. In psychiatric interviews, 9% of the participants were diagnosed with a depressive disorder of disposition. The results suggest that self-report assessment scales may be useful assessment tools if used as complementary tools. However, psychosocial assessment of the adolescent with cancer is difficult. This seems to be due to an atypical symptoms model and a tendency to mask stress. Examining cases in patients with depression suggests that diseases and treatment factors may not be primary risk factors for the development of psychological morbidity. External stressors, such as poor family support and previous sexual abuse, when worsened by disease and treatment factors, may be more relevant (Berard, Boormeester, 1998).

The pediatric quality of life measurement model, PedsQL (Varni, Seid, Rode, 1999) was developed to assess the quality of life specific to health-related diseases (HRQOL) in child populations. Currently, there are no systematic reviews of the

studies that examined the psychometric properties of the generic PedsQL Baseline Scales in pediatric cancer patients and survivors (Varni, Seid, Rode, 1999). The 2016 study aimed to answer the question "What is the reliability, validity, feasibility, measurement range and responsiveness of PedsQL generic baseline scales (Varni, Seid, Rode, 1999) in pediatric cancer patients and survivors?" Between 2001 and February 2016, they were included in the review if they evaluated the reliability, validity, feasibility, measurement range and / or responsiveness of the PedsQL generic baseline scales in a pediatric oncology sample or a survivor sample. Two independent reviewers searched the PsycINFO and PubMed databases, which led to 16 studies that met the full inclusion criteria. The analyzed studies were published between 2002 and 2014 and were conducted in 12 different countries. Most studies reported Cronbach's alpha, which reached or exceeded 0.70 for the parent report and the child self-report for 8-18 years. Almost all studies evaluating construct validity concluded that cancer patients and their parents reported statistically significantly lower HRQOL than healthy children in the PedsQL (Varni, Seid, Rode, 1999) domains. Taken together, the studies in the study demonstrate acceptable psychometric properties of the generic PedsQL Baseline Scales (Varni, Seid, Rode, 1999) in pediatric cancer patients and survivors. Further validation studies are warranted to establish the reliability of the test and the reactivity over time of the generic PedsQL (Varni, Seid, Rode, 1999) baseline scales in this population (Cancer.net Editorial Board, 2018).

The word "survival" means different things to different people. Common definitions include: No signs of cancer after termination of treatment / Living with, through and beyond cancer. According to this definition, cancer survival begins with diagnosis and includes people who continue to have long-term treatment, either to reduce the risk of recurrence or to manage chronic diseases. Survival is one of the most complicated parts of cancer. This is because it is different for everyone. Survivors may experience a mixture of strong feelings, including joy, worry, relief, guilt, and fear. Some people say they value life more after a cancer diagnosis and have gained greater acceptance of them. Others become very impatient about their health and are uncertain about coping with daily life. Survivors may feel stress when their frequent visits to the healthcare team end after treatment is over. Often, the relationships built with the cancer care team provide a sense of security during treatment, and people miss this source of support. This can be especially true when new problems and challenges arise over time, such as any late effects of treatment, emotional challenges, including fear of recurrence, issues of sexuality and fertility, and financial and workplace problems. Each survivor has individual concerns and challenges. With any challenge, a good first step is to be able to recognize your fears and talk about them. Effective coping requires: Understanding the challenge you are facing / Thinking through solutions / Asking and supporting others. Many survivors find it helpful to join a personal support

group or online survivor community. This allows you to talk to people who have had similar experiences. Other options for finding help include discussing with a friend or a member of the healthcare team, individual counseling, or requesting assistance from where they received treatment (Limbers & Larson, 2016).

The study demonstrates the validity of the PedsQL (Varni, Seid, Rode, 1999) scale for the patients participating in the study, the results of the study offer specialists in the care team benchmarks to identify elements of anxiety and depression, benchmarks that can improve communication with patients and possibly a better quality of life for everyone involved in the study caring for a young patient with surviving cancer.

Received at: 14.09.2019, Accepted for publication on: 19.09.2019

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THE EFFECTS OF PSYCHOLOGICAL AGGRESSIVE CHARACTERISTICS AMONG THE PERFORMANCE IN LEARNING DRIVING SKILLS

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Abstract

Young, novice drivers constitute a disproportionate percentage of fatalities and injuries in road traffic accidents around the world. This study, attempts to identify the effects of psychological aggressive characteristics among the performance in learning driving skills. Anger as a general concept can be defined as a multidimensional construct that can be expressed at the cognitive, emotional, psychological and behavioral level (Eckhardt, Norlander & Deffenbacher, 2004). Driving rage is an extrapolation of the general concept of road rage (Deffenbacher et al., 2003). Steering wheel anger, in other words, is conceptualized as a frequent and intense tendency to become angry while driving (Deffenbacher et al., 2003). The results of this study are showing a significant difference between the driving skills acquired by those who have a lower score at the “anger” scale and we also revealed that there is a negative correlation ($r = -0.74$) between the level of skills and the level of the “anger” parameter.

Keywords: *driving anger, aggressive driving, anger expression, driver behaviour.*

1. INTRODUCTION

Traffic accidents are still a major cause of injury and death in the world. With the increase of the number of vehicles, the protection of pedestrians and vehicle users is one of the priority topics for vehicle manufacturers (Gatej, Rizeanu,

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Ciolacu, 2016; Rodríguez González et al., 2014).

Major studies in the United States (Toroyan, et al., 2015) and the United Kingdom (Jacobs, Aeron-Thomas, & Astrop, 2000) identified factors associated with large samples of crashes. The research groups, which were unaware of each other's activities, obtained remarkably similar findings. The US study found the road user to be the sole factor in 57% of crashes, the roadway in 3%, and the vehicle in 2%; the corresponding values from the UK study were 65%, 2%, and 2%, respectively. The road user was identified as a sole or contributing factor in 94% of crashes in the US study and in 95% of crashes in the UK study. All the information above supports the core traffic safety research finding that changes in driver behavior offer, by far, the largest opportunities for harm reduction (AAA Foundation for Safety, 2009; Chraif et al, 2015; Rizeanu, Gatej, Ciolacu, 2017; Shinar, 2008).

In the paper "Driver Behavior Questionnaire - A follow-up study", authors Türker Özkan, Timo Lajunen, Heikki Summala (2005) perform a complex analysis, starting from the extended version of the Questionnaire on driver behavior (Lawton et al, 2006) to evaluate driver's outrageous behaviors. The respondents, under the protection of anonymity and the confidentiality clause, answered questions regarding the age, sex and frequency of driving a vehicle, the number and type of accidents, the number and type of crime, sanctions received from the authorities responsible for road safety (for irregular parking), overtaking, speed, ordinary violations and traffic aggression, expired validity documents and others) during the last three years, the number of driving years and the annual mileage performed.

In practice, driving style and driving skills can interact to influence the risk of injury, the use of safety margins, the probability of error (Lawton et al, 2006) and error correction (Redshaw, 2004). The errors, argue the authors of the study, are the result of some cognitive processing problems, while the violations include a motivating component and the contextual requirements.

Results of a questionnaire indicated that almost 90% of drivers have experienced at least one situation involving what they described as aggressive driving during the past year (McGarva & Steiner, 2000).

Driving aggression has been defined in many ways in the literature, reaching the conclusion that it can be identified as an intentional act, which can increase the risk of a collision and which is motivated by impatience, ignorance, hostility and time pressure (Gatej, Rizeanu, Ursachi, 2017; Tasca, 2000).

