

# SOME PSYCHOLOGICAL FACTORS THAT AFFECT EMOTIONAL INTELLIGENCE OF LITHUANIAN HIGH SCHOOL STUDENTS

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## **Abstract**

This study explores relationships among high school students' emotional intelligence, subjective health status, depressiveness, anxiety and psychological well-being. Participants were 16-19 years old students ( $n = 371$ ) from high schools in various regions of Lithuania. The results suggested that total emotional intelligence positively correlates with psychological well-being and negatively correlates with subjective health status, depressiveness, and anxiety subscales.

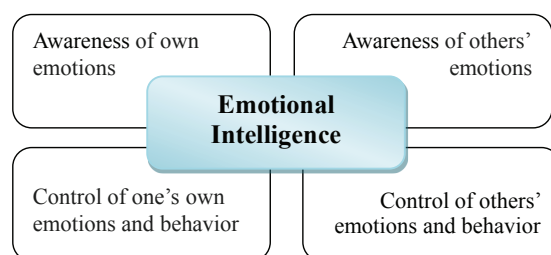
**Keywords:** *anxiety, depressiveness, emotional intelligence, psychological well-being, subjective health status.*

## **Introduction**

The importance of emotional intelligence (EI) in effective functioning and development of personality in all spheres of life is receiving wide appreciation (Farnia, Nafukho, 2016; Jafri, Dem, & Choden, 2016). EI helps individuals apply their skills in the best way in social relations and, in specific circumstances, to ignore smaller rewards in order to achieve much larger ones, to overcome problems, and to maintain motivation in all circumstances, to be a novelty seeker, to be emotionally balanced and to be optimistic and goal-oriented in life. Therefore, the relevance of EI studies is unquestionable: having determined important EI correlations with various factors personality development is possible by creating EI development programs and/or improving factors that are important for EI. On the other hand, an abundance of contradictive data on EI correlations with various factors still exists. Furthermore, the previous EI studies are not sufficiently systematic and deep; they are rather fragmental and so on. The never-ending discussion about how EI should be defined and measured also poses problems. Over the past 20 years, the field has clarified a distinction between two common constructs found within EI literature, commonly referred to as trait and ability EI (Thomas, Cassady, & Heller, 2017). Trait EI can be conceptualized as individuals' perceptions of their emotional world

and emotional self-efficacy (Petrides, Mikolajczak, Mavroveli, Sanchez-Ruiz, Furnham, & Pérez-González, 2016). Ability EI is conceptualized as the actual cognitive abilities that allow individuals to identify, understand, and manage emotions (Bar-On, 2010). Also, some authors try to combine these two concepts by creating new integrated EI models (Mikolajczak, Petrides, Coumans, & Luminet, 2009; Spielberger, 2004) that would have not just theoretical, but also practical significance.

Since there are numerous different trends defining EI and since there has been no definition that could be prioritized, in this study, EI was perceived as a construct of integrated trait and ability EI. Thus, in this paper, EI is defined as internal and external EI: a) the ability to perceive and control one's own emotions (internal EI); b) ability to perceive and control others' emotions and behavior (external EI) (see Figure 1).



**Figure 1.** Conceptualization of EI Construct

Researchers agree that early stages of personality development – childhood, adolescence, and juvenescence – are particularly important for shaping EI. Goleman (2003) maintains that a significant number of adolescents are emotionally affected: they feel desolated, suffer from depression, feel strong anger and cannot control emotions, are predisposed to overrate, to be anxious, are impulsive and aggressive. Adolescence is a period of dramatic challenges when a person has to adapt to internal changes to make relations with friends and peers, to make decisions that will be important in the future. This period is not equally successful for all, because some adolescents encounter cognitive, emotional, and behavioral difficulties. Emotional problems such as frequent mood shifts, strong feeling of guilt, anxiety and the like manifest themselves in adolescence. When adolescents have difficulty in understanding the surrounding environment – friends and peers – it is hard for them to identify and understand as well as regulate emotions of other people.

Therefore, it is relevant to specifically explore high school students' personality and examine factors that are important for EI development: successful interventions at this age would allow one to intensively accumulate experience of interpersonal relationships, to understand its impact on everyday situations (Baltes, Staudinger, & Lindenberger, 1999), and to learn effective emotion control strategies (Nelis, Quidbach, Mikolajczak, & Hansenne, 2009). There is evidence in the literature that emotional intelligence is a developmental phenomenon; it tends to increase with age and can be improved through systematic training programs (Garg, Levin, & Tremblay, 2016).

