Perception of happiness among medical students at Hai Phong University of Medicine and Pharmacy in 2024

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ABSTRACT

A cross-sectional study using a questionnaire based on the PERMA model was conducted on 538 medical students with the aim of assessing the happiness index and examining some related factors among students at Hai Phong University of Medicine and Pharmacy in 2024. The results showed that the average PERMA score among medical students was 6.55 ± 1.46. Among the five components, the highest average score was for Positive Relationships (R) at 6.93 ± 1.71, while the lowest was for Accomplishment (A) at 6.24 ± 1.66. The average PERMA score of male students (6.70 ± 1.55) were significantly higher than that of female students (6.43 ± 1.37), p = 0.016. The average PERMA score also varied by academic year, it was highest in first-year students, declined through the third year, and then gradually increased in the later years. Students who had part-time jobs had a significantly higher average Meaning (M) score (6.97 ± 1.54) than those who did not (6.67 ± 1.80), p = 0.02. There was a correlation between students' happiness levels and several factors: students with accomplishments had higher happiness levels than those without (OR = 1.4547, p = 0.042); students who did not have course repetition or improvement were happier than those who did (OR = 1.673, p = 0.004). Personal accomplishment and the absence of course repetition or improvement were identified as independent factors influencing the happiness levels of medical students at Hai Phong University of Medicine and Pharmacy.

Keywords: *PERMA happiness index, medical students*

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INTRODUCTION

Happiness is considered a high-level emotional state of human beings, a state of positivity and life satisfaction, often measured by levels of optimism and contentment across various aspects such as health, environment, relationships, work, and personal goals. Happiness is also seen as one of the essential indicators reflecting sustainable development and social progress. Nowadays, despite ongoing advancements in society and living standards, many factors still influence people's happiness and well-being. Happiness is both a subjective feeling and a challenge for many, especially among youth and students [1], [2]. Particularly for medical students, individuals preparing to become health professionals taking care of people's physical and mental health, building healthy mental health and maintaining happiness index is also one of the factors worth considering. Currently, medical students

often face long and intense study periods, that can affect their mental health and happiness index [3],[4],[5].

So, what is the happiness level among medical students at Hai Phong University of Medicine and Pharmacy? What factors affect their happiness index? These questions remain unanswered. Therefore, we conducted this study with two main objectives: 1) To determine the happiness index of medical students at Hai Phong University of Medicine and Pharmacy in 2024. 2) To examine factors related to the happiness index among the research students.

SUBJECT AND METHOD

Research subjects

The research was conducted on 538 medical students from first-year to fifth-year at Hai Phong University of Medicine and Pharmacy.

Inclusion criteria: medical students from first-year to fifth-year who agreed to participate in the research.

Exclusion criteria: medical students with incomplete data.

Research location

Hai Phong University of Medicine and Pharmacy.

Research Time

From October 2023 to May 2024.

Research design

A descriptive cross-sectional study.

Data collection method using the PERMA scale

In this study, we used the PERMA happiness scale developed by Julie Butler and Margaret L. Kern (2016), which was designed to measure happiness levels based on Martin Seligman's PERMA model.

The scale includes the following components: P - Positive Emotions; E - Engagement; R - Relationships; M - Meaning; A - Accomplishment.

Table 2.1. *PERMA happiness scale for students*

Scale	Code
Positive Emotions	**P**
In general, how often do you feel joyful ?	P01
In general, how often do you feel positive ?	P02
In general, to what extent do you feel contented ?	P03
Engagement	**E**
How often do you become absorbed in what you are doing ?	E01
In general, to what extent do you feel excited and interested in things ?	E02
How often do you lose track of time while doing something you enjoy ?	E03
Relationships	**R**
To what extent do you receive help and support from others when you need it ?	R01
To what extent do you feel loved ?	R02
How satisfied are you with your personal relationships ?	R03
Meaning	**M**
In general, to what extent do you lead a purposeful and meaningful life ?	M01
In general, to what extent do you feel that what you do in your life is valuable and worthwhile ?	M02
To what extent do you generally feel you have a sense of direction in your life ?	M03
Accomplishment	**A**
How much of the time do you feel you are making progress towards accomplishing your goals?	A01
How often do you achieve the important goals you have set for yourself ?	A02

How often are you able to handle your responsibilities ?	A03

Source: Adapted from the PERMA scale by Butler and Kern [6]

Each question was rated on a scale from 0 to 10. A score of 0 corresponded to "never," and a score of 10 corresponded to "always." Happiness levels based on the PERMA scale were classified as follows:

Very happy: 9–10 points

Happy: 8–8.9 points

Average: 6.5–7.9 points

Unhappy: 5–6.5 points

Very unhappy: below 5 points [2], [6].