Summarizing factors, which increase probability of aggressive driving, Tasca (2000) identifies the following factors as the most important: driver's young age; gender belonging – men; being in a traffic situation conferring anonymity and/or where escape is very likely; being generally predisposed to seeking emotions or aggressiveness in other social situations; being in an angry mood (likely due to

events that are not related to traffic situation); belief that someone has superior driving skills; traffic jam, but only if drivers do not expect it.

Krahé and Fenske (2002) found out that there were significant relationships between aggressive driving, Macho personality, age, and power of car. Lajunen (2001) studying association between road traffic accidents and personality variables like extroversion, neuroticism and psychoticism, found the following results. Extroversion correlated positively with the number of deaths on the roads, where as neuroticism negatively correlated with the fatal road accidents. It should be noted that the researcher believed that occupational fatalities were very much related to deaths on the roads but not to dimensions of the personality. Many researchers in the field of road traffic safety have explored issues connected with drivers' locus control. For instance, Rudin-Brown and Noy (2002) reported that locus control was one of the most important factors influencing on the drivers' adaptation behavior. The studies conducted by different researchers showed contradictory results, which proved that this aspect could not be considered definitely (Rundmo & Iversen, 2002; Özkan & Lajunen, 2005).

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

The objective of this study is to reveal the importance of psychological parameters that are involved in the process of learning driving skills. Many studies are showing a negative effect of the aggressiveness on the quality of the skills acquired in the driving school period (Gatej, Maier, 2016)

2.2. HYPOTHESES

- We presume that there are significant differences between the young drivers that are showing high levels of aggressiveness and those who have a low level of aggressiveness regarding the driving skills acquired until the first evaluation.
- We also presume that there is a negative correlation between the "anger" level and the level of performance in driving.

3. METHOD

For this experiment we have compared the results for a number of 100 young driver students between 2015 -2019, students at a driving school in Bucharest, Romania. From a bigger number of cases we have randomly selected 50 cases with

high scores on the “ANGER” scale from the AVIS instrument and 50 cases with a low level of aggressiveness measured with AVIS. We have investigated the rate of success of these driving students at the first evaluation with the driving school instructor with a 1 to 10 scale for driving performance. The scale that was used by the driving trainer was based on the ability to perform maneuvers. By comparing the two samples we have tried to see if there are any significant differences between the two samples.

4. RESULTS

The Results are showing a significant difference between the driving skills acquired by those who have a lower score at the “anger” scale and those with high values at this parameter by this we can assume that the first hypotheses is confirmed. We have also revealed that there is a negative correlation ($r = -0.74$) between the level of skills and the level of the “anger” parameter.

Table 1. Descriptive statistics

Group Statistics					
	COD	N	Mean	Std. Deviation	Std. Error Mean
PERFORMANCE	1.00	50	5.54	1.631	.231
	2.00	50	8.88	.746	.106

In the table above we can see a big difference between the mean of aggressive driving students (sample 1) and those who had a low level of “anger” (sample 2).

Table 2. Independent Samples t Test

Independent Samples Test									
	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	

									Low er	Upp er
PERFOR MANCE	Equal variances assumed	30.84 0	.00 0	- 13.1 65	98	.000	-3.340	.254	- 3.84 3	- 2.83 7
	Equal variances not assumed			- 13.1 65	68.6 39	.000	-3.340	.254	- 3.84 6	- 2.83 4

Based on the results shown above, the research hypothesis that assumes significant differences between subjects that have a high score on “anger” parameter (50-100) and those that have a low level (10-40) of for a sample of 100 subjects. Results on learning driving skills regarding an evaluation of the driving instructor were significantly different between the two samples. ($M_1 = 5.54$, $M_2 = 8.88$, $t = 13.16$, $p < 0.05$). Data revealed by the table above accept the existence of significant differences between the two samples and the confirmation of the statement that anger as an aggressiveness parameter significantly influences driving skills.

Table 3. Correlations

Correlations			
		ANGER	PERFORMANCE
ANGER	Pearson Correlation	1	-.743**
	Sig. (2-tailed)		.000
	N	100	100
PERFORMANCE	Pearson Correlation	-.743**	1
	Sig. (2-tailed)	.000	
	N	100	100

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

The hypothesis that presumes a negative correlation between “anger” behavior and driving skills evaluated in driving school was also confirmed. The Pearson Correlation $r=-.743$ shows a significant negative correlation that can be described from a psychological point of view as following: the more aggressive is the behavior the lowest are the performances in learning driving skills.

5. CONCLUSIONS

Every year, drivers throughout the world are killed or injured in road traffic. Young drivers run a greater risk everywhere, and this problem is still largely unsolved. Better understanding of the underlying processes could, however, be a useful tool. There are, of course, many reasons to speculate why aggressive behaviour might be increasing. More aggression could be seen as resulting from reactions to all sorts of social, cultural, and economic factors; everything from increased traffic congestion to violence in the media. One potential factor worth exploring is changes in traffic enforcement. Strategies to reduce aggressive driving behaviors among the youngest drivers to prevent crashes during their early driving careers can translate into a reduced crash risk over their lifetime. The problem of aggression in traffic can be solved only by analyzing the causes of the aggressive behaviors, in order to reduce their occurrence and to develop efficient programs for informational intervention.

Anger is an emotional attitudinal element with the nature to maintain aggressiveness. Anger in the context of driving, is on one hand, a source of insecurity and of an aggressive traffic, being, on the other hand, a consequence of a society that encourages aggression in all its forms and mirrored perfectly on the traffic (Gatej, Rizeanu, Ursachi, 2017).

Received at: 15.09.2019, Accepted for publication on: 21.09.2019

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CROSS-CULTURAL STUDY OF COPING BEHAVIOR PATTERNS IN THE UNIVERSITY YOUTH

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Abstract

The purpose of this cross-cultural study was to examine characteristics of coping strategies in the samples of Egyptian Muslims (N=147); Egyptian Christians (N=68), and Ukrainian Christians (N=109). The study determined a weighted impact of ethnic and religious components of subject's identity on the coping behavior displayed in a stressful academic environment. Specific differences in coping strategies were identified in Egyptian Muslims, Egyptian Christians, and Ukrainian Christians. The empirical data were obtained using the 'SACS' and 'COPE' questionnaires. It was found out that the ethnic identity factor played a more significant role in predicting coping behavior of individuals of different ethnic-religious identities. In a particular stressful situation, a specific hierarchical coping pattern developed correlating with a person's ethnic identity and relying on a set of certain coping adaptive processes and coping families. Ambiguity of categorization of Ukrainian Christians and Egyptian Christians into an individualistic culture was emphasized.

Keywords: *coping pattern, ethnic-religious identity, coping strategies, coping families.*

1. INTRODUCTION

The impressive number of studies on stress and coping in the last two and a half decades has not resulted in either a unitary theoretical approach to coping or framework of categorizing coping. In particular, there is no consensus among researchers on conceptualizing and measuring the central constructs of coping behaviour, namely, coping strategies. As Vasylenko (2017) noted, almost every new researcher of coping suggests his or her own classification of coping strategies. Besides, a conventional division of coping strategies into the three dichotomies – problem-focused versus emotion-focused coping, problem-solving versus avoidance, and cognitive versus behavioural coping - is rather insufficient,

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mainly because it is difficult to organize such coping strategies against adaptive processes (Folkman & Lazarus, 1980; Frydenberg, 2003; Haslam & Reicher, 2006; Shirazi, Khan & Khan, 2011; Skinner, Edge, Altman, & Sherwood, 2003; Skinner & Zimmer-Gembeck, 2016). The above inevitably affects consistency of existing cross-cultural research hindering understanding of coping behaviour in general, and factors that influence it in particular.