One of the most fundamental human desires is to feel well in one's personal life (Diener, 1998). Maybe for this reason so much attention is being paid to theoretical and empirical studies of subjectively perceived well-being. In recent decades, the focus was particularly concentrated on the correlation between EI and psychological well-being. In the scientific literature, to define thriving of an individual and to emphasize its various aspects concepts

such as psychological well-being (Ryff, 1989; Ryff & Keyes, 1995) and subjective well-being (Diener, 2000) are used. Subjective well-being is significant during adolescence – high subjective well-being in adolescents predicts a number of positive attributes and behaviors, including less delinquency and aggression, increased self-efficacy and self-esteem, fewer symptoms of anxiety (Moksnes, Rannestad, Byrne, & Espnes, 2010). Researchers that have modelled “thriving” with respect to trait and ability EI have demonstrated that students’ levels of EI are positively associated with numerous adaptive outcomes including psychological well-being (Salami, 2011; Thomas et al., 2017).

Psychological well-being is regarded also of one of the most relevant psychological characteristics of mental health (Derdikman-Eiron, Indredavik, Bratberg, Taraldsen, Bakken, & Colton, 2011). Current state of a person’s health is a significant indicator when analyzing and predicting the person’s health changes and healthcare needs in the near future (Saevareid, Thygesen, Nygaard, & Lindstrom, 2007). However, health assessment is a complex phenomenon, consisting of both subjective and objective components. Objective data alone cannot fully reflect a comprehensive health condition, because health is also impacted by social and psychological factors as well as a subjective approach to one’s health. Subjective health covers both subjective assumptions and factual knowledge. Subjective health assessment is usually determined by biomedical, functional, and emotional components (Kaplan & Baron-Epel, 2003; Saevareid et al., 2007). A number of researchers (Menec & Chipperfield, 2001; Saevareid et al., 2007) emphasize that subjective, as opposed to objective, health assessment is a significant prognostic indicator.

Whereas many studies explore adult emotion regulation patterns and their link with health outcomes, there are only a few studies that examine the correlation between emotions and health status in adolescence. During adolescence, the social arena of an individual expands drastically: peers, classmates, teachers and others gain increasing importance for socio-emotional and psychosomatic adjustment, apart from families, schools and neighborhoods; also, peer context has a unique role in an adolescent’s psychosomatic health (Petanidou, Daskagianni, Dimitrakaki, Kolaitis, & Tountas, 2013). Adolescence becomes a very significant period in the development of individuals when dealing with their social relationships – higher EI helps them to be more successful in starting and maintaining meaningful relationships (Sharif, Rezaie, Keshavarzi, Mansoori, & Ghadakpoor, 2013). Also, as indicated in the literature, many adolescents experience a lot of stress in their daily lives, and higher EI is found to be a protective factor (Moksnes et al., 2010). EI may serve as a personal resource to facilitate processing emotions into effective behavior patterns (Zysberg, Orenshtein, & Gimmon, 2017).

A vast amount of research has documented a correlation between EI and mental health. For instance, EI has been negatively correlated with depression (e.g., Ciarrochi, Deane, & Anderson, 2002; Marguerite et al., 2017; Saklofske, Austin, & Minski, 2003) and anxiety (e.g., Ciarrochi, Chan, & Bajgar, 2001; Marguerite et al., 2017; Mikolajczak, Luminet, Leroy, & Roy, 2007). Jahangard, Haghghi, Bajoghli, Ahmadpanah, Ghaleiha, Zarrabian, & Brand, 2012) found that EI skill training confirmed that EI has a negative impact on depression. A 4-week intensive psychotherapeutic intervention involving EI skill training improved EI among patients suffering from both borderline personality disorder and depressive disorder, as compared to patients who did not receive such intervention. The intensive psychotherapeutic intervention led to significantly decreased depressive symptoms, indicating that interventions targeting EI can have additional beneficial effects on depressive symptoms (Jahangard et al., 2012).

In summary, this brief overview of empirical studies has revealed general tendencies: EI positively correlates with psychological well-being, while associations with depressiveness and anxiety are negative. However, existence of some other important factors that influence (increase or decrease) the correlation between EI and subjective health status as well as psychological well-being must be considered, therefore it is expedient to continue such studies. The empirical study presented in this paper seeks to find answers to the following questions: 1) How important is the cultural context? As cultural differences show up in emotion perception, expression, and regulation (Karim & Weisz, 2010; Matsumoto, Yoo, & Nakagawa, 2008) the question arises whether EI correlations with various phenomena can be confirmed in the population of Lithuanian high school students?; 2) What factors may indicate total EI of students, i.e., the ability to perceive and control one's own emotions and the ability to perceive and control others' emotions and behavior? Having determined these correlations it would be possible to look for specific, practically implementable ways for young people to develop EI by creating various methodologies and integrating them into the curriculum (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011).

*The purpose* of the present study is to assess Lithuanian high school students' subjectively perceived health, depressiveness, anxiety, and psychological well-being and correlate these with their EI as well as to determine which of these factors may be used to predict the level of EI.