Factors affecting the happiness index of students included gender, academic year, current residence, parents' marital status, part-time job, personal achievements, and course repetition or improvement.

Sample size and sampling method

Sample size

To estimate the happiness index of medical students at Hai Phong University of Medicine and Pharmacy in 2024, we accepted error (ε) of 0.015 with a 95% confidence level. Previous studies reported the standard deviation of the happiness index among students as σ = 1.24, and the mean happiness index as μ = 7.24 [7]. The formula used to estimate the required sample size for a mean value was:

$$n = Z^2_{1-\alpha/2}\frac{\sigma^2}{\varepsilon^2\ \mu^2} = 1.96^2 x\ \frac{1.24^2}{0.015^2 * 7.24^2} = 501$$

The minimum sample size required for the study was 501 students.

Cluster sampling method, each course was a cluster, in each course was randomly selected, in reality n = 538 students, including 108 first-year students, 102 second-year students, 107 third-year students, 102 fourth year-students, 118 fifth-year students.

Data collection methods and tools

This was a cross-sectional study conducted on 538 students. The tool was a student happiness questionnaire.

Bias and bias control

Bias

Bias due to data collection was recall bias and bias in the process of data entry and data processing.

Bias control

Questions were explained thoroughly to minimize misunderstandings by respondents. Investigators were carefully trained to understand the questionnaire's content and were supervised throughout the process to ensure accurate data collection. Conduct a pilot survey to perfect the tool.

Data analysis

Data analysis using medical statistical algorithms, including mean, standard deviations, and percentages. Differences between proportions were compared using the Chi-square test, and differences between means were compared using One-Way ANOVA. Odds Ratio (OR) analysis and multivariable analysis were used to identify factors associated with the research indicators. All statistical analyses were performed using SPSS version 20.0.

Research ethics

The research subjects were clearly informed about the project and voluntarily consented to participate or withdraw from the study at any time. Personal information of the research subjects was kept confidential, and the collected data were used solely for research purposes. The research protocol was approved by the Ethics Committee of Hai Phong University of Medicine and Pharmacy.

RESULTS

The happiness index of medical students at Hai Phong University of Medicine and Pharmacy in 2024

Evaluation of the happiness scale for students

Table 3.1. *Evaluation table of the happiness scale for students*

Index	Cronbach's Alpha test	
	Cronbach' Alpha	**Corrected item – total correlation**
P	0.922	0.798
E	0.839	0.667
R	0.886	0.753
M	0.874	0.741
A	0.901	0.788

The results of the Cronbach's Alpha test showed that the scales measuring students' happiness were high reliability because the Cronbach's Alpha coefficient of the scales ranged from 0.839 to 0.922 (greater than 0.6) and the corrected item – total correlation of the observed variables was greater than 0.3.

The happiness index of the research subjects

Table 3.1. *The PERMA happiness index and component factors of the research subjects*

Component	Index (n = 538)				
	$\overline{X}$ ± SD				
	P	**E**	**R**	**M**	**A**
01	6.75 ± 1.96	6.83 ± 1.74	7.04 ± 1.89	6.72 ± 2.00	6.42 ± 1.79
02	6.39 ± 1.96	6.48 ± 1.92	6.64 ± 1.92	7.08 ± 1.79	6.03 ± 1.86
03	6.38 ± 1.90	5.44 ±2.38	7.12 ± 1.88	6.62 ± 1.86	6.26 ± 1.81
Average	6.51 ± 1.80	6.25 ±1.77	6.93 ± 1.71	6.81± 1.69	6.24 ± 1.66
PERMA	**6.55 ± 1.46**				

The average PERMA index score among medical students was 6.55 ± 1.46. Among the components of the PERMA index, the average score for Relationships (R) was the highest at 6.93 ± 1.71, while the average score for Accomplishment (A) was the lowest at 6.24 ± 1.66.

Factors related to the happiness index of medical students at Hai Phong University of Medicine and Pharmacy in 2024

The happiness index of the research subjects by gender

Table 3.3. *The happiness index of the research subjects by gender*

Index	Gender		Total (n=538)	p
	Male (n=229)	Frmale (n=309)		
	$\overline{X}$ ± SD	$\overline{X}$ ± SD		
P	6.73±1.90	6.34±1.72	6.51±1.80	**0.006**
E	6.42±1.85	6.12±1.69	6.25±1.77	0.051
R	6.91±1.90	6.95±1.56	6.93±1.71	0.7782
M	7.00±1.89	6.66±1.51	6.81±1.69	**0.011**
A	6.45±1.70	6.08±1.62	6.23±1.67	**0.0046**

PERMA	6.70±1.55	6.43±1.37	6.55±1.46	**0.016**

The average scores of the happiness components in the PERMA scale differed between male and female students, with most of the happiness factors being higher in males than in females. The overall PERMA happiness index of male students were higher than that of female students, p = 0.016.