In an attempt to contribute to unifying the research on coping, including cross-cultural research, this study employed the hierarchical model of coping substantiated by Skinner, Edge, Altman, and Sherwood (2003). The hierarchical model specified is built around 3 adaptive processes and consists of 12 families of coping as response to stress. Each coping family includes coping instances and coping strategies. In the model above, instances are placed at the lowest level of the hierarchy and include numerous on-the fly acts that people do in a specific stressful event; while basic adaptive processes that mediate responses to stress and its physiological, psychological and interpersonal effects are at the highest level (Skinner, Edge, Altman, & Sherwood, 2003; Skinner, Pitzer & Steele, 2013). The main idea behind such a coping structure is to conceptually combine coping instances and adaptation processes to fill the gap between numerous personalized and conceptually related coping instances, strategies and functions of the latter in response to a stressful situation (Skinner, Edge, Altman & Sherwood, 2003). Analysis of some most common questionnaires measuring coping strategies; namely: the Strategic Approach to Coping Scale ('SACS') (Hobfoll, Dunahoo & Monnier, 1994) / 'SPSS' (Vodopianova & Starchenkova, 2001) and Coping Orientations to the Problems Experienced ('COPE') (Carver, Scheier & Weintraub, 1989), allowed classifying the coping strategies designated around the higher order adaptive processes in the hierarchical model proposed (Table 1).

Table 1 – Classification of coping strategies measured with 'SACS' / 'SPSS' and 'COPE'

Adaptive process	Family of coping	Coping strategy measured by COPE/SACS
Coordinating actions and contingencies to enhance effectiveness in achieving certain results and preventing undesired consequences.	Problem-solving	'Active Approach' (COPE), 'Suppression of concurrent activities' (COPE); 'Assertive Action' (SACS), 'Cautious Action' (SACS)
	Information Seeking	'Planning' (COPE), 'Use of Social-instrumental Support' (COPE), 'Social Joining' (SACS).
	Helplessness	'Behavioural Disengagement' (COPE).
	Escape	'Denial' (COPE), 'Avoidance'

		(SACS).
Coordinating reliance and social resources available to evaluate available social resources	Support Seeking	‘Use of Social-emotional Support’ (COPE), ‘Religious Coping’ (COPE) ‘Seeking Social Support’ (SACS).
	Self-reliance	-
	Delegation	‘Indirect Action’ (SACS)
	Isolation	-
Coordinating preferences and available options to allow flexible and autonomous adjustment to a stressful situation.	Accommodation	‘Positive Interpretation and Growth’ (COPE), ‘Mental Disengagement’ (COPE),
	Negotiation	‘Restraint’ (COPE).
	Submission	‘Acceptance’ (COPE).
	Opposition	‘Antisocial Action’ (SACS), ‘Aggressive Action’ (SACS), ‘Instinctive Action’ (SACS)

This cross-cultural study used the above classification for describing coping behaviour of subjects with different ethnic-religious identities.

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

The aim of the present paper was to examine specific differences in coping strategies in the samples of Egyptian Muslims, Egyptian Christians, and Ukrainian Christians. Another objective was to study a weighted impact of ethnic and religious components of subject’s identity on the coping behaviour displayed in a stressful academic environment.

2.2. HYPOTHESES

It was assumed that there is relationship between an individual’s ethnic-religious identity and his or her coping behavior. It was also expected that the ethnic and religious components of the identity would have an unequal impact on the strategies a person chooses to cope with a stressful situation.

3. METHOD

3.1. INSTRUMENTS

The following instruments were used: the Strategic Approach to Coping Scale ('SACS') questionnaire (Hobfoll, Dunahoo & Monnier, 1994) on the Egyptian subjects /'SPSS' (Vodopianova & Starchenkova, 2001) on the Ukrainian subjects; Coping Orientations to Problems Experienced ('COPE') questionnaire (Carver, Scheier & Weintraub, 1989). Methods of statistical analysis were performed using IBM SPSS-23.

3.2. SUBJECTS

Students and young educators of two ethnic groups – Ukrainian and Egyptian - were selected for this cross-cultural study. The subjects were characterized with similar social status, age, gender and occupation. The Ukrainian sample consisted of youth aged 19-25 (N = 109), including 63 girls and 46 boys, who were students of 2 universities in the city of Lviv and Kyiv. The Egyptian sample included students and young educators of a private university in Cairo. The Egyptian sample (N = 216) had two subgroups: Muslims and Christians, including 139 women and 76 men, 147 Sunni Muslims and 68 Coptic Christians. The subjects' age varied from 18 to 30 years old.

An important consideration influencing the choice of both the Ukrainian and Egyptian samples was their strong sense of national identity, as well as a self-reported affiliation with a certain religion.

It should be noted that while Egyptian Muslims can traditionally be referred to a group with a collectivist pattern of behaviour, categorization of both the Ukrainian Christians and the Egyptian Christians is not straightforward. Although Ukrainians belong to the European cultural space, their cultural and ethnic identity predetermines a somewhat different pattern of behaviour, compared to Western Europeans. Hence, it is unclear if the attribution of the Ukrainian sample to the individualistic culture traditionally associated with Western Europeans is justified (Meizhys & Pochebut, 2008). Similarly, Egyptian Christians belong to the Eastern collectivist culture, but Christianity is usually associated with the individualism. The considerations above were also tested in the study under discussion.

4. RESULTS

4.1. COPING STRATEGIES MEASURED WITH 'SACS'/'SPSS'

Initially, data obtained with 'SACS'/'SPSS' questionnaire measuring coping strategies were statistically analysed. Independent Samples T-test revealed no statistically significant differences in coping strategies measured with 'SACS' between (1) Muslims and (2) Christians in the Egyptian sample. Therefore, an

analysis of coping strategies for the ethnic group of (1) Egyptians as a whole and (2) Ukrainians was carried out.

In the Egyptian sample, the highest scores were obtained for the 'Assertive Actions' coping strategy ($M = 30.913$). In addition, Egyptians often sought 'Social Support', which was a manifestation of a prosocial coping strategy ($M = 24.046$). This coping strategy was the second most commonly used by the Egyptians of both religious identities. In addition, Egyptians often displayed a direct coping strategy of 'Instinctive Action' ($M = 20.579$). The least employed strategy among Egyptians was the coping strategy of 'Indirect Action' ($M = 12.454$) and 'Antisocial Action' ($M = 12.439$).

Ukrainians showed a tendency to resort to coping in the person-to-person system in the direction of the prosocial coping strategy with the highest score on the scale of "Seeking Social Support" ($M = 22.595$) and 'Social Joining' ($M = 21.404$). The result above was somewhat unexpected for the researcher, since it had been assumed that in the dichotomy of collectivism-individualism, Ukrainians were closer to individualism. Ukrainians also often resorted to passive coping behaviour on the 'Cautious Action' scale ($M = 19.238$). On the other hand, they were least likely to exhibit 'Instinctive Action' coping strategy ($M = 10.857$). It is noticeable that, as opposed to the Egyptians of both religious identities who obtained high scores on the scale of 'Assertive Action' ($M = 29.956$ for Muslims and $M = 29.764$ for Christians), Ukrainians resorted to the 'Assertive Action' coping strategy less ($M = 18.571$).

Another unforeseen result was relatively low scores in prosocial coping behaviour on the 'Social Joining' scale in Egyptians ($M = 16.879$ in Muslims and $M = 18.411$ in Christians), as opposed to the Ukrainian sample, whose values on this scale were within $M = 21.404$. In addition, Ukrainians showed a significantly higher score in the 'Aggressive Action' scale compared to a low value obtained for Egyptians of both identities ($M = 13.810$ for Muslims and $M = 14.147$ for Christians). Ukrainians were less likely to use direct impulsive coping strategies of 'Instinctive Action' ($M = 10.857$), in contrast to Egyptians, for whom this coping strategy was one of the three most commonly used ($M = 20.818$ in Muslims and $M = 19.764$ in Christians).