## Methods

**Sample.** Respondents were selected using the convenience quota sampling method. High school students from various regions of Lithuania ( $n = 371$  high school students) were interviewed. Their ages ranged from 16 to 19 years ( $M = 17.5$ ,  $SD = 0.64$ ). 40.4% of subjects were male ( $n = 147$ ) and 59.6% were female ( $n = 217$ ). Territorial, demographic, educational, etc., factors were taken into account when constructing the sample to ensure the most accurate representation of the natural traits of the high school student population.

Respondents of the study were informed about the process and objectives of the study and have given their consent to participate anonymously.

To summarize the study sample characteristics, according to the nature of the study and the diversity of groups, the sample size, and the compliance of the main socio-demographic characteristics to populations' statistical indicators, the study sample can be considered relatively representative and satisfying the requirements of the investigation.

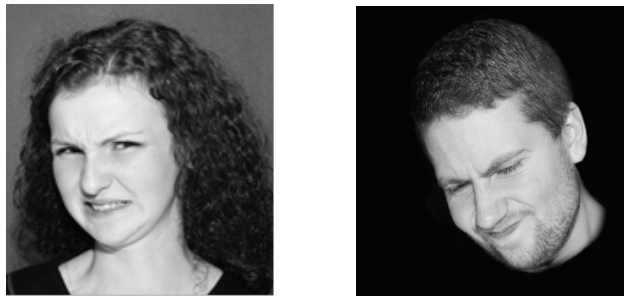
**Study Methodology.** The study was carried out using an original instrument – EI test EI-DARL-V1/V2 (Antinienė & Lekavičienė, 2014a). The test consists of 73 traditional items – self-knowledge questionnaire, where subjects reveal their degree of agreement by evaluating them on a 6-step Likert scale. The test consists of five subscales: *Awareness of one's own emotions* (12 items); *Control of one's own emotions and behavior* (26 items); *Awareness of others' emotions* (14 items); *Control of interpersonal relations* (11 items); and *Manipulations* (10 items). The latter subscale assesses how much a person is inclined to use his or her EI to achieve personal objectives employing manipulations.

The structure of the EI test was confirmed using factor analysis. Factor analysis consolidated the above mentioned subscales: *Awareness of one's own emotions* (e.g., “Usually I have a good understanding of why I have specific feelings”), *Control of one's own emotions and behavior* (e.g., “Sometimes I feel jealous but I do not show that”), *Awareness of others' emotions* (e.g., “It is enough for me to listen to how someone's voice sounds to understand

what the person is feeling”), *Control of interpersonal relations* (e.g., “I know how to calm a child who lost his/her parents in a shop”) and *Manipulations* (e.g., “I am quite good at understanding other people’s feelings and sometimes use that to achieve my objectives”).

The EI questionnaire psychometric characteristics were obtained: Cronbach’s alpha coefficient fluctuated from 0.73 to 0.89; the average correlation among the items on the questionnaire ranged from 0.29 to 0.49; L – factorial loadings: the instrument is left with only those items, whose factorial loadings exceed 0.3; factor’s overall explained dispersion fluctuates from 22 to 46%; Kaiser-Meyer-Olkin (KMO) values range from 0.88 to 0.94. Therefore, the psychometric quality of the questionnaire is sufficient.

In addition to the traditional questionnaire, two other scales were used to assess EI – *Identification of emotions in faces (pictures)* and *Solution of emotional social and interpersonal situations*. In the first case, subjects were asked to recognize emotions in people’s faces (30 photos); the subject had to select an answer from four given choices. Albums with thirty pictures depicting various emotional states were given to the subjects. Photos of typical features reflecting specific emotions were selected (see Figure 2).



**Figure 2.** EI-DARL-V2 test stimulating material tracing emotions

The internal consistency index (Cronbach’s  $\alpha$ ) of the scale of facial expressions identification is not high, only 0.58, but it meets the minimum requirements of psychometric quality. Psychometric theory indicates the acceptable range of variation of the coefficient  $0.5 < \alpha < 1$  (Steyer & Eid, 1993). Moreover, other studies show that the subjects do not demonstrate high abilities to accurately identify emotions: the identification accuracy in Matsumoto and Hwang (2011) was 48%, and after withdrawing the most easily recognized emotions – joy and surprise – the rate of emotional recognition dropped to 35% (Matsumoto & Hwang, 2011).

In the second questionnaire, subjects were asked to perform two tasks for ten emotional-social and interpersonal situations: first, to choose one best/most acceptable solution to the situation from possible solutions; afterwards they were asked to select the answer, which would best reflect how the subject himself or herself would most likely act in real life. In other words, each situation had two mandatory answer formats: the first evaluates the subject’s ability to theoretically analyze and make the right decision (Cronbach’s  $\alpha = 0.64$ ), and the second one reflects how the subject would act in reality (Cronbach’s  $\alpha = 0.54$ ). The descriptive statistics data of this scale revealed that in almost all cases subjects know how to solve situations theoretically better, but personally would solve them worse, though only slightly.

