EMOTIONAL INTELLIGENCE AND MENTAL HEALTH AMONG HUE UNIVERSITY STUDENTS

Nguyen Ngoc Quynh-Anh*, Dinh Thi Hong Van, Dau Minh Long, Nguyen Thanh Hung

University of Education, Hue University, 34 Le Loi St., Hue, Vietnam

* Correspondence to **Nguyen Ngoc Quynh Anh** < nnqanh@hueuni.edu.vn >

Abstract. Emotional intelligence improves mental health and reduces the risk of mental disorders, especially among youth. Therefore, basic studies about emotional intelligence and its correlation with mental health in students are necessary for Vietnam to fulfil the overall picture of emotional intelligence and mental health. It also provides theoretical and practical evidence for developing intervention studies related to emotional intelligence in the future. This study was conducted among 484 Hue university students. Findings show that the prevalence of students with symptoms of depression, anxiety, stress, and distress was relatively high. Emotional intelligence is strongly negatively correlated and could predict depression, anxiety, stress, and distress. Emotional intelligence also positively correlated with and predicted life satisfaction among participants in this study. Limitations of the study and recommendations for future investigation are discussed.

Keywords: emotional intelligence, life satisfaction, mental health, mental illness, university students.

1. Introduction

Literature has shown that mental illness is prevalent among university students with the rate of 17% to 43% [1], [28], [49]. Difficulties in the period of sensitive transferring from high school to college and university [22] and limitations in coping experience and emotional control skills have increased the risk of having a mental illness at this age.

Currently, the global trend is to increase mental health services toward prevention for at-risk students and to implement intervention programs to treat and maintain positive mental health for students [13]. One of the interesting factors in recent decades is emotional intelligence (EI). Although there is no consensus on the concept of EI [57], most scientists agree that EI is the ability to self-identify, evaluate and manage the emotions of oneself and others [51]. People with high EI often understand their own feelings and can understand the emotions of others.

They are often considered to be cheerful, resilient, and quite optimistic [15]. Previous studies in adults showed that a high EI may predict a lower risk of mental disorders such as depression [2], [4], [12], [55], anxiety [6], [20], [53], stress [44], [50], [53], [54] or aggressive behavior among students [7], [19]. Davis and Humphrey [10] concluded in their study that EI improved mental health for students through school programs. EI also enhances learners' social interactions, life satisfaction, and happiness [26], [29].

In Vietnam, the proportion of youth accounts for 20% of the national population. The current rapid pace of industrialization and modernization makes young people increasingly face many challenges, difficulties, and adverse events that easily lead to mental health problems. It is estimated that approximately three million youth is experiencing at least one mental illness. However, only 20% received essential medical support and treatment [58]. The prevalence of mental illness among Vietnamese youth is higher than that among the general population, from 4-6% [33]. This reality has raised the need for practical evidence for developing EI programs to improve mental health for Vietnamese youth in the near future. However, there is a severe lack of evidence related to EI and mental illness in Vietnam. Therefore, this study aims to investigate the relationship between EI and mental health among Vietnamese university students. Findings from this study will provide more evidence for recommendations of adjusting and adding programs related to EI at university institutions to improve mental health for youth in Vietnam.

2.   Methods

2.1.   Participants

The first- and second-year students were randomly selected from members institutions of Hue University, including the University of Education, the University of Science, the University of Foreign Language, and the University of Economy. In total, there were 484 eligible students, of which 73,3% were females. Over half of the participants were from urban areas (50,2%).