Thus, Egyptians resorted to the coping strategies of (1) 'Assertive Action', (2) 'Seeking Social Support', and (3) 'Instinctive Action'; while Ukrainians preferred the coping strategies of (1) 'Seeking Social Support', (2) 'Social Joining', and (3) 'Cautious Action'.

4.2. COPING STRATEGIES MEASURED WITH 'COPE'

Subsequently, Independent Samples T-test was performed to assess inter-group differences in coping strategies measured with the 'COPE' questionnaire

between the ethnic groups of (1) Ukrainians and (2) Egyptians. As a result, (1) Egyptians and (2) Ukrainians showed statistically significant differences in the four coping strategies; namely, ‘Mental Disengagement’, ‘Religious Coping’, ‘Restraint-coping’, and ‘Substance Use’ (Table 2).

Table 2 - Differences in coping behaviour in (1) Ukrainians and (2) Egyptians

Coping Strategies	F	Sig.	t	df.	Sig. (2-tailed)
Mental Disengagement	3.316	.040	2.012	191	.046
			1.800	59.016	.077
Religious Coping	16.538	.000	11.450	191	.000
			9.273	53.472	.000
Restraint-coping	4.985	.027	2.172	191	.031
			2.489	85.557	.015
Substance Use	5.694	.018	-2.070	191	.040
			-1.814	57.713	.075

Afterwards, the coping strategies measured with ‘COPE’ were analysed. First, intergroup differences for subjects of different ethnic and religious groups – (1) Ukrainians versus (2) Egyptians and (3) Egyptian Christians versus (4) Egyptian Muslims - were visually identified using regression plot graphs. Second, univariate ANOVA regression analysis was performed for each ‘COPE’ scale. A correlation was found between the ethnic identity and the coping strategy of ‘Active Coping’ ($r = .144$; $F = 4.019$; $p \leq .05$), which revealed a trend-level statistical significance.

Relationship between the religious identity and ‘Religious Coping’ was identified ($r = .396$; $F = 35.456$; $p \leq .01$), indicating a moderate correlation. In the boxplot of the mean ‘Religious Coping’ values for the samples with different religious identities, it was visually evident that (2) Christians of both ethnic identities showed a wider scatter of values on the ‘Religious Coping’ scale, compared to the group of (1) Muslims. However, it was suggested that an unusually wide range of “Religious Coping” values in the group of (2) Christians might be an indication that the more significant factor associated with ‘Religious Coping’ was not, in fact, religion, but the ethnic identity. As predicted, Independent Samples T-test for the groups of Egyptian Christians and Egyptian Muslims revealed lack of statistically significant differences on the ‘Religious Coping’ scale.

A univariate regression analysis identified a trend-level correlation between the ethnic identity and the following coping strategies:

- ‘Restraint-coping’ ($r = .155$; $F = 4.716$; $p \leq .05$);
- ‘Use of Social-emotional Support’ addressing an appeal to emotional social support ($r = .184$; $F = 6.681$; $p \leq 0.01$);
- ‘Substance Use’ ($r = 0.148$; $F = 4.287$; $p \leq .05$);

- 'Planning' ($r=.149$; $F = 4,318$; $p \leq .01$).

Analysis of relationship between the religious identity and the coping strategy of 'Substance Use' in the Egyptian sample showed a correlation between the religious identity and variables obtained for the 'Substance Use' scale ($r= .148$; $F = 10.299$; $p \leq .01$). This may be logically explained by the religious prohibition on alcohol consumption for Muslims.

Finally, the mean values of coping strategies determined with 'COPE' were compared between the groups of (1) Muslims and (2) Christians for both Ukrainian and Egyptian samples using Independent Samples T-test. It revealed no statistically significant differences in coping strategies between the groups selected, which suggests that Egyptian Muslims and Egyptian Christians exhibit similar coping behaviour. In the sample of Ukrainians, the most employed coping strategies included 'Planning' ($M = 12.930$), followed by the 'Positive Interpretation and Growth' ($M = 12.767$) with almost the same value as in the sample of Egyptians ($M = 12.780$). The third most used coping strategy was 'Active Coping' ($M = 12.372$). The least preferred among Ukrainians was the 'Substance Use' coping strategy ($M = 6.326$). It is also worth noting that 'Religious Coping' in the sample of Ukrainians was among the least used coping strategies. It allows assuming that religious coping is not a dominant behaviour in societies where a religious identity is formed spontaneously, which needs further investigation. In the Egyptian sample, the most commonly used coping strategies were 'Religious Coping' ($M = 13.587$), 'Positive Interpretation and Growth' ($M = 12.780$), 'Planning' ($M = 12.093$), and "Use of Social-instrumental Support" ($M = 11.980$). The least preferred coping strategies among Egyptians of both religious identities was 'Substance Use' ($M = 5.313$). The dominant 'Religious Coping' behaviour in the Egyptian sample can be explained by the fact that in the Egyptian society, religious practices are formally taught, where they become a lifestyle, habitual and natural.

Therefore, it can be argued that the hypothesis of differences in the coping behaviour in people with different ethno-religious identities has been confirmed. In this case, the sample has shown differences, depending on the ethnic factor.

4.3. DISCUSSION

It is possible to conclude that there is relationship between coping behaviour and an individual's ethnic identity. Correlating the coping strategies with the hierarchical model of coping in (1) Egyptians and (2) Ukrainians in a stressful learning situation made it possible to provide a generalized assessment of the patterns of coping behaviour of subjects. Table 4 shows that (1) Egyptians underwent three adaptive processes in situations of academic-related stress: 'Coordinating actions and contingencies', 'Coordinating reliance and social

resources available' and 'Coordinating preferences and available options' with most coping strategies related to the coping families of 'Problem-solving', 'Support seeking', 'Accommodation', and 'Opposition'. (2) Ukrainians focus more on the adaptive process of 'Coordinating actions and Contingency' involving two coping families; namely: 'Problem-solving' (coping strategies of 'Active Approach' and 'Cautious Action') and 'Information Seeking' (coping strategies of 'Planning' and 'Social Joining'). In the (1) Egyptians and (2) Ukrainians, the adaptive process of 'Coordinating reliance and social resources available' is presented by only one family; namely, 'Support Seeking' ('Seeking Social Support' and 'Religious Coping' in Egyptians; 'Seeking Social Support' and 'Use of Social-emotional Support' in Ukrainians). Besides, (1) Egyptians and (2) Ukrainians underwent the adaptive process of 'Coordinating preferences and available options', which was presented in the Ukrainian sample by the 'Accommodation' coping family (coping strategy of 'Positive Interpretation and Growth'); and in the Egyptian sample – by the 'Accommodation' coping family ('Positive Interpretation and Growth' coping strategy) and the 'Opposition' coping family ('Instinctive Action' coping strategy).