To learn more about the EI-DARL test design and psychometric quality indicators, see works by the authors of this article titled “Design Features of the Short Version of EI-DARL-V1 Original EI Measurement Technique” and “The Construction Principles and Problems of the



Long Version of EI-DARL-V2 Original Measurement Methodology of EI” (Antinienė & Lekavičienė, 2014b).

To assess the subjective physical health status, depressiveness and anxiety, and psychological well-being, special questionnaire blocks were created, which were presented to subjects along with the EI questionnaire. It should be noted that physical and psychological health state of the subjects was assessed using a self-knowledge questionnaire, and not objective clinical indicators. Therefore, in the present study depressiveness, but not depression as a condition was assessed; subjectively experienced anxiety was assessed analogically.

A small, nine-statement block was incorporated into the test (e.g., “Recently I have a tendency: for headaches; chest tightness; weakness; dizziness; strong appetite upsurge or drop”). This block is conditionally named the *Health* scale. Health indicators were evaluated on a scale from 0 – “never, that is completely uncharacteristic of me” to 3 – “often, it is very characteristic of me.” Data revealed that subjects perceive their health status very well, this is what you would expect from students, in other words, from young people in the population. Health status scores fluctuate from 0.76 to 1.40, and are less than 1.5, i.e., the average of possible values ( $M = 1.11$ ,  $SD = 0.61$  and  $SE = 0.06$ ). This scale has good internal consistency (Cronbach’s  $\alpha = 0.81$ , resolution ratio  $r/itt$  indicators of statements fluctuated from 0.38 to 0.68).

In addition to EI test statements and statements representing persons’ subjective health assessment, subjects were given 16 statements, evaluating their depressiveness and anxiety indicators. On the basis of these statements, by applying factorial validation, two scales were multiplexed: *Depressiveness* and *Anxiety*. By applying the factor analysis method, two sufficiently high correlation coefficients were calculated; KMO value was 0.91. The descriptive dispersion of both factors equals 52.60, showing which percentage of the whole the tested objects were able to explain.

*Depressiveness* is measured by statements such as: “I feel that others would do better if I would not exist” and “Things which made me happy don’t make me happy anymore;” *anxiety* – “I feel frustrated when people stop talking when I enter a room” and “I am more nervous than most people.” Statements were rated on the scale of one to six from “definitely no” to “definitely yes.” *Depressiveness* statistics were:  $M = 1.70$ ,  $SD = 0.99$  and  $SE = 0.09$ , while *Anxiety* statistics were  $M = 2.29$ ,  $SD = 1.01$  and  $SE = 0.09$ . Depressiveness and anxiety levels in the tested population are not high, but the anxiety average is a little bit higher than depressiveness,  $p \leq 0.0001$ .

Cronbach’s alpha reliability indicator was calculated for both scales. For the *Depressiveness* scale, which consisted of eight statements, Cronbach’s  $\alpha$  coefficient was 0.89, resolution  $r/itt$  fluctuated from 0.53 to 0.73; for the *Anxiety* scale, which also consisted of eight statements, Cronbach’s  $\alpha$  coefficient was 0.78, and  $r/itt$  fluctuated from 0.34 to 0.65. Thus, it can be stated that both scales have sufficient measurement accuracy.

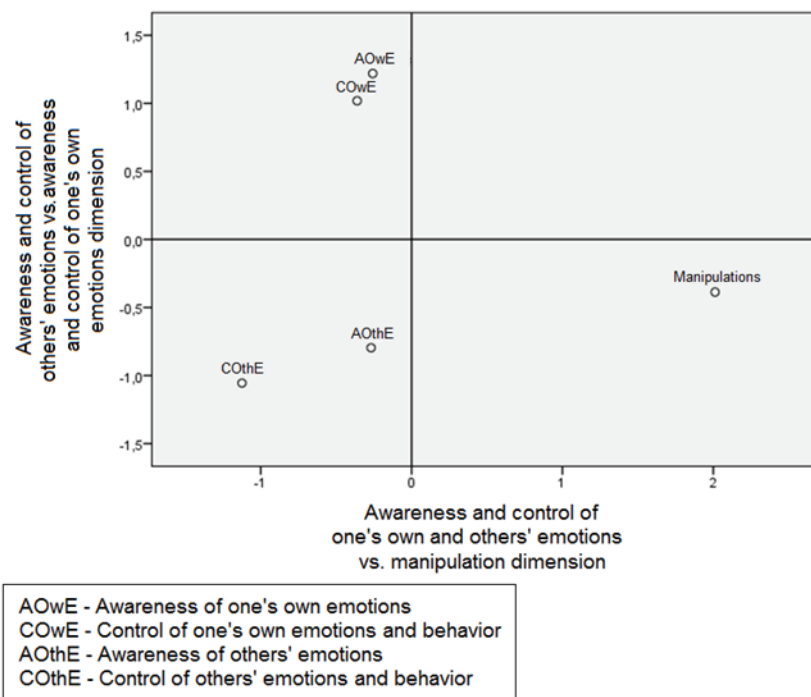
To test psychological well-being among high school students, a ten-question block was incorporated into the survey. In this question block, subjects were asked to evaluate their satisfaction with various aspects of their life (e.g., “relations with friends, acquaintances, classmates; material situation; activity (its contents); learning, leisure, etc.”) on a scale from 0 – “definitely no” to 2 – “definitely yes.” *Psychological well-being* scale descriptives were  $M = 1.46$ ,  $SD = 0.37$  and  $SE = 0.02$ .