The happiness index of the research subjects by current residence

Table 3.4. *The happiness index of the research subjects by current residence*

Index	Current residence		p
	Not living with family (n=501) $\overline{X}$ ± SD	Living with family (n=37) $\overline{X}$ ± SD	
P	6.45±1.79	7.29±1.90	**0.003**
E	6.20±1.77	6.85±1.59	**0.016**
R	6.90±1.67	7.32±2.11	0.149
M	6.76±1.68	7.41±1.74	**0.013**
A	6.20±1.66	6.79±1.62	**0.018**
PERMA	6.60±1.38	6.37±1.70	0.111

The average scores of the P, E, M, A factors among students living with their families were higher than those of students living in dormitories or rented accommodations, p < 0.05.

The happiness index of the research subjects by academic year

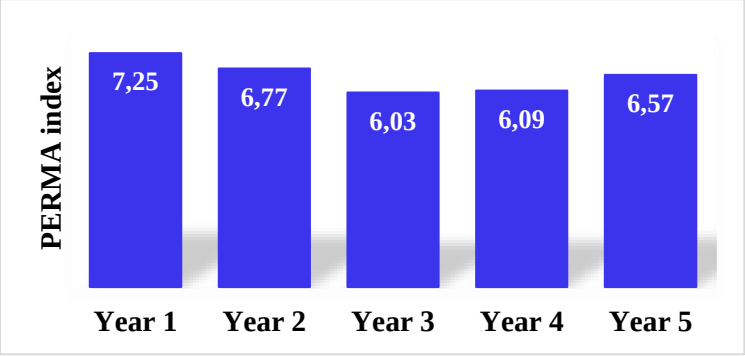

Figure 3.1. *Happiness index of students by year*

First-year students reported the highest average PERMA happiness score (7.25), while third-year students reported the lowest (6.03) (p < 0.05).

The happiness index of the research subjects by personal achievements

Table 3.5. *The happiness index of the research subjects by personal achievements*

Index	Achievement		p
	Yes (n=215) $\overline{X}$ ± SD	No (n=323) $\overline{X}$ ± SD	
P	6.71±1.77	6.37±1.82	**0.014**
E	6.57±1.73	6.03±1.76	**0.003**
R	7.15±1.62	6.79±1.76	**0.008**
M	7.12±1.63	6.60±1.70	**0.0002**

A	6.58±1.63	6.01±1.65	**0.0000**
PERMA	6.83±1.43	6.35±1.49	**0.0001**

There was a significant difference in the mean happiness index between students with and without personal achievements, with the former scoring higher ($p < 0.05$).

The happiness index of the research subjects by their status of course repetition or improvement

Table 3.6. *The happiness index of the research subjects by their status of course repetition or improvement*

Index	*Course repetition or improvement*		**p**
	Yes (n=226) $\overline{X} \pm SD$	**No (n=312)** $\overline{X} \pm SD$	
P	6.17±1.73	6.75±1.82	**0.0001**
E	5.87±1.70	6.52±1.77	**0.0000**
R	6.67±1.71	7.13±1.69	**0.001**
M	6.49±1.63	7.03±1.69	**0.0001**
A	6.05±1.56	6.38±1.73	**0.011**
PERMA	6.25±1.38	6.76±1.48	**0.0001**

There was a significant difference in the mean PERMA happiness index between students who had academic remediation and those who did not, with the latter scoring higher ($p < 0.05$).

The happiness index of the research subjects by parents' marital status

Table 3.7. *The happiness index of the research subjects by parents' marital status*

Index	**Parents' marital status**		**p**
	Parents together (n=490) $\overline{X} \pm SD$	**Parents not together (n=48)** $\overline{X} \pm SD$	
P	6.47±1.79	6.81±1.96	0.227
E	6.24±1.76	6.34±1.80	0.704
R	6.94±1.69	6.87±1.95	0.785
M	6.81±1.67	6.81±1.91	0.996
A	6.25±1.65	6.06±1.79	0.447
PERMA	6.54±1.45	6.58±1.57	0.880

There was no significant difference in the PERMA happiness index based on parental marital status.