Table 4 – Coping behaviour patterns in (1) Egyptians and (2) Ukrainians

Coping behaviour hierarchical pattern		Coping strategies (COPE / SCAS)	
Adaptive process	Family of coping	in Egyptians	in Ukrainians
Coordinating actions and contingencies	Problem-solving	'Assertive Action'	'Active Approach'; 'Cautious Action'
	Information seeking	'Planning'	'Planning'; 'Social Joining'
Coordinating reliance and social resources available	Support seeking	'Seeking Social Support'; 'Religious Coping'	Seeking Social Support; 'Use of Social-emotional Support'
Coordinating preferences and available options	Accommodation	'Positive Interpretation and Growth';	'Positive Interpretation and Growth'
	Opposition	'Instinctive Action'	

An interesting conclusion can be derived from the above: (1) Egyptians and (2) Ukrainians revealed coping behaviour that was subject to all the three adaptive processes. In addition, the Egyptians and Ukrainians unexpectedly used almost the same coping families, namely 'Problem-solving', 'Information Seeking', 'Support Seeking', and 'Accommodation' (with the additional coping family of 'Opposition'

employed by Egyptians). On the other hand, Egyptians and Ukrainians preferred slightly different coping strategies within the coping families designated. Thus, the Egyptian sample demonstrated the following hierarchical pattern of coping (from the most used to the least): ‘Support Seeking’ – ‘Problem-solving’ – ‘Opposition’ – ‘Accommodation’ – ‘Information Seeking’. The Ukrainian sample resorted to (from the most used to the least) ‘Information Seeking’ – ‘Accommodation’ – ‘Support Seeking’ – ‘Problem-solving’. Thus, on the one hand, it can be assumed that in similar stressful situations, individuals with the same ethnic identity would employ the set of similar coping families. However, it is possible to claim that in a particular stressful situation, a specific hierarchical pattern of adaptive processes and coping families develops depending on the person’s ethnic identity, which, in its turn, shapes a pattern of coping behaviour.

Also, in line with the idea of Bailey and Dua (1999) and Fischer et al. (2010), who theoretically proposed to divide all coping families into the individualistic (intra-personal) and collectivist (interpersonal) adaptive strategies, a tendency was evident in the group of (1) Egyptians to engage more collectivist adaptive strategies, compared to (2) Ukrainians who demonstrated more individualistic adaptive strategies. At the same time, it was obvious that (2) Ukrainians should not be unequivocally attributed to the individualistic identity, since one of the dominant coping strategies in the sample of Ukrainians were ‘Seeking Social Support’ and ‘Social Joining, as well as ‘Use of social-emotional Support’. Besides, it was inappropriate to unambiguously refer Christians to the individualistic religious identity, since the Egyptian Christians and Egyptian Muslims exhibited no differences in their coping behaviour (except for the ‘Substance Use’ coping strategy, which was more used by the Egyptian Christians). This can be explained with the interference and interplay between the two religious identities in one cultural space.

5. CONCLUSIONS

It has been found out that youth with different ethnic-religious identities develop different patterns of coping behaviour. At the same time, the component of ethnicity in the ethno-religious identity plays a more significant predictive role as to what kind of coping behaviour pattern a person will choose in similar stressful situations. Specific differences in coping strategies have been identified in the samples of Egyptian Muslims, Egyptian Christians, and Ukrainian Christians.

In addition, a more formal character of religious identity development in the Egyptian sample of both religious identities (Muslims and Christians), in which formal religious education and upbringing begins from childhood and continues throughout adulthood, suggests that Egyptians are formally trained to resort to religious coping. This implies that coping strategies can- and should be learnt in order to develop more effective models of stress response. This finding can be used

in further studies of coping behaviour and psychotherapeutic interventions to correct coping behaviour in educational settings.

While the findings of this study suggest the evident role of ethnic identity in predicting coping behaviour of individuals, a number of limitations should be considered when interpreting these results. First, the choice of the instruments measuring coping strategies in this study, although substantiated, is rather random. It means that use of other questionnaires and methods may lead to different pattern of coping strategies. Second, the ethnic identity predictive role determined in this study does not allow establishing any causality, yet. Further cross-cultural studies may consider a broader design to study coping behaviour patterns of individuals of a certain ethnic-religious identity in various stressful situations to investigate if the pattern changes depending on a stressful situation or remains similar in various contexts of moderate stress.

Received at: 17.09.2019, Accepted for publication on: 23.09.2019

ACKNOWLEDGEMENT

The research was done with the support of Misr International University (Cairo) and G.S. Kostiuk Institute of Psychology of the National Academy of Pedagogical Sciences of Ukraine.

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THE EFFECTS OF COMMUNICATION BY INTERACTIVE ROAD SIGNALING ON BEHAVIOR WHILE DRIVING

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Abstract

In this study was analyzed the effect of communication by interactive road signaling on the behavior of the drivers. A study published in 2013 by Scott & Parker, obtained the results that high reward-sensitivity drivers are considered to be risky drivers, as they report higher risky driving behavior and are likely to infringe traffic rules. This two factor theory based on punishment and reward was revealed by neurophysiological studies that discovered a pleasure center in the brain. Starting from Mowrer's theory came the claim that reward and punishment are different processes that express an emotion that can serve as internal motivators of behavior. A road signal that is showing the speed and give a "smiley" feedback was used as a reward for the drivers that did not violated the speed limit and a road signal that is showing the speed and give a "sad face" was used as a punishment for the drivers that violated the speed limit. The results of this study is that the mean of the speed measured shown with the presence of message is reducing the risk of big speed violations (54.85km/h) compared with the hidden condition that is showing a mean of speeds of 67.73km/H.

Keywords: *inforcement, road signaling, communication, traffic safety campaigns*

1. INTRODUCTION

Research on automotive user interfaces has for a long time focussed on how to optimize user experience and minimize distracting effects for the driver (Kun, Paek, Medenica, Memarovi'c & Palinko, 2009). Approaches to this fundamental need for road safety (Tchankue, Wesson & Vogts, 2011) have been developed along with the technical possibilities in cars. Today, researchers of automotive human-machine interaction aim for a natural experience with different communication channels of persuasive and inforcement (Meschtscherjakov, Wilfinger, Scherndl & Tscheligi, 2009). Such systems can improve the safety of

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traffic participants by observing driving performance and to influence the driving style and to regulate speeding. Other systems monitor and react to the driver's emotional state in order to keep them safe (Nass, Jonsson, Harris & al, 2005) as driving performance can be influenced by positive or negative emotions (Jeon, Yim & Walker, 2011).

This study applied reinforcement sensitivity theory (RST, specifically reward sensitivity and punishment sensitivity) to explore drivers perceived risk and self-reported risky driving engagement, while accounting for potential influences of age, sex and driving experience.

According to a study published in 2011, cognitive process that can lead to risky driving involves perceiving and recognising a risk, to estimate the level of risk (probability of negative consequence) and a willingness to accept the risk level for the behavior (McKenna & Horswill, 2006; Nordfjærn, Jørgensen & Rundmo, 2011).

High reward-sensitivity drivers are considered to be risky drivers (Scott-Parker et al., 2013), as they report higher risky driving (Constantinou et al., 2011; Harbeck & Glendon, 2013), and are likely to infringe traffic rules (Castellà & Pérez, 2004). Additionally, the sex effect studied by Begg & Langley, that led to the valid hypothesis that males report higher reward sensitivity and male drivers have been found to engage at higher rate over a broader range of risky driving behaviors when compared with females (Begg & Langley, 2001; Boyce & Geller, 2001).

Reinforcement learning algorithms have been some of the most influential theories in neuroscience for behavioral learning that is dependent on reward and penalty, correlated with positive or negative emotions (Seo & Lee, 2017).

The definition of the reinforcement learning is where a system, or agent, tries to maximize some measure of reward while interacting with a dynamic environment. If an action is followed by an increase in the reward, then the system increases the tendency to produce that action (Braun, Pflöging & Alt, 2018).

In one of the studies of Mowrer, he argued that the learning process is composed of two other processes. The first process is associative (Pavlovian) conditioning and the second in the instrumental learning. In addition, Mowrer also concluded that the effects of reward/punishment had different behavioral effects as well as different underlying bases emotion was introduced in this learning account by Mowrer's theory that such states played the role of the internal motivator of behavior (Lovibond et al., 2009). This two-factor (punishment/reward) theory was supported by neurophysiological findings (Braun, Pflöging & Alt, 2018), the discovery of the 'pleasure centres' in the brain (Delgado et al., 2009). Starting from Mowrer's theory came the claim that reward and punishment are different processes and different states of emotion serve as internal motivators of behavior.