In order to find out the internal consistency of all *Psychological well-being* scale statements, Cronbach’s  $\alpha$  index was checked. It was equal to 0.76 and the resolution ratio  $r/itt$  fluctuated from 0.26 to 0.55. Thus it can be concluded that scale reliability is sufficient.

Data analysis in this study was performed using SPSS 23.0 – software package used for statistical analysis. Spearman correlation coefficient, linear regressive analysis, and Multidimensional Scaling method were used. The obtained results are considered statistically significant at  $p < 0.05$ .

**Results**

To determine correlations with factors of subjective health assessment, depressiveness, anxiety, and psychological well-being of high school students, EI indicators obtained by factor analysis were combined into a total EI index. Factor analysis, subscale intercorrelations and MDS (Multidimensional Scaling) method results confirmed that the *Manipulations* subscale was not part of the general construct, when constructing the total EI index (cumulative EI scale). For example, MDS can be seen in Figure 3. The *MDS* data (the obtained Stress = 0.068, RSQ = 0.974) indicate that the inter-model distances in this configuration reflect the original inter-model dissimilarity values well.



**Figure 3.** EI psychosemantic spread

However, although the *Manipulations* subscale is not included in the *Total EI* scale, it is left in the test, as an independent subscale. The *Manipulations* subscale measures the person’s ability to control the behavior of others by using their emotions for one’s own benefit. It seemed that leaving this subscale in the test was appropriate as a qualitative EI assessment component. Thus, only subscales with the ability to understand and control one’s own and others’ emotions were included in the *Total EI* scale. Cronbach’s  $\alpha$  of total EI index or *Total EI* scales was 0.68, and the resolution ratio  $r/itt$  value fluctuated from 0.43 to 0.54.

First, the present study examined correlations among EI subscales and psychological factors – subjective assessment of health, depressiveness, anxiety, and psychological well-being. Results are presented in Table 1.

**Table 1.** Spearman Correlations between EI Subscales and Psychological Factors

EI Subscales	Psychological Factors	Health	Depressiveness	Anxiety	Psychological well-being
	<i>Awareness of one's own emotions (12 items)</i>		-0.39***	-0.48***	-0.36***
<i>Control of one's own emotions and behaviour(26 items)</i>		-0.49***	-0.43***	-0.52***	0.32***
<i>Awareness of others' emotions (14 items)</i>		-0.16	-0.23*	-0.17	0.12*
<i>Control of interpersonal relations (11 items)</i>		-0.11	-0.31***	-0.18	0.17***
<b>Total EI (63 items)</b>		-0.55***	-0.58***	-0.58***	0.33***

Note: \*  $p \leq 0.05$ ; \*\*  $p \leq 0.01$ ; \*\*\*  $p \leq 0.001$ .

No correlation was found among the investigated factors and the *Manipulations* subscale as well as among the said factors and *Identification of emotions in faces (pictures)* and *Solution of emotional social and interpersonal situations* scales. Positive statistically significant ( $p \leq 0.05$ ) correlations among all subscales of total EI and a correlation between *total EI* and *Psychological well-being* scale were obtained. Negative correlations of all EI subscales were also found with the *Depressiveness* scale. However, for *Health* and *Anxiety* scales, EI correlations were observed only with *Awareness and control of one's own emotions and behavior* and *Total EI* scale. The obtained results were expanded using linear regression.

In order to get a clearer overall view of all relations obtained in this study, standardized regression coefficient values and reliability indicators are presented in Table 2. As independent variables, *Health*, *Depressiveness*, *Anxiety* and *Psychological well-being* scales were included into the regression model with the following dependent variables: *Awareness of one's own emotions*, *Control of one's own emotions and behavior*, *Awareness of others' emotions* and *Control of interpersonal relations* scales. Since no significant connections among independent variables and *Manipulations*, *Emotional social and interpersonal situation solving* and *Identification of emotions in faces (pictures)* were established, these subscales were not included in the table.