2.2.   Instruments

2.2.1.   *Emotional intelligence (EI)*

The short form of the Trait Emotional Intelligence Questionnaire (TEIQue-SF) developed by Petrides and Furnham [39] was used to measure *EI*. Each statement follows the 7-Likert style with 1 "*Totally disagree*" to 7 "*Totally agree*". The 30-item TEIQue-SF has been used in many countries with a high Cronbach's Alpha from 0.81 to 0.87 [30], [38], [52]. The questionnaire yields four subscales, including Well-being (the feeling of happiness, optimism, and self-

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esteem), Self-Control (the ability to control stress and manage emotions), Emotionality (empathy, the ability to recognize and express feelings, and the capacity to create relationships with others), and Sociability (the assertiveness, the ability of emotional management and developing social relationship). The score of each subscale is the average of related items after reversing some items. The total score of EI is obtained by summing all thirty items and dividing by 30. This scale has been validated for use among adolescents in Vietnam with Cronbach's Alpha 0.77 by Nguyen et al. [32]. Cronbach's Alpha of the questionnaire in this study was 0.81.

2.2.2.   *Mental health*

Mental health in this study is defined by the World Health Organization [59]. The mental health of a person must include two conditions: (1) the lack of mental illness symptoms and (2) the presence of well-being [8]. This study included depression, anxiety, stress, and distress as mental illness and life satisfaction as the presentative of well-being.

The depression, anxiety, and stress level were measured by the 21-item *Depression, Anxiety, and Depression – 21 (DASS-21)* [27]. This scale has been validated for use among Vietnamese youth by Le et al., with Cronbach's Alpha ranging from 0.76 to 0.91 [24]. The score of distress (DASS-21 total) is calculated by summing 21 items and duplicating them. Scores of three subscales, including depression, anxiety, and stress, are the sum of seven related items and then duplicated. The author recommended categorizing each subscale, including highly severe, severe, normal, mild, and normal [27]. Cronbach's Alpha of the DASS-21 in this study ranged from 0.80 to 0.93.

To measure the level of life satisfaction in students, we used *the Satisfaction With Life Scale (SWLS)* by Pavot and Diener (1991) [37] which has been used widely in Vietnam and globally. The scale comprises five questions designed by 7-Likert options. The cutoff point that has been recommended is 20 [11], [37]. Cronbach's Alpha of the SWLS in our study was 0.76.

2.3.   Data analysis

Descriptive statistics include Mean, standard deviation (SD), and percentage (%). Pearson correlation was used to determine the association between EI and its factors to depression, anxiety, stress, distress, and life satisfaction. To identify the role of EI in predicting mental health among students, we used simple and multiple linear regression. All analysis was conducted by Stata version 7.0.

3.   Results

3.1.   Mental health of Hue university students

Approximately half of participants had symptoms of depression (49.8%), and anxiety (54.1%). The extremely severe and severe prevalence was 14.2% for depression and 23.3% for anxiety. About one-third of students (30.6%) experienced symptoms of stress. Among these, 10.5% reported symptoms of severe stress. Results showed that the prevalence of mental health problems among university students in this study was higher than reports from other studies. For example, using the same questionnaire, the study by Mahmoud et al. [28] on 508 American students revealed that the prevalence of depression, anxiety, and stress was 29%, 27%, and 24%, respectively. A recent survey on 1.074 students in Spain showed that 18.4% of students had symptoms of depression. Anxiety and stress were 23.6% and 34.5% [43]. In Malaysia, the prevalence of depression retrieved from *the Centre for Epidemiological Studies Short Depression Scale (CESD-10)* on 1,023 students was 30%, in which extremely severe symptoms were 4.4% [18]. However, a systematic review of 24 studies showed a higher prevalence of these mental health problems than ours. The average percentage of students with depression was 30.5%, ranging from 10.4% to 80.5% [17]. Using DASS-21, findings from 398 students in Pakistan in 2016 revealed the proportion of 32% of participants with depression, 80% with anxiety, and 61% with stress symptoms [22]. The disparities among studies worldwide might come from the difference in using the instrument for measuring mental health problems, criteria in selecting research samples, the objective bias from students' self-report, or the period of collecting data. Our study was conducted when university students had come back to school from the national compulsory social distance due to the second wave of Covid-19 in Vietnam. This incident might significantly impact the prevalence of mental illness among students during the survey.