The negative relationship between perceived risk and reported risky driving was consistent with other research (Harbeck & Glendon, 2013; Machin & Sankey, 2008; Rhodes & Pivik, 2011) and was the strongest relationship within the model. Research confirming successful behavior change through application of rewards might assist in creating more targeted intervention programs for this high-risk group. The intervention based on integrating emotions, by being aware of the emotion and stop the destructive behavior seems to be more effective (Rizeanu, Gatej, Ciolacu, 2017).

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

The objective of this study is to reveal the importance of safety communication process among city drivers. Many times the information given about their speed could work as an enforcement factor. Being present on road as a social moderator between law and those who must obey traffic rules is most of the times the job of those who have to build communication on road and to sustain campaigns visible by those who are using the road.

2.2. HYPOTHESES

We presume that a road signal that is showing the speed and give a “smiley” feedback (DataCollect®) will work as a law enforcement factor and moderate the speed variable.

We presume that being present on road with a mobile laboratory that is part of a communication campaign and signaled on road will reduce the number of traffic rules violation.

3. METHOD

To test the hypothesis we have measured speed and number of violations on a city road using DataCollect® and DigitalAlly® equipments. We have measured these parameters in two experimental conditions: using the presence of a mobile laboratory signaled on road and the same laboratory in a “hidden” condition.

4. RESULTS

The results are showing significant differences between the two experimental conditions: the mean of the speed measured shown that with the presence of

message is reducing the risk of big speed violations (54.85km/h) compared with the hidden condition that is showing a mean of speeds of 67.73km/H.

Table1 - Descriptive statistics

Group Statistics					
	SAMPLE	N	Mean	Std. Deviation	Std. Error Mean
SPEED	1.00	100	54.8500	4.82706	.48271
	2.00	100	67.7300	9.57042	.95704

Table 2- Independent Samples t Test

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SPEED	Equal variances assumed	50.004	.000	-12.016	198	.000	12.88000	1.07188	14.99377	10.76623
	Equal variances not assumed			-12.016	146.308	.000	12.88000	1.07188	14.99838	10.76162

Based on the results shown above, the research hypothesis that assumes significant differences between subjects that have seen a road side communication regarding their speed and those who didn't received any message is accepted for a sample of 100 subjects. Results on driving behavior regarding speed were significantly different between the two samples ($M_1 = 54.85$, $M_2 = 67.73$, $t = 12.01$, $p < 0.05$). Data revealed by the table above accept the existence of significant differences between the two samples.

Table 3 - Descriptive statistics

Group Statistics					
	SAMPLE	N	Mean	Std. Deviation	Std. Error Mean
VIOLATIONS	1.00	100	1.6000	.79137	.07914
	2.00	100	4.6200	1.20420	.12042

Table 4- Independent Samples t Test

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
				F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
										Lower
VIOLATIONS	Equal variances assumed	17.304	.000	-20.958	198	.000	-3.02000	.14410	-3.30416	-2.73584

	Equal varian ces not assum ed			- 20.9 58	171.0 69	.000	- 3.02000	.14410	- 3.304 44	- 2.735 56
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Based on the results shown above, the research hypothesis that assumes significant differences between subjects that have seen a road side communication regarding their rule violation behavior and those who didn't received any message that they are under observation of a mobile laboratory is accepted for a sample of 100 subjects. Results on driving behavior regarding rule violation were significantly different between the two samples ($M_1 = 1.60$, $M_2 = 4.60$, $t = 20.95$, $p < 0.05$). Data revealed by the table above accept the existence of significant differences between the two samples.

5. CONCLUSIONS

The communication campaigns that aimed to improve road safety are still the exception rather than the rule. Because of this, interactive campaigns and interactive communication techniques should be allowed to be utilized without question, because of new methods of behavior modification. This study, based on the theory of reward and punishment, used a road signal that is showing the speed and give a "smiley" feedback was used for the drivers that did not violated the speed limit and a road signal that is showing the speed and give a "sad face" was used as for the drivers that violated the speed limit. The results of the study are that there are significant differences between subjects that have seen a road side communication regarding their speed and then the inforcement modify the driving behavior.

Received at: 15.09.2019, Accepted for publication on: 30.09.2019

ACKNOWLEDGMENT

Special thanks to Danubius University for the opportunity to use Traffic Safety Laboratory and special thanks also to Safety Camera System being represented by Mr. Sandu Buglea who provided the Datacollect® equipment.

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INVESTIGATING THE PERCEIVED NEED FOR REST AS MODERATOR IN THE RELATIONSHIP BETWEEN USING VARIOUS COPING MECHANISMS AND BURNOUT

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Abstract

The current study aims to investigate the moderation effect of the perceived need for rest in the relationship between coping mechanisms and burnout in case of N=119 employees from various industries, in Romania. The results of 2 separate stepwise multiple regression analyses showed that employees preferring mostly passive coping mechanisms when confronted with a stressful situation at work are more prone to develop burnout symptoms when the need to rest is moderating this relationship, comparing with the employees investing active coping mechanisms and still having express their need to rest that are not prone to experience burnout. Results and discussions are presented along with potential implication for the organizational life.

Keywords: *Need to rest, Coping Mechanisms, Burnout, Full-Time Employees.*

1. INTRODUCTION

Two of the most important actions of the companies' strategic business priorities are to reduce costs and to retain their talent. This is in itself a difficult assignment, since, according to Talent 2020, a Deloitte report "Surveying the Talent Paradox from the Employee Perspective", 47% of the Europe, Middle East and Africa (EMEA) region employees reported that morale has decreased or significantly decreased over the past years, whereas employee morale has been

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declining as Europe struggles with debt crises, the future of the euro, and increased borrowing costs (Kwan et al., 2012). Low morale is directly connected with greater layoffs (54% in EMEA comparing with 32% in the Americas and 38% in Asia Pacific region), that result in higher job loadings and higher proneness to experience burnout.

There is an increase of research interest around predictors and results of burnout, as one of the most negative organizational outcome, resulting in high absenteeism rates (Schaufeli, Bakker & Van Rhenen, 2009), low citizenship behaviour and poor job performance (Cropanzano & Byrne, 2003; Parker & Kulik, 1995), high intention to leave and low job satisfaction (Himle, Jayaratne & Thyness, 1986; Jayaratne & Chess, 1984; Abu-Bader, 2000), loss of productivity and efficiency (Maslach & Jackson, 1981; Schaufeli 2003).

Still, the relationship between need for sleep and rest as perceived by individuals with various coping mechanisms with burnout was less investigated. As the lack of rest for a long time can lead to physical and mental disorders, especially for people with a fragile emotional balance, we found the study of this triad to be extremely important.

The current study investigates this relationship between the three variables (namely coping mechanisms, burnout and the need for rest). We explain the manner in which employees investing the preferred coping mechanisms succeed in fighting burnout as a function of the perceived level of the need for rest.

1.1. STRESS, COPING MECHANISMS AND BURNOUT

When a person claims to “get stressed”, says they feel the consequences of stressors. When it comes to considering certain “stressful” situations, in a certain moment, situational requirements may exceed our resources that help us manage the situation perceived as stressful or threatening. Individual resources were classified into: physical (i.e. financial) and psychic (such as lack of patience with others) (Scott, 2017).