The happiness index of the research subjects by part-time job status

Table 3.8. *The happiness index of the research subjects by part-time job status*

Index	**Part-time job**		**p**
	Yes (n=248) $\overline{X} \pm SD$	**No (n=290)** $\overline{X} \pm SD$	

P	6.53±1.74	6.49±1.86	0.800
E	6.35±1.68	6.16±1.83	0.223
R	7.05±1.50	6.83±1.87	0.151
M	6.97±1.54	6.67±1.80	**0.020**
A	6.38±1.53	6.11±1.77	0.060
PERMA	6.65±1.37	6.45±1.53	0.111

Among the components of the PERMA index, the mean score for Meaning (M) in the group that worked part-time (6.97 ± 1.54) was higher than in the group that did not (6.67 ± 1.80), p = 0.02.

Multivariate analysis of factors related to the happiness level of the research subjects

Table 3.9. *Multivariate analysis of factors related to the happiness level of the research subjects*

Factors	**Happiness level**		**Adjusted OR (95% CI)**	**p**
	Medium-High	**Low**		
Gender				
Male	126 (45.82%)	103 (39.16%)	1.3113 (0.9245 – 1.8597)	0.128
Female	149 (54.18%)	160 (60.84%)		
Living with family				
Yes	23 (8.36%)	14 (5.32%)	0.7300 (0.3624 – 1.4704)	0.378
No	252 (91.64%)	249 (94.68%)		
Achievement				
Yes	125 (45.45%)	90 (34.22%)	**1.4547 (1.0139 – 2.0871)**	**0.042**
No	150 (54.55%)	173 (65.78%)		
Course repetition or improvement				
No	179 (65.09%)	133 (50.57%)	**1.6773 (1.1770 – 2.3907)**	**0.004**
Yes	96 (34.91%)	130 (49.43%)		
Part-time job				
Yes	138 (50.18%)	152 (57.79%)	1.0870 (0.7573 – 1.5602)	0.651
No	137 (49.82%)	111 (42.21%)		
Total	275	263		

The multivariate analysis showed that students with personal achievements were 1.4547 times more likely to have a higher level of happiness compared to those without, p = 0.042. Additionally, students who did not have course repetition or improvement were 1.6773 times more likely to have higher happiness than those who did, p = 0.004.

DISCUSSION

The happiness index of medical students at Hai Phong University of Medicine and Pharmacy in 2024

In Vietnam, the PERMA scale had been standardized through the steps of converting from English to Vietnamese, adjusting the questions, conducting a pilot survey of students to check their understanding of the questions, and perfecting the scale. Many studies had also tested the Cronbach's Alpha coefficient and the corrected item – total correlation to meet the reliability requirements for use with Vietnamese students [2],[7],[8]. The Cronbach's Alpha test results in Table 3.1 showed that the happiness scale used for the students in this research had a reliability coefficient because the Cronbach's Alpha coefficients of the scales ranged from 0.839 to 0.922 (all above 0.6), and the corrected item – total correlation ranged from 0.667 to 0.798 (all above 0.3).

The findings in Table 3.2 indicated that the overall happiness index of medical students at Hai Phong University of Medicine and Pharmacy in 2024 was 6.55 ± 1.46, which was a moderately high level based on the PERMA scale. The average scores of each PERMA component ranged from highest to lowest as follows: positive emotion (P), relationships (R), meaning (M), engagement (E), and accomplishment (A). Notably, the highest score belonged to relationships (R), suggesting that medical students tend to feel happier when surrounded by positive social support systems. Many students reported having friends, being well cared by family, and receiving encouragement from their surroundings, which made them feel more joyful, fulfilled, and emotionally supported both in life and in school. These results were consistent with findings from a similar study on students at the University of Languages and International Studies – Vietnam National University in 2019 [7]. This similarity might be attributed to the fact that the research subjects were university students who received care and support from their families, lecturers, and peers, and who commonly faced academic pressure in the classroom as well as during internship periods.

In contrast, the components of engagement (E) and accomplishment (A) had lower mean scores. Specifically, the accomplishment (A) score among medical students was 6.24 ± 1.66. This might be related to students' goals, expectations, and sense of responsibility toward their studies as well as their personal lives. The previous study at the University of Languages and International Studies also showed that accomplishment scores were lowest among students (7.42) [7].

When comparing the overall happiness scores with other studies on university students in Da Nang or at Vietnam National University, the medical students' scores were lower. The above result might be attributed to the fact that medical students had an extended period of study with a demanding curriculum, which required both theoretical knowledge in the classroom and clinical practice and on-duty at the hospital. As such, achieving high academic performance was not an easy task. These

factors made achieving a high level of happiness more difficult [7],[8].

