

## INTERRELATION OF REFLEXIVITY, MINDFULNESS AND HARDINESS AMONG FIRST-SEMESTER STUDENTS

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**Abstract:** Change of educational and living environment is the most significant change in the life of the first-semester students. There are negative tendencies found in several researches carried out in Latvia, Lithuania, the USA, Russia, they are related to well-being, mental and physical health of the first-semester students. The authors of the research continue their study of interrelation of hardiness and other psychological issues, which was started in 2012 within the selection of the first-semester students, assessing correlation of hardiness, mindfulness, and reflexivity. There were 64 first-semester students of Latvia University of Agriculture taking part in the research. Statistically significant positive correlation of the results of the mindfulness and commitment subscales was found in the research, as well as statistically significant negative correlation between the results of reflexivity and the hardiness scale was found. The obtained results confirm the statements of the theoretical studies on interrelation between mindfulness and psychological well-being, and reveal contradictions between reflection as an integral formation of the psyche and hardiness as a belief system involving active external activities.

**Keywords:** reflexivity, hardiness, mindfulness.

### Introduction

There are similar tendencies of adaptation of first-semester students in Latvia, Lithuania and the USA (Voitkāne, Miezīte, 2001; Balaisis, 2002, Gallagher, Golin, 1992) expressed as difficulties to adapt to the environment of the university. There were serious problems of well-being, mental and physical health of the first-semester students found in the research carried out by S. Voitkane and S. Miezite in 2001 in the University of Latvia (Voitkāne, Miezīte, 2001). Similar tendencies are reflected also in the research of the adaptation of the students in Russia – 25% of the first-semester students feel emotional deadaptation and high level of stress (Холмогорова, Гаранян, 2009). Impact of depression and social support towards overcoming difficulties was researched in Latvia University of Agriculture in 2011. Negative statistically significant ( $p < 0.01$ ) correlation between the results of received social support scale and Beck's Depression questionnaire was found in the research, showing the fact that as social support increases, the indicators of depression decrease (Pāvulēns, Vecgrāve, 2012).

V. Belkina and I. Reviakina state that the age of 16-18 years is a sensitive period for reflection development (Белкина, Ревякина, 2003). Young people of this age are still in the quest for their identity, they have to develop their new identity along with the studies, they have to acquire a new social role, and the basis of development of these phenomena is reflection. According to studies (Voitkāne, Miezīte, 2001), adaptation to the university environment, in its turn, causes stress. Overcoming stress is related to hardiness as an individual quality and individual flexibility resulting from it.

Researchers of the USA state that *increases in Mindfulness were significantly related to increases in self-esteem and declines in perceived stress, past and present anxiety, and general psychological symptoms* (Brown, West, 2011, 1030).

The results obtained by researchers evoke interest regarding interrelation between mindfulness and hardiness among the Latvian students, especially because the research methodology of mindfulness is compact and easy processed. There is no information at our disposal on previous researches of interrelation between mindfulness and hardiness, as well as on correlation between mindfulness and reflexivity, therefore, the results of the research may affect further researches within this field.

The aim of the article is to publish the results of the theoretical and empirical research carried out by the authors of the article on the mindfulness, hardiness and reflexivity among the first-semester students, as well as on interrelation between the mindfulness, hardiness, and reflexivity.

### Methodology

The theoretical part of the research consists of the study and theoretical analysis of the scientific and methodological literature on the hardiness, reflexivity and mindfulness.

There were 49 (23%) female and 15 (77%) male first-semester students between ages of 18 to 23 ( $M=19.4$ ,  $SD=1.15$ ) participating in the empirical part of this study in October 2012, at the Institute of Education and Home Economics, at Latvia University of Agriculture. All the students were from the Faculty of Economics of the same University. Gender distribution was approximately proportionate to that within the student body of the Faculty of Economics of Latvia University of Agriculture, in which four fifths of the students were female and one fifth was male.

Research questions:

- How do the first semester students assess their mindfulness, hardiness and reflexivity?
- What is interrelation of mindfulness, hardiness and reflexivity among the first semester students?

Students were provided with a packet of questionnaires in their classes. The students were asked to fill out and return the questionnaires personally back to researchers. All students filled out the questionnaires in the classrooms.

A survey of the research developed by the authors consisted of the Mindful Attention Awareness Scale (14 items), the Hardiness Assessment Scale (an adapted version from the Personal Views Survey III-R (Maddi, Khoshaba, 2001)) (45 items), and the Reflexivity Assessment Scale (27 items).