**Table 2.** Linear regression analysis results of EI subscales and subjective physical and psychological health assessment

Dependent variable	Independent variable	$\beta$	Model		
			R	R <sup>2</sup>	F
<i>Awareness of one's own emotions (12 items)</i>	<i>Health</i>	0.01	0.66	0.44	8.90***
	<i>Depressiveness</i>	-0.71**			
	<i>Anxiety</i>	0.30			
	<i>Psychological well-being</i>	0.26			
<i>Control of one's own emotions and behavior (26 items)</i>	<i>Health</i>	-0.14	0.60	0.36	6.43***
	<i>Depressiveness</i>	0.15			
	<i>Anxiety</i>	-0.49*			
	<i>Psychological well-being</i>	0.56*			



Continued Table 2

<i>Awareness of others' emotions</i> (14 items)	<i>Health</i>	0.19	0.48	0.23	3.34**
	<i>Depressiveness</i>	-0.66*			
	<i>Anxiety</i>	0.04			
	<i>Psychological well-being</i>	-0.26			
<i>Control of interpersonal relations</i> (11 items)	<i>Health</i>	0.21	0.55	0.30	4.69**
	<i>Depressiveness</i>	-0.65**			
	<i>Anxiety</i>	-0.10			
	<i>Psychological well-being</i>	-0.23			
<b>Total EI (63 items)</b>	<i>Health</i>	0.17	0.74	0.54	11.16***
	<i>Depressiveness</i>	-0.64***			
	<i>Anxiety</i>	0.16			
	<i>Psychological well-being</i>	0.13			

Note: \*  $p \leq 0.05$ ; \*\*  $p \leq 0.01$ ; \*\*\*  $p \leq 0.001$

In order to determine what factors can be predictors of EI and its individual components, the regression analysis model was used. There was no causal association between subjective assessment of health and components of EI. However, Spearman's correlations showed that the Health scale had a statistically significant inverse linear relationship to Awareness of one's own emotions ( $r = -0.44$ ,  $p \leq 0.0001$ ), Control of one's own emotions and behavior ( $r = 0.50$ ,  $p \leq 0.0001$ ) subscales and total EI ( $r = -0.55$ ,  $p \leq 0.0001$ ). In other words, higher assessment of their own health by high school students correlates with higher total EI and better perception and control of their own emotions. However, regression analysis showed that although adolescents' EI cannot be predicted by their subjective psychosomatic health assessment, these constructs, in essence, are nevertheless related.

The relations between Depressiveness and Anxiety scales and EI test subscales were checked. The results revealed the following key points: first, the depressed students were less aware of other people's emotions ( $\beta = -0.66$ ,  $p \leq 0.05$ ) and are worse at regulating interpersonal relationships ( $\beta = -0.65$ ,  $p \leq 0.01$ ), depressiveness significantly negatively relates with their awareness of emotions ( $\beta = -0.71$ ,  $p \leq 0.001$ ); secondly, anxious subjects are worse at regulating their own emotions ( $\beta = -0.49$ ,  $p \leq 0.05$ ); thirdly, the only statistically reliable predictor of total EI is depressiveness ( $\beta = -0.64$ ,  $p \leq 0.001$ ); fourth, neither Manipulation nor Emotional-social and interpersonal situation solving scales, nor Emotion recognition in faces were correlated with depressiveness and anxiety in the population of high school students.

One of the purposes of this study was to find out how much students' psychological well-being affects their EI. This relation has been studied by many authors, and they have discovered that EI and a person's psychological well-being are closely related phenomena. After applying a linear regression model, it was concluded that psychological well-being influences only one component of EI – the ability to control one's own emotions and behavior ( $\beta = 0.56$ ,  $p \leq 0.05$ ). In other words, the Control of one's own emotions and behavior subscale is directly associated with the Psychological well-being scale. Correlations among the Psychological well-being, Awareness of one's own emotions, Awareness of others' emotions, Manipulations, and Identification of emotions in faces (pictures) scales were not found.

In summary, despite some correlations among total EI and investigated psychological factors, the regression analysis revealed only one correlation, i.e., between total EI and depressiveness. Consequently, depressiveness is a fairly good predictor of total EI of high

school students. This shows, as we could have expected, that students who tend to be depressed are characterized by lower total EI. Depressiveness of students explains as much as 54% of EI data dispersion ( $\beta = -0.64$ ,  $p \leq 0.001$ ).

### Discussion

The purpose of the present study was to determine relations among EI, subjectively evaluated health, depressiveness, anxiety and psychological well-being among Lithuanian high school students. More specifically, the aim was to answer the question of whether self-evaluation of the mentioned factors (health, depressiveness, anxiety and psychological well-being) makes it possible to assess the EI level of an individual. As reviewed in the Introduction, empirical studies provide abundant evidence that low EI may be related to emotional and behavioral difficulties, complicated interpersonal relations, and academic achievement of adolescents (Garg et al., 2016), therefore, EI level could be improved by employing EI development programs. It is obvious that search for predictors specifically in the sample of school age subjects is of particular relevance.