Nearly half of the participants (43.5%) reported being satisfied with life. The literature generally showed that most university students had high life satisfaction [34], [47]. 76.2% of the 240 Canadian students in the America felt satisfied with their lives [9]. In Asia, more than half of Indian students (64.2%) shared the same feelings [35]. Youth is the stage at the threshold of independence; however, most students are still financially dependent on their families to cover tuition and living expenses [41]. Although some students experience negative social influences, most others have not been exposed to and influenced by society. Therefore, they believe with an expectation that everything is almost perfect and close to the ideal they want. Students are satisfied with their life's essential things and do not want to change anything. In other words, they are currently satisfied with their life.

Table 1. The mental health of Hue university students (n = 484)

Mental health problems	Depression		Anxiety		Stress		Life satisfaction	
	n	%	n	%	n	%	n	%
Extremely serious	35	7.2	81	16.7	19	3.9	-	-
Serious	34	7.0	32	6.6	32	6.6	-	-
Average	101	20.9	117	24.2	44	9.1	-	-
Mild	71	14.7	32	6.6	53	11.0	-	-
Normal	243	50.2	222	45.9	336	69.4	-	-
Yes	241	**49.8**	262	**54.1**	148	**30.6**	284	**56.5**
No	243	50.2	222	45.9	336	69.4	219	43.5

n: Number of students; %: Percentage

3.2.   Emotional intelligence of Hue university students

The mean score of the total EI and all its subscales was above 4.0. The total EI among students in our study ($\overline{X}$ = 4.37, SD = 0.61) was higher than findings from others using the exact measurements ($\overline{X}$ = 4.12, SD = 0.73) [42]. However, it was lower than a report from another study in the United Kingdom using the full version of the DASS ($\overline{X}$ = 4.72, SD = 0.57) [49].

Regarding EI's subscales, the Mean of Well-being was the highest ($\overline{X}$ = 4.97), while the lowest belonged to Emotionality ($\overline{X}$ = 4.11). Hue University students tended to be optimistic and felt happy. However, they needed to improve in their ability to understand other people's points of view. They were not good at recognizing their own emotions and others'. Hence, their capacity to maintain social relationships was restricted. These characteristics have been considered unique and somewhat general weaknesses of Hue youth regarding apprehension and reticence in sharing feelings with others [40].

Table 2. Emotional intelligence of Hue university students

Subscales	Min-Max	$\overline{X}$	SD
Well-being	2.17 – 7.00	4.97	0.99
Self-control	2.00 – 6.67	4.22	0.86
Sociability	2.00 – 7.00	4.27	0.82
Emotionality	2.00 – 6.63	4.11	0.72
Total EI	2.73 – 6.40	4.37	0.61

Note: $\overline{X}$: Mean; SD: Standard Deviation

3.3. The correlation between emotional intelligence and mental health among Hue university students

The findings presented in Table 3 show that EI and its components were negatively correlated to depression, anxiety, stress, and distress among students in this study. The higher EI studentsad the lower risk of having mental health problems and vice versa. Our results were in line with previous studies [21], [31], [45], [60].

In other aspects, EI and its subscales were positively associated with life satisfaction, except for the Emotionality component. This means that the higher EI, the higher satisfaction with life. Students who had a high happiness, self-esteem, and optimism seemed to have a higher happiness feeling with their lives. Our study shared the same conclusion from the previous report [23], [36], [45].

The high consistency in studies on the inverse correlation between EI and mental health problems shows that EI can positively reduce mental illness in youth students. Young people with good EI can identify and recognize emotional cues in themselves and others. Evidence has shown that people with a practical abilitto regulateng their inner-emotion tend to be better at handling complex social-emotional relationships, reading, and responding to emotional signals from others to ensure effective interpersonal relationships [56]. These factors all contribute to helping young people deal with their own emotions when facing difficult situations that can lead to mental illness. In this way, high EI also leads to seeing life better because they feel more in control of what is happening. Students with high EI reported that they could assess situations positively because they could identify, use, understand, and apply emotional regulation strategies, leading to higher life satisfaction and happiness [45].