Stressful situations are perceived in various ways, from extremely intense to highly non-invasive, as a function of some aspects related to individual differences and the environment. Lazarus (1991) discusses about stress as a process that implies a transaction between the individual and its working environment. Also, he introduces the distinction between stressors (stressful events as predictors), the cognitive evaluation of these events (that can be perceived as a threat) and the coping mechanisms, namely the individual resources that help the person manage the stressful situations.

The strength and maturity in managing stressful situations can predict the quality of sleep and the need for a person to rest. We understand by maturity in managing stressful situations, the collected and selected experienced coping mechanisms that would result in a preferred coping style (Lazarus & Folkman,

1984). In the case of people with mental disorders, there is an increased tendency towards anxiety, worries and sadness that they experience over a day, they will have a less restful sleep than people who had peace of mind and joy (Iamandescu, 2005).

Burnout is a measure of exhaustion and mental stress that is caused by demands and professional tasks that go beyond the personal or organizational resources that a person has at their disposal. This syndrome of emotional exhaustion, depersonalization (or, as later defined by researchers, cynicism, a concept that includes more than detachment, posting) and professional inefficiency reaches its peak when it is no longer effective for work. A wide range of professions involve a lot of human interaction, often doctors, assistants and educators are experiencing burnout syndrome (Fares et al., 2016; Schaufeli, 2003). Emotional reactions, such as burnout, occur when the perceived threats cannot be managed with the available or preferred individual resources, namely coping mechanisms.

Coping is a regulatory process that can reduce the negative feelings of stressful events. Indeed, coping is a dynamic process that fluctuates over time, in response to requirements and appreciations in situational changes.

The coping mechanisms were clustered in various ways. There are authors that discuss about three main styles of coping: problem-centered coping, emotion-centered coping and avoidance coping (Afshar et al., 2015). Other authors depict two dimensions: a “passive” or emotion-focused coping strategy and an “active”, cognitive and interpersonal coping strategy in which efforts were made to do something actively in order to alleviate the problem causing the distress (Sørli & Sexton, 2001). For the current study, we are going to consider this last classification since it serves better to our research objectives.

1.2. NEED FOR REST

Fatigue can be defined as “a loss or a temporary reduction of mental or physical resources, determined by wear or failure to recover after effort” (Popa, 2008).

Primary insomnia is the most common and owing to psycho-stressful situations. This is described as a difficulty in initiating or maintaining sleep at least three times a week for one month. It affects the socio-professional activity and produces a mental discomfort. The effects of psychological stress are manifested primarily in people with a specific psychological condition, namely, a hereditary or traumatic predisposition, where behavioral dysfunctions are observed (Iamandescu, 2005).

There are several industries (such as healthcare), where employees have to experience occasional sleep loss (Barger et al., 2005). Still, not only those employees could be also exposed to acute stress (Dias & Scalabrini Neto, 2017). Authors point out that the combination of sleep deprivation and acute stress may be particularly detrimental and can possibly lead to a less adaptive stress response (Schwarz et al., 2018).

Some authors consider that sleep deprivation causes increased activation in brain centers involved in stress and emotional regulation (Yoo et al., 2007). Still, other authors found that sleep deprivation did not significantly moderate the response pattern for any of the outcome measures (Schwarz et. al., 2018).

In the current study, we seek to investigate whether the perceived need for rest moderates the relationship between the coping mechanisms and burnout.

2. STUDY OBJECTIVES AND HYPOTESIS

2.1. OBJECTIVES

Building on the assumption of the current literature in the field of stress, coping mechanisms, burnout and the need for rest, the present study aims to investigate whether the perceived need for rest moderates the relationship between the coping mechanisms and burnout

Therefore, we would determine the perceived need for sleep (NFS) contribution on each of the two dimensions of coping mechanism: passive coping mechanisms (PCM) and active coping mechanism (ACM) on the outset and experience of burnout.

2.2. HYPOTHESES

Taking into account the above theoretical considerations we formulate the following hypotheses:

Hypothesis 1: The ACM would be negatively correlated with burnout.

Hypothesis 2: The PCM would be positively correlated with burnout.

Hypothesis 3: NFS will moderate the relationship between ACM and burnout.

Hypothesis 4: NFS will moderate the relationship between PCM and burnout.

3. THE METHOD

3.1. PARTICIPANTS

The present study used a total of 119 people from Romania (47.1% women; age between 18 and 50 years old), from ten industry sectors. The data were collected among. The respondents have completed an online survey, using a virtual testing platform. The recruitment and inclusion of the online subjects were made on a voluntary basis, under confidentiality assurance.

3.2. MEASURES

All measures were Romanian versions translated according to recommended testing guidelines (Hambleton, 2005).

Burnout was measured with the Maslach Burnout Inventory (MBI), made by Schaufeli, Leiter, Maslach and Jackson in 1996, containing a total of 16 items ($\alpha =$

.93) in the form of assertions and having as subclasses: Exhaustion with 5 items of the type: “I feel squeezed / squeezed emotionally because of my work” ($\alpha = .86$), Cynism with 5 items like: “I doubt by the significance of my work” ($\alpha = .82$) and the professional inefficiency with 6 items such as “They are not effective in solving the problems that arise in connection with my work” ($\alpha = .86$). Response variants are made on the Likert scale in 7 steps, ranging from (“Never”) to 6 (“Daily”).

The coping mechanisms were measured by the Ways of Coping Questionnaire (Folkman & Lazarus, 1985). The questionnaire has 66 items, grouped in eight subscales, as follows: 1) *Problem-focused coping*, a subscale with 11 items such as “I tried to analyze the problem to understand better” ($\alpha = .80$); 2) *Wishful thinking* a 5 items scale, such as “I hoped that a miracle will happen” ($\alpha = .79$); 3) *Detachment*, a 6 items scale, with items like “I felt that, with time, there will be a difference - the only thing to do was to wait” ($\alpha = .63$); 4) *Seeking social support* with 7 items like: “I spoke with someone to find out more about that specific situation” ($\alpha = .76$); 5) *Focusing on the positive*, a scale with 4 items, such as: “I’ve always tried to see the good part in things” ($\alpha = .56$); 6) *Self-blame*, a 3 items subscale, with items like “I was self-critic towards myself” ($\alpha = .48$), 7) *Tension Reduction*, a scale with 3 items like: “I’ve been away for a while; I tried to rest or take a vacation” ($\alpha = .51$) and 8) *Keep to self* with 3 items like “I tried to hide my emotions”. ($\alpha = .51$). Scoring is done on a 4 point Likert type scale ranging from 0=“I did not use that behavior” to 3=“I used the behavior a lot”.

To obtain the two main sub-scales used in the analysis, we grouped three sub-scales, namely *Wishful thinking*, *Detachment* and *Keep to self* under the scale passive coping mechanisms (PCM) and two other sub-scales, namely *Problem-focused coping* and *Seeking social support*, under the scale active coping mechanism (ACM), according to the cited authors (Sørli & Sexton, 2001).

The need for rest was evaluated through the sub-scale with the same name from the Questionnaire on Experience and Assessment of Work (QEAW, Veldhoven and Meijman, 1994). The Need for Rest subset contains 11 items, with items like: “I think it's difficult to relax at the end of the working day”. Alpha Cronbach calculated for this sub-scale for our sample (N=119) was $\alpha = .83$. A 4-point Likert scale ranging from 1 (“Always”) to 4 (“Never”) was used.

3.3. DATA ANALYSIS

The hypotheses were tested using the SPSS program. Each of the two coping mechanisms dimensions was analyzed separately in correlation with burnout and the need for rest. The correlation matrix is included in Table 2.