This study has revealed that health subjectively assessed by high school students correlates with some EI subscales and total EI. Spearman's correlations showed that the Health scale has a statistically significant inverse linear relation to Awareness of one's own emotions and Control of one's own emotions and behavior subscales. This shows that although EI of adolescents cannot be predicted by their subjective health assessment, these constructs, in essence, are nevertheless related.

Past research did not reveal analogous studies, in which EI is related to health indicators used in our study. However, EI has been observed to be significantly positively associated with health (Nelis et al., 2011). Additional studies explored EI and health related behavior finding higher EI correlates with lower tobacco ( $r = -0.16$ ) and alcohol ( $r = -0.19$ ) consumption among adolescents (Trinidad & Johnson, 2002). In college student studies, an inverse correlation was found between EI and alcohol consumption only among males ( $r = -0.28$ ), whereas smoking was not significant (Brackett & Mayer, 2003; Brackett, Mayer, & Warner, 2004). EI may also be regarded as predictor of irregular drug use ( $r = -0.32$ ) (Brackett et al., 2004). In summary, these results confirm tendencies found in our study.

EI allows individuals to more easily recognize, understand, and regulate their emotions. These qualities might allow individuals with higher EI to better resist influences from the environment that could depress their mood or lead them to view themselves in a negative light.

EI test subscales correlated with Depressiveness and Anxiety scales. There was a negative linear correlation among depressiveness and all EI subscales as well as anxiety and awareness and control of one's own emotions. Other researchers obtained similar results; Fernandez-Berrocal, Alcaide, Extremera, and Pizarro (2006) reported that adolescents who have a higher ability to discriminate feelings and control their emotional states showed less anxiety and depression. Negative associations among EI and various psychological traits (e.g., anxiety, depressiveness) are generally explained by a simple premise that one or more emotional processing dimensions (e.g., perception/clarity, management/regulation) are flawed (Thomas et al., 2017). These correlations were also found by Martins, Ramalho, and Morin (2010) and Mathivanan (2013).

Regressive analysis results revealed the following key points: depressive mood most clearly predicts total EI level and three out of four EI components of high school students. That is, depressed high school students are less aware of other people's emotions and are worse at

regulating interpersonal relationships; depressiveness also significantly negatively relates with their awareness of their own emotions. Moreover, anxious high school students are worse at regulating their emotions. These results are consistent with other studies (Fernandez-Berrocal et al., 2006; Zeidner & Matthews, 2016).

Individuals with depressive moods and anxiety when regulating their emotions are inclined to reject emotion-related thoughts to either avoid emotion-related actions or suppress both verbal and non-verbal expressions of emotions (Mikulincer & Shaver, 2008). Lanciano, Curci, Kafetsios, Elia, and Zammuner (2012) support this view, as confirmed by empirical studies: depressive thinking is related with the incapability to use and justify emotions. Therefore, it may be assumed that individuals with depressive moods encounter a lack of resources while processing emotions: such individuals cannot cope with emotional problems and find solutions. This catch-22 creates an environment for the development of depression symptoms.

Many authors have concluded that EI is significantly directly correlated with adolescents' social well-being (Ali, Buzdar, Perveen, & Ramzan, 2016; Salami, 2010; Sánchez-Álvarez, Extremera, & Fernández-Berrocal, 2016). Correlation analysis of the said studies also confirmed the mentioned tendencies: statistically significant correlations between total EI and all its components and social well-being.

After applying the linear regression model, this study concluded that psychological well-being influences only one component of EI, i.e., the ability to regulate one's own emotions and behavior. Our finding can be explained by student's psychological need to develop and maintain interpersonal relationships with peers. Positive relationships with others, environmental mastery, and purpose in life are aspects of psychological well-being. The development of positive relationships with others signifies that a person has warm and trusting relationships as well as the capacity for empathy and reciprocity (Ryff, 1995). Augusto-Landa, Pulido-Martos, and Lopez-Zafra (2011) also have found positive relations between emotional clarity, emotional regulation and components of psychological well-being. Using a combination of scales of job satisfaction, psychological well-being, an EI trait scale and the big five scale, Higgs and Dulewicz (2007) found positive relations among the assessed constructs. The results of Carmeli, Yitzhak-Halevy and Weisberg (2009) provided support for the positive association between EI and psychological dimensions of well-being: self-esteem, life satisfaction and self-acceptance. Previously mentioned scientific research revealed that emotional clarity and regulation are related to psychological well-being.