Table 3. The correlation between emotional intelligence and mental health among Hue university students (n = 484)

	Well-being	Self-control	Emotionality	Sociability	Total EI
Depression	-0.31**	-0.26**	-0.25**	-0.39**	-0.20**
Anxiety	-0.21**	-0.26**	-0.24**	-0.15**	-0.15**
Stress	-0.20**	-0.29**	-0.25**	-0.12**	-0.12**
Distress (Total DASS-21)	-0.39**	-0.30**	-0.27**	-0.17**	-0.17**
Life satisfaction	0.78**	0.13**	0.05	0.18**	0.18**

*Note: ** p < 0.01*

3.4. The role of emotional intelligence in predicting mental health among Hue university students

3.4.1. *The role of emotional intelligence in predicting mental health problems and life satisfaction among Hue university students*

Results from four simple linear regressions are presented in Table 4 with the independent variable was total EI, and the dependent variables were distress and life satisfaction (Model 1, Table 4). The total EI predicted negative symptoms of distress and could explain 13.2% of the change of distress (F = 75.89; *p* < 0.001). The value of Beta < 0 indicated that higher EI predicted lower symptoms of distress. In terms of EI's subscales (Model 2, Table 4), students with a high score in Well-being, Self-control, and Emotionality had a lower score of distress (p < 0.01), in which the Self-Control had the most potent prediction ability (Beta = -0.20; p < 0.001). Sociability, however, did not predict distress among students in this sample (p > 0.05).

Regarding life satisfaction, data analysis showed that total EI could explain 9.1% of the satisfaction with life (F = 51.18; p < 0.001). The value of Beta > 0 indicated that the higher EI, the higher life satisfaction. Only Well-being had a positive role in predicting life satisfaction with a higher Well-being score and higher life satisfaction (Beta = 0.42, p < 0.001). The VIF values in each model were < 2, revealed no multicollinearity in these regression models, and the model guarantees reliability [16].

Table 4. The role of EI and its components to distress and life satisfaction among
Hue university students (n = 484)

Models	Distress (DASS-21 total)				Life satisfaction			
	R²	F	p		R²	F	p	
1. Total EI	0.132	**75.89**	**<0.001**		0.091	**51.18**	**<0.001**	
2. EI's components	0.142	**20.53**	**<0.001**		0.164	**25.55**	**<0.001**	
	Beta	*T*	*p*	*VIF*	*Beta*	*T*	*p*	*VIF*
Well-being	-0.13	**-2.70**	**0.007**	1.42	0.42	**8.69**	**<0.001**	1.42
Self-control	-0.20	**-4.42**	**<0.001**	1.22	0.33	0.08	0.94	1.22
Emotionality	-0.18	**-3.89**	**<0.001**	1.18	0.39	-1.55	0.12	1.19
Sociability	0.01	0.11	0.912	1.37	0.37	0.28	0.78	1.37

3.4.2. *The role of emotional intelligence and its components in predicting depression, anxiety, and stress among Hue university students*

Table 5 presents the results of six multiple linear regressions. Models 3a, 3b, 3c predicted total EI to each type of mental health problem. Models 4a, 4b, 4c were the prediction of EI's components for each type of mental health problem among students.

Findings showed that total EI significantly impacted depression, anxiety, and stress. The total EI could predict a low level of depression, anxiety, and stress. The explanation ability ranged from 9.4% to 14.5%. The amplitude of the influence of total EI on each form of mental health problem was different, with the highest prediction was for depression ($R^2 = 0.144$, p < 0.001) and the lowest was for stress disorders ($R^2 = 0.094$, p < 0.001).

Regarding EI's components, findings revealed that Self-control and Emotionality could predict the negative aspects of mental health. This meant that students with higher ability in stress control, emotional regulation, empathy, and being able to recognize emotions of others and develop social relationships had a lower risk of experiencing depression, anxiety, and stress (p < 0.001 and p < 0.01). A high score in the well-being component predicted a lower risk of depression (p < 0.001); however, it did not work with anxiety and stress in this sample. Sociability could not predict any forms of mental health problems (p > 0.05).