The Mindful Attention Awareness Scale (MAAS), originally developed by K. Brown and R. Ryan (2003), consisted of 15 items; responses were made on a 6-point Likert type scale, ranging from 1 (almost always) to 6 (almost never). Higher scores reflected higher trait of mindfulness, reported internal consistency estimates (Cronbach's alpha) were from 0.80 to 0.87 (Brown, Ryan, 2003; Brown, West, 2011). The item "I go to places on *automatic pilot* and then wonder why I went there" because of its inappropriateness was removed from the survey, as in the research provided by K. Brown and A. West (2011).

The Hardiness Assessment Scale (an adapted version from the Personal Views Survey III-R (Maddi, Khoshaba, 2001; Леонтьев, Рассказова, 2006)) consisted of 3 subscales: Commitment (18 items); Control, (17 items); Challenge, (10 items). According to the Likert-type scale, the respondents had to choose one of the four possible answers: *yes*, *rather yes than no*, *rather no than yes* and *no*. As reported by the authors, the survey had acceptable validity and internal consistency, Cronbach's alpha ( $\alpha$ ) for hardiness was found to be 0.80 (for Commitment  $\alpha = 0.59$ , Control  $\alpha = 0.63$ , Challenge  $\alpha = 0.57$ ). Similar estimates of internal consistency were found during our previous research (Pāvulēns, Vecgrāve, 2012).

The Reflexivity Scale developed by A. Karpov consisted of 27 items; responses were made on a 7-point Likert type scale, ranging from 1 (absolutely disagree) to 7 (absolutely agree). Reported internal consistency estimates were acceptable,  $\alpha=0.76$ , Spearman-Brown Coefficient was 0.78 (Карпов, 2003).

### Results and Discussion

It was found in the theoretical part of the research that hardiness is a combination of attitudes allowing to overcome with courage and determination obstacles causing stress caused by possible potential feeling of disaster regarding growth opportunities. Hardiness is as significant stress overcoming factor as optimism and religiosity (Maddi, 2004, 2006). Hardiness as an ability to overcome difficulties develops during the childhood and youth. According to V. Vogin (Богин, 1993), it cannot be developed by using traditional types of activities, rather by considering and changing the level of

activity, by developing a new and adequate activity. Successful development of hardiness is possible only by using reflection. Hardiness as a force of counteraction is an integral quality of an individual including commitment. It is necessary to have self-determination, to determine one's intentions and possible results of activity in order to stay committed. Hardiness can be reflected in the attitude of an individual both towards himself or herself, and towards the world, it defines interaction between the individual and the surrounding world. Hardiness endues the person strength and motivates to express himself or herself, to be a leader by implementing a healthy way of thinking and behaviour. This phenomenon gives a possibility to have a feeling of significance and sufficient value in order to get fully involved in solving life's tasks, despite the stress causing factors. Individuals with developed hardiness are highly committed to whatever they are doing, they thrive for challenges, and view changes as an incentive to personal growth, rather than a threat to security, as well as they believe they have control over their lives.

Individuals having developed hardiness are unlike those described by several authors (Kobasa, Maddi, 1982). Such individuals are not able to overcome the difficulties of life due to their inability to be under stress and psychological protection. Poorly developed self-confidence, weak self-concept are characteristic to such individuals, therefore, they do not respond to life's challenges. Being fearful, having insufficiently developed processes of cognitive assessment, they perceive themselves as such who are not able to control the surrounding world. They prefer to quit when experiencing difficult situations or to humbly endure them, not trying to change the situation.

Hardiness has some considerable similarities with other psychological phenomena of personality. The following can be listed as the most significant similarities: control locus, harmonization of feelings, self-efficiency, optimism, as well as reflection, as it penetrates everywhere and embrace all areas of our psyche, as stated by A. Karpov (Карпов, 2003), however, a deeper study of reflection is hindered by the fact that to this day there is neither a single comprehensive psychological concept of reflection nor any somehow defined single approach for its development expressed in the ruling eclecticism and empiricism of the field. Reflection is both a unique *quality* possessed only by an individual and a *condition* of awareness of things, as well as a representation *process* of the mental content in psyche.