In conclusion, there is a need for further research using other, more innovative, evaluation methods to achieve a better understanding of the relationship between EI and various psychological factors in the population of high school students. It remains unclear why no correlations among well-being, subjectively evaluated health, depressiveness, anxiety and EI subscales – Identification of emotions in faces (pictures) and Solution of emotional social and interpersonal situations were found. However, the present study has confirmed and broadened earlier knowledge about factors that predict EI of high school students.

### Conclusions

The results of this study have revealed several main findings: first, EI and its components of Lithuanian high school students are statistically significantly related with health, depressiveness, anxiety, and psychological well-being. *Awareness and control of one's own emotions* negatively correlated with *health*, *depressiveness*, and *anxiety* subscales, whereas

the correlation with *psychological well-being* was positive. *Awareness of one's own emotions* and *Control of interpersonal relations* subscales negatively correlated with *depressiveness* and positively correlated with *psychological well-being*. *Total EI* positively correlated only with *psychological well-being* and negatively correlated with *health*, *depressiveness*, and *anxiety* subscales.

Second, *depressiveness* predicted some EI indices of high school students such as *awareness of one's own and others' emotions* and *control of interpersonal relations*, while *anxiety* and *psychological well-being* predicted *control of one's own emotions and behavior*. Furthermore, *depressiveness* was one of the essential predictors of *total EI*.

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## SOME PSYCHOLOGICAL FACTORS THAT AFFECT EMOTIONAL INTELLIGENCE OF LITHUANIAN HIGH SCHOOL STUDENTS

### *Summary*

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Adolescence is a period of dramatic challenges when a person has to adapt to internal changes to make relations with friends and peers, to make decisions that will be important in the future. This period is not equally successful for all, because some adolescents encounter cognitive, emotional, and behavioral difficulties. Emotional problems such as frequent mood shifts, strong feeling of guilt, anxiety and the like manifest themselves in adolescence. When adolescents have difficulty in understanding the surrounding environment – friends and peers – it is hard for them to identify and understand as well as regulate emotions of other people. Empirical studies provide abundant evidence that low EI may be related to emotional and behavioral difficulties, complicated interpersonal relations, and academic achievement of adolescents, etc. Therefore, it is relevant to specifically explore high school students' personality and examine factors that are important for EI development: successful interventions at this age would allow one to intensively accumulate experience of interpersonal relationships, to understand its impact on everyday situations, and to learn effective emotion control strategies.

The purpose of the present study is to assess Lithuanian high school students' subjectively perceived health, depressiveness, anxiety, and psychological well-being and correlate these with their EI as well as to determine which of these factors may be used to predict the level of EI.

The study was carried out using an original instrument – EI test EI-DARL-V1/ V2 (Antinienė & Lekavičienė, 2014b). The test consists of five subscales: Awareness of one's own emotions (12 items); Control of one's own emotions and behavior (26 items); Awareness of others' emotions (14 items); Control of interpersonal relations (11 items); and Manipulations (10 items). In addition to the traditional EI questionnaire, two other scales were used to assess EI – Identification of emotions in faces (pictures) and Solution of emotional social and interpersonal situations.

To assess the subjective physical health status, depressiveness and anxiety, and psychological well-being, special questionnaire blocks were created, which were presented to subjects along with the EI questionnaire. It should be noted that physical and psychological health state of the subjects was assessed using a self-knowledge questionnaire, and not objective clinical indicators.

High school students from various regions of Lithuania ( $n = 371$  high school students) were interviewed. Their ages ranged from 16 to 19 years ( $M = 17.5$ ,  $SD = 0.64$ ). 40.4% of subjects were male ( $n = 147$ ) and 59.6% were female ( $n = 217$ ). Territorial, demographic, educational, etc., factors were taken into account when constructing the sample to ensure the most accurate representation of the natural traits of the high school student population.

Data analysis in this study was performed using SPSS 23.0 – software package used for statistical analysis. Spearman correlation coefficient, linear regressive analysis, and Multidimensional Scaling method were used. The obtained results are considered statistically significant at  $p < 0.05$ .

The results of this study have revealed several main findings: first, EI and its components of Lithuanian high school students are statistically significantly related with health, depressiveness, anxiety, and psychological well-being. Awareness and control of one's own emotions negatively correlated with health, depressiveness, and anxiety subscales, whereas the correlation with psychological well-being was positive. Awareness of one's own emotions and Control of interpersonal relations subscales

negatively correlated with depressiveness and positively correlated with psychological well-being. Total EI positively correlated only with psychological well-being and negatively correlated with health, depressiveness, and anxiety subscales.

Second, depressiveness predicted some EI indices of high school students such as awareness of one's own and others' emotions and control of interpersonal relations, while anxiety and psychological well-being predicted control of one's own emotions and behavior. Furthermore, depressiveness was one of the essential predictors of total EI.

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