The facets of the two coping mechanisms were introduced as predictors in the regression procedure, the Process package, v. 16.3 (Hayes, A.F.), model number 1. The total burnout was considered the outcome and the need for rest was considered the moderator in both cases.

Also, we verified the results by conducted a series of stepwise regression analyses with the two coping mechanisms and need for rest as predictors and the burnout as the criterion variable. To eliminate as much as possible the eventual biases in creating and testing the determined models by using the stepwise method, we analyzed the residual values, we verified the data base to identify the outlier values. All obtained values have met the necessary conditions in order to avoid multicollinearity.

Table 2

Means, Standard Deviations and Intercorrelations of the two coping mechanisms scales, four Burnout dimensions and Need for Rest, N=119

Variables	<i>M</i>	<i>SD</i>	EXH	CYN	RPA	Burnout	Need for rest
1 Active Coping Mechanisms (ACM)	4.15	.91	.01	.07	.01	.03	-.02
6 Pasive Coping Mechanisms (ACM)	5.14	1.51	.45**	.45*	.39**	.46**	.38**

Note. EXH = Exhaustion; CYN = Cynicism; DEP = Depersonalization; RPA = Reduced Professional Accomplishment; * $p < .05$. ** $p < .01$.

4. RESULTS

4.1. DESCRIPTIVE STATISTICS

Table 2 shows (a) the means and standard deviations of the coping mechanisms variables and (b) the correlations of those with between burnout components and burnout as total factor and the perceive need for rest.

4.2. REGRESSION ANALYSES OF NEED FOR REST AND COPING MECHANISMS ON BURNOUT

We predicted relationships between the two forms of coping mechanisms, ACM and PCM will correlated with burnout. In fact, ACM was not significantly correlated with each of the four burnout dimensions. In this way, Hypothesis 1 was not validated. Also, we stated, in Hypothesis 2, that PCM would be positively correlated to burnout. As shown in Table 2, the second hypothesis was validated.

To test Hypotheses 3 and 4, we run the moderation model in the Process Tool and the results shows are shown in the Figure 1 and Figure 2.

Figure 1: Moderation Model for Passive Coping Mechanisms (PCM) and Burnout, moderated by the Need for Rest (NFRest)

Outcome: Burnout Total						
Model Summary						
R	R-sq	MSE	F	df1	df2	p
.7042	.4960	.8427	39.8397	3.0000	115.0000	.0000
Model						
	coeff	se	t	p	LLCI	ULCI
constant	1.5842	.0907	17.4764	.0000	1.4047	1.7638
NFRest	1.1573	.1509	7.6696	.0000	.8584	1.4562
PCM	.2435	.0565	4.3076	.0000	.1315	.3555
Inter.	.2324	.0935	2.4838	.0144	.0471	.4177
Product terms key:						
int_1 PCM X NFRest						
R-square increase due to interaction(s):						
	R2-chng	F	df1	df2	p	
int_1	.0290	6.1694	1.0000	115.0000	.0144	

Figure 2: Moderation Model for Active Coping Mechanisms (ACM) and Burnout, moderated by the Need for Rest (NFRest)

Outcome: Burn_T							
Model Summary							
	R	R-sq	MSE	F	df1	df2	p
	.6423	.4126	.9821	26.2040	3.0000	115.0000	.0000
Model							
	coeff	se	t	p	LLCI	ULCI	
constant	1.6581	.0925	17.9233	.0000	1.4749	1.8414	
NFRest	1.4640	.1715	8.5338	.0000	1.1242	1.8038	
ACM	.0507	.0983	.5157	.6071	-.1440	.2454	
Inter.	.0632	.1745	.3621	.7179	-.2824	.4087	
Product terms key:							
int_1 ACM X NFRest							
R-square increase due to interaction(s):							
	R2-chng	F	df1	df2	p		
int_1	.0007	.1311	1.0000	115.0000	.7179		

Also, we obtained graphical forms for these two moderation models, where the results are displayed in a comprehensive manner (Figure 3 and Figure 4).

Figure 3 – Graphic representation for moderation with PCM as independent variable, Need for Rest as moderator and Burnout as dependent variable

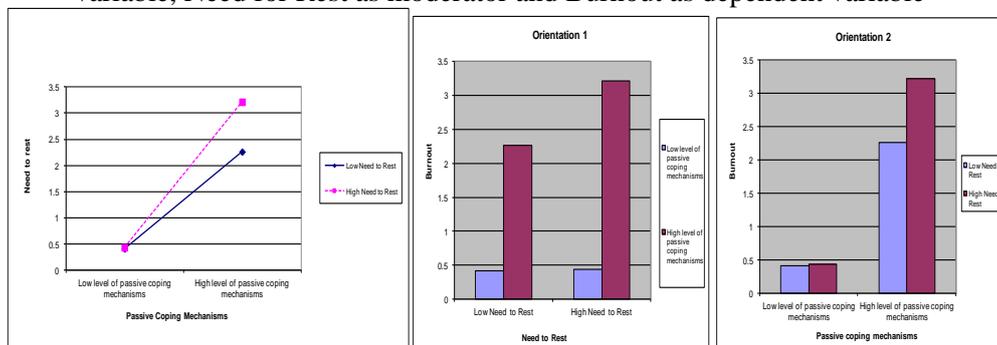
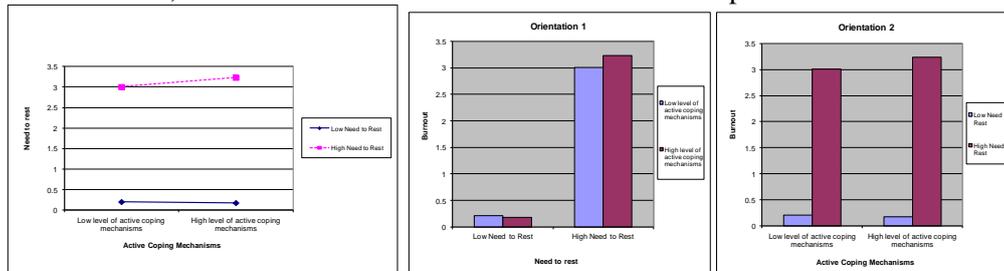


Figure 4 – Graphic representation for moderation with ACM as independent variable, Need for Rest as moderator and Burnout as dependent variable



5. DISCUSSIONS AND CONCLUSIONS

One of the main conclusions of this research is that people that have a passive manner of reacting to stressful situations will experience with or without perceiving the need for rest, burnout. In the model included in Figure 1, is shown that the need for rest moderates the relationship between PCM and burnout ($p < .001$). Also, from the results included in Table 2, we draw the conclusion that all the dimensions of burnout and, also, the need for rest, correlates only and highly significantly with the passive coping mechanisms, whereas no even one of the burnout dimensions or the need for rest do not correlate with ACM.

In other words, irrespective of the people with ACM will not experience burnout, even if they perceive the need for rest. In the model in which ACM as independent variable, Need for Rest as moderator and Burnout as dependent variable (Figure 2), is shown that the interaction is not statistically significant ($p = .7179$).

The results shown also in Figures 3 and 4 are supporting the Hypothesis 3 as well as Hypothesis 4.

In the light of these results, the companies may consider involving their employees in activities and projects as well as career plans that would stimulate their active attitudes, that could prove to be extremely important when managing burnout.

6. LIMITATIONS

One important limitation of the current research is constituted by the lack of comparison with participants from various industries and the lack of control for age and gender. Still, the literature presents mixed opinions in this aspect. We admit that the main limit of this study could be seen in the transversal and not longitudinal design as well as rather limited sample ($N=119$), which do not help in extending our conclusions to a general Romanian population and to have causal inferences.

Received at: 20.09.2019, Accepted for publication on: 30.09.2019

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