M. Desjarlais and P. Smith (2011, 3) state that unlike the self-assessment which is *a process that involves establishing strengths, improvements, and insights based on predetermined performance criteria, reflection is a personal process that can deepen one's understanding of self and can lead to significant discoveries or insights.*

A. Karpov states that reflection at the same time may express itself and also is being expressed as a mental condition, a process and a quality. Besides, the essence or specificity of reflection (as a term and mental reality) is expressed by the aspect that it may be considered separately not only as a process, a quality or a condition, but rather it is a direct synthesis, stating a qualitative definition of reflection. It means that although the study of reflection has to be carried out differentially in certain ways, the phenomenon itself has to be discovered as an undivided issue (as a single process, quality and condition). The researcher suggests avoiding fragmentary and fragmentation arising from using simply unrelated data on each of reflection categories, and he highlights the necessity to maximally emphasize their interconnectedness. A. Karpov points out that only by synthesizing the results obtained when studying each type of reflection, it is possible to develop a single comprehensive psychological concept of reflection (Карпов, 2003, 2005).

The study of reflection is related to study of reflexivity as a quality. Reflexivity is a quality possessed by each individual and is described by a limited range of the differences of individual expressions, it is a continuous quality which can be quantified. This insight allows to state that it is possible to develop a methodology to define the level of reflexivity. It means that the level of reflexivity as a new independent variable of the experimental studies of psychology may be used to define new functional connections and to discover causal relationship. A. Karpov (Карпов, 2003) states that it is possible to define regularities between reflexivity and the results of one's activity, to find and to assess correlations of reflexivity and of other individual qualities, as well as to determine a place of reflection within the structure of personality.

Describing a research methodology of reflection, the scientist emphasizes inseparable unity of the process, condition and quality when understanding reflection, and reflection as a united intrapsychic and interpsychic phenomenon, the former features reflection as an ability to perceive and analyze the content of one's psyche, the latest – the ability to understand psyche of other people, “to put oneself in somebody's shoes” (Карпов, 2003).

The researcher points out that the spectrum of behavioural expressions – reflexivity indicators includes three types of reflection: situational, retrospective and perspective reflection (Карпов, 2003, 2005).

- *Situational* reflection is featured by direct adapting to the situation by reflecting subject, self-control of behaviour in the existing (urgent) situation, comprehension of its elements and analysis of the ongoing events. Reflection includes the ability of the subject to relate his or her activities to the itemized world, to control and to coordinate elements of his or her activity according to changeable circumstances. Indicators of behaviour – time for considering the ongoing activity, frequency of the stages of analysis of the ongoing activity, the breadth (expanse) stage of the decision making process, tendency of self-analysis in certain situations of life.
- *Retrospective* (past) reflection is used to analyse implemented activity and events which occurred in the past, it is expressed in one's inclination to analyse and assess his or her past. Objects of reflection are prerequisites of the things in the past, motives and reasons, the content of implemented behaviour, its results, and especially – made mistakes. Retrospective reflection is featured by the fact how often and how long an individual analyses and assess the events of the past, or whether he or she have an inclination to analyse the past and himself or herself within it.
- *Perspective* (future) reflection includes thoughts on behaviour or activity to be implemented in the future, sense on its process, planning, and the most effective selection of its implementing methods and prediction of possible results. Indicators of behaviour include the stage of how carefully one's behaviour is planned, frequency of thoughts of future events, orientation to future.

According to K. Brown and R. Ryan (2003, 822), mindfulness most commonly is defined as the state of being attentive to and aware of what is taking place in the present, described as the clear and single-minded awareness of what actually happens to us and in us at the successive moments of perception, or characterised as keeping one's consciousness alive to the present reality. There were statistically significant ( $p < 0.001$ ) positive correlations of mindfulness found in relation with several indicators of psychological well-being - life satisfaction, vitality, autonomy, relatedness, competence - in several researches carried out among the students (the total amount of the samples  $N = 1179$ ), as well as statistically significant ( $p < 0.001$ ) negative correlations were found in relation with the scales of NEO personality inventory neuroticism, anxiety, angry hostility, depression, self-consciousness, impulsiveness and vulnerability and the NEO Five-Factor Inventory Neuroticism scale, as well as with several personal survey methodology scales of Depression and Anxiety. Statistically significant ( $p < 0.01$ ) negative interrelation between the assessment of mindfulness and physical well-being also was found within the individual subgroups of the selection (including the group of students,  $N = 640$ , mean age 19.5) (Brown, Ryan, 2003). Similar results were obtained when studying adolescents ( $N = 602$ , mean age 16.73) (Brown, West, 2011). As for adolescents ( $N = 102$ , mean age 15.35) with mental health disorders, statistically significant changes of mindfulness were found, when their condition improved.