Table 5. Estimation of the predictive linear regression model of EI to depression, anxiety,

and stress among Hue university students (n = 484)

Models	Dependent variables		
	a. Depression	b. Anxiety	c. Stress
3. Total EI (R² of the model)	0.144***	0.096***	0.094***
4. EI's components (Adjusted R² of the model)	0.140***	0.106***	0.124***
		Beta	
Well-being	-0.20***	-0.10	-0.07
Self-control	-0.14**	-0.18***	-0.23***
Emotionality	-0.13**	-0.16***	-0.19***
Sociability	-0.03	0.01	0.84

The prediction role of EI to mental health has been confirmed across studies. For example, the study by Lloyd et al. [25] showed that 1 point increased in EI could reduce the risk of having depression by 6%. Discovery from Batool and Khalid also revealed that high EI predicted 64% of low risk of depression [3]. This result repeated on prediction to low risk of depression and anxiety in university students [14]. The difference in the percentage of prediction might be due to the disparity in used measurements, such as Trait Meta-Mood Scale [46] for measuring EI and Beck's Depression Inventory [5] for measuring depression.

As expected, the positive role of EI in increasing life satisfaction was confirmed in this study. The feeling of happiness and satisfaction are essential components of either EI or satisfaction with life [26], [29].

4.   Conclusion and recommendations

4.1.   Conclusion

EI is the ability to understand and regulate one's emotions and empathize and behave appropriately with the feelings of others. EI is essential because it helps reduce the risk of mental disorders, and improve people's health and life satisfaction in young people. Therefore,

to provide a theoretical basis and practical evidence for future empirical studies on EI, it is necessary to strengthen research studies on EI to fulfil the overall picture of the role of EI to mental health in Vietnamese young people. Our study aims to investigate the relationship and predictive role of EI on the mental health of Hue university students. The results showed that the prevalence of Hue university students with symptoms of depression, anxiety, and stress is relatively high compared to other studies with the same age. That was a worrying sign from this study. However, the results also showed a positive aspect that the percentage of students with a good ability in EI was relatively high. Furthermore, EI had a positive correlation with life satisfaction and negatively correlated with depression, anxiety, stress, and distress. The ability to self-control, recognize, express, and regulate emotions, as well as manage stress and build relationships with others, had the potential role in reducing the incidence of mental problems and increasing mental health. The result of this study strengthens the evidence about the role of EI in students' mental health, from which educators can consider adjusting and integrating EI training programs for students at university. Significantly, the focus should be on developing the ability to recognize, express and regulate self-emotions, manage stress, and develop relationships with others to reduce the risk of mental illness and improve mental health for students studying at university.

4.2.   Limitations of this study and recommendation for future investigations

Despite significant results, we still recognize some fundamental limitations that should be noted in this study. First, this is a cross-sectional study, so the conclusions about correlation and predictability of EI to mental health can only be valid for the sample in this study. Moreover, a causal relationship is also difficult to conclude. The longitudinal direction of research can be a positive suggestion for other discoveries in the future. Second, the study uses self-completed questionnaires that may be affected by the subjectivity in students' self-reporting, such as inaccurate self-assessment or self-assessment according to society's expectations. Future studies, therefore, should be combined with other methods to limit this drawback such as structured interviews and observation. Third, although the TEIQue-SF has been used widely, it has not been officially validated among youth in Vietnam. Fourth, the data collection process was conducted when students returned to school from the second nationwide social distancing period due to the Covid pandemic. Therefore, factors related to Covid-19 may affect the incidence of mental health problems in this study. Fifth, other factors may affect students' mental health but have not been included in this study, such as finance, family composition, and personality... Based on these limitations, the conclusion from this study is recommended to be cautious when applying to a broader population outside this sample. Future directions for further research in related fields should overcome the above limitations.

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