Analysing compliance of the results obtained in the research with the normal distribution using the One-Sample Kolmogorov-Smirnov Test, it was found in the empirical part of this study that all calculated  $Z < 1.123$ , all calculated  $p > 0.16$ , showing that distribution of the results complies with the normal distribution (Paura, Arhipova, 2002).

Using Mann-Whitney U criteria for comparing, according to responses of male ( $n = 15$ ) and female ( $n = 49$ ) first-semester students, it was found that there were no significant differences (all calculated  $p > 0.05$ ) in the assessments of Mindful Attention Awareness, Commitment, Challenge and Reflexivity among subgroups. Statistically significant differences were found within the Control subscale, the mean values of the control assessment of the male students were higher than those of female students.

Statistically significant differences ( $p < 0.10$ ) were found when comparing the total assessment of hardiness (Mann-Whitney  $U=246$ ;  $p=0.054$ ). The mean values of the hardiness assessment of the male students were higher than those of female students in this assessment, too (Table 1).

Table 1

**Minimal and Maximal Scores, Central Tendency Indicators and Significance of the Differences in the Results in Female and Male Samples**

Scales	Sample	M (Mean)	SD (Standard Deviation)	Min	Max	Mann- Whitney U	<i>p</i> - value
Mindful Attention Awareness	F	3.96	0.58	2.50	5.73	358	0.881
	M	3.95	0.48	3.14	4.57		
Hardiness, commitment subscale	F	26.12	5.69	14	36	293	0.236
	M	28.13	4.81	16	35		
Hardiness, control subscale	F	20.53	5.26	8	30	183.5	0.003
	M	25.01	5.58	19	29		
Hardiness, challenge subscale	F	10.57	3.32	3	17	357	0.867
	M	10.93	2.41	7	15		
Hardiness, total	F	78.09	16.69	41	109	246	0.054
	M	87.36	12.78	61	104		
Reflexivity	F	132.32	19.74	84	175	280.5	0.168
	M	124.99	19.54	87	160		

Samples: F – female, n=49; M – male, n=15

Table 2

**Reliability Indicators and Correlation Coefficients**

No	Scales	$\alpha$	Scales					
			1	2	3	4	5	
			<i>Spearman's rho (r<sub>s</sub>)</i>					
1	Mindful Attention Awareness	0.78	1.00					
2	Hardiness, commitment subscale	0.75	0.31 <sup>b</sup>	1.00				
3	Hardiness, control subscale	0.69	0.18	0.58 <sup>a</sup>	1.00			
4	Hardiness, challenge subscale	0.56	0,03	0.52 <sup>a</sup>	0.39 <sup>a</sup>	1.00		
5	Hardiness, total	0.83	0,24 <sup>c</sup>	0,86 <sup>a</sup>	0,83 <sup>a</sup>	0.67 <sup>a</sup>	1.00	
6	Reflexivity	0.79	-0.14	-0.17	-0,37 <sup>a</sup>	-0.29 <sup>b</sup>	-0.33 <sup>a</sup>	

$\alpha$  – Cronbach's alpha      Significance (2-tailed):  
<sup>a</sup> – Correlation is significant at the 0.01 level ( $p < 0.01$ )  
<sup>b</sup> – Correlation is significant at the 0.05 level ( $p < 0.05$ )  
<sup>c</sup> – Correlation is significant at the 0.10 level ( $p < 0.10$ )

It is found that there is statistically significant positive correlation between the results of the MAAS and commitment subscales ( $p < 0.05$ ). Self-assessments of reflexivity are negatively statistically significantly related to the results of the Hardiness Control subscale ( $p < 0.01$ ) and to the Challenge subscale ( $p < 0.05$ ). Assessments of reflexivity and hardiness are also negatively statistically significantly interrelated ( $p < 0.01$ ) (Table 2).

Table 3

**Comparison of Self-Assessment of Mindfulness among Various Selections**

Mindful Attention Awareness Scale (MAAS) item	MAAS Results					
	Sample 1		Sample 2		Sample 3	
	M	SD	M	SD	M	SD
I could be experiencing some emotion and not be conscious of it until some time later	4.0	1.12	4.0	1.2	4.0	0.89
I break or spill things because of carelessness, not paying attention, or thinking of something else	4.1	1.47	4.3	1.4	4.4	1.09
I find it difficult to stay focused on what's happening in the present	3.8	1.23	3.9	1.3	3.9	1.12
I tend to walk quickly to get where I'm going without paying attention to what I experience along the way	3.4	1.27	3.4	1.4	3.6	1.1
I tend not to notice feelings of physical tension or discomfort until they really grab my attention	3.8	1.22	3.8	1.3	3.3	1.14
I forget a person's name almost as soon as I've been told it for the first time	3.4	1.54	3.9	1.7	3.6	1.5
It seems I am "running on automatic," without much awareness of what I'm doing	3.7	1.24	4.0	1.3	4.0	0.99
I rush through activities without being really attentive to them	3.8	1.11	3.9	1.2	4.3	1.02
I get so focused on the goal I want to achieve that lose touch with what I'm doing right now to get there	3.7	1.15	3.7	1.3	4.2	0.99
I do jobs or tasks automatically, without being aware of what I'm doing	3.7	1.2	3.8	1.2	4.5	1.07
I find myself listening to someone with one ear, doing something else at the same time	3.5	1.16	3.0	1.2	3.5	1.08
I find myself preoccupied with the future or the past	2.7	1.03	3.1	1.4	2.9	1.11
I find myself doing things without paying attention	3.7	1.14	3.6	1.2	4.3	0.96
I snack without being aware that I'm eating	4.1	1.42	4.2	1.6	4.8	1.16
Sample 1 – N=313, mean age 19.5, average MAAS score is 3.67 (Brown, Ryan, 2003, 826)						
Sample 2 – N=294, mean age 16.7 average MAAS score is 3.75 (Brown, West, 2011, 1028)						
Sample 3 – N=64, mean age 19.4, average MAAS score is 3.96 (data from the current research)						

Comparing obtained results with those of other researches, we found that the assessments of respondents' mindfulness were slightly higher than those of other researches (Table 3). Presumably, it can be explained by the adaptation period to the environment of studies. It was found in the adolescent mindfulness research carried out in the USA ( $n = 602$ , mean age 16.73) that *survey scores are slightly higher for male adolescents ( $M=3.93$ ,  $SD = 0.74$ ) than for female adolescents ( $M=3.72$ ,  $SD = 0.75$ ),*

as well as the *MAAS scores did not differ by age* ( $r = 0.05$ ,  $p > .27$ ) *nor by race or ethnicity* (Brown, West, 2011, 1028). The mean values of the male assessments of our research are slightly lower than those of female, however, differences are not statistically significant. Comparing responses of the respondents among the different age groups with the Kruskal Wallis Test, it was found that differences were not statistically significant ( $\chi^2=5.24$ ;  $p=0.28$ ), age differences of the respondents were not statistically significantly related to mindfulness (Spearman's rho  $r_s = 0.20$ ,  $p = 0.12$ ).

## Conclusions

- It was found in the research that mindfulness ( $M=3.96$ ) of the first semester students was slightly higher than that of the previous studies (from 3.67 to 3.93), differences among the gender and age subgroups were not statistically significant.
- Differences of the entire hardiness assessment among the male and female subgroups of the first semester students are statistically significant ( $p<0.1$ ), male respondents assess their total hardiness higher than female respondents. Significant differences ( $p<0.01$ ) are found in the control subscale proving that readiness of the first semester male students to look for solutions under stress situations is higher.
- As for assessment of reflexivity of the first semester students, good mutual compliance of the assessments of male and female respondents was found, as well as compliance of the assessments with requirements of normal distribution (Kolmogorov – Smirnov  $Z=0.72$ ,  $p=0.69$ ) was found, thus, proving proportional distribution of reflexivity assessments in the sample.
- The assessment of mutual interrelation of the respondents confirms statistically significant interrelation of mindfulness and hardiness. Correlation between the statistically significant mindfulness and commitment subscale ( $r_s = 0.31$ ,  $p < 0.01$ ) confirms the insight obtained in the theoretical part of the research on interrelation between mindfulness and well-being; it confirms mutual interrelation between the attitude of alertness and thoughtfulness towards the life and conviction of the necessity to participate actively, to be a part of the on-going things.
- In opposition to the external, active life's position performed within the social environment, reflexivity as an integrative inner activity is related to restriction of external activities within a certain period of time which is reflected in negative statistically significant interrelation with reflexivity and hardiness in general ( $p<0.01$ ), as well as with the subscales of control ( $p<0.1$ ) and commitment ( $p<0.05$ ).

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