Factors related to the happiness index of medical students at Hai Phong University of Medicine and Pharmacy in 2024

Gender

The results from Table 3.3 showed that the average happiness scores for PERMA overall and components P, M, A were higher among male students than females, with $p < 0.05$. However, analysis from Table 3.9 indicated no statistically significant relationship between gender and happiness level. This suggested that although male students had slightly higher average happiness scores than female students, the overall difference in happiness levels was not statistically significant. This was consistent with findings from Dinh Thi Thi, Le Thai Phuong, and others, who also reported no significant gender differences in perceived happiness among university students in Da Nang [2],[8].

Living residence

According to Table 3.4, the average scores for the components P, E, M, and A were significantly higher ($p < 0.05$) among students living with family compared to those living in dormitories or rented accommodations. However, Table 3.9 shows no statistically significant correlation between living arrangement and overall happiness. A study by Surendra Kulkarni and Cholakkar Sanjeev also suggested that happiness was higher among students who lived with their families [4].

Thus, students who lived with their families tended to receive more direct care and support from their loved ones, allowing them to worry less about daily life and, as a result, felt happier. However, the number of students living with their families in this study (37 students) was considerably lower compared to those not living with their families (501 students).

Academic year

The results from Table 3.5 showed that the average PERMA happiness index of students varied significantly across different academic years. Among them, the highest happiness score was found in first-year students (7.25 ± 1.42), while the lowest was in third-year students (6.04 ± 1.54), with a rising trend observed in subsequent years. This variation might be explained by differences in curriculum and students' level of adaptation throughout their academic journey. For instance, first-year students studied entirely on campus and had not yet participated in clinical internships at hospitals, allowing them more time for rest and leisure. In contrast, students in the following years began clinical practice and hospital shifts, with increasing academic and skill demands each year. Additionally, peer pressure may intensify as classmates prepared for graduation and began to earn an income. In the later academic years, the upward trend in happiness scores might reflect students' improved adaptation to their learning environment and program after years of training. Furthermore, it was possible that both first- and final-year students received more attention and support from their families, friends, and the university. These observations wera consistent with the findings of Dinh Thi Thi and Le Thai Phuong on students' perceptions of happiness [2],[8].

Achievements

The research findings in Table 3.5 indicated that the overall average PERMA happiness index, along with its components P, E, R, M, A were higher among students who had personal accomplishments compared to those who did not. Our observation was

similar to the study by Dinh Thi Thi and Le Thai Phuong on students at universities in Da Nang. This suggested that when students attained certain personal achievements, they felt that their efforts were recognized and valued. Moreover, such accomplishments contributed to enhancing students' positive emotions. These insights highlighted the importance of universities paying attention to factors related to student achievement as a means to improve overall student happiness [2],[7].

Course repetition or improvement

The results in table 3.6 showed that the overall average PERMA happiness index and the components P, E, R, M, and A were higher among students who had not course repetition or improvement compared to those who had. This might be attributed to the fact that students who had course repetition or improvement might not have achieved the academic results they had hoped for. Additionally, these students had to pay extra tuition fees and devoted more time and efforted to their studies. These factors might contribute to the lower happiness index observed in this group compared to their peers. This observation was also consistent with the findings related to personal achievement presented in Table 3.5.

Parents' marital status

The research findings in Table 3.7 indicated that there was no significant difference in the happiness index between students whose parents lived together and those whose parents did not. This might be due to an increased level of awareness and acceptance among students, as well as a shift in societal attitudes, which had become less rigid regarding marital status.

Part-time job

Table 3.8 showed that among the components of the PERMA index, the average score for Meaning M) was higher in the group of students who worked part-time compared to those who did not, with p = 0.02. This might be because students who took part-time jobs had an additional source of income to support their education and personal expenses. However, this often came at the cost of being busier and having less time to rest. It was also possible that these students received little or no financial support from their families. Overall, having a part-time job might be a factor that helps students find more meaning in their lives.

Multivariate analysis of factors related to the happiness level of the research subjects

The findings from Table 3.9, which presented a multivariate analysis of factors associated with the happiness levels of medical students, indicated that students with personal achievements were 1.4547 times more likely to report higher happiness levels than those without, with p = 0.042. Similarly, students who had not course repetition or improvement was 1.6773 times more likely to have higher happiness levels than those who had, with p = 0.004. These results were consistent with the univariate analysis, which also revealed associations between personal achievement and student happiness, as well as between course repetition/improvement and happiness. Therefore, personal achievement and course repetition/improvement were independent factors influencing the happiness levels of medical students at Hai Phong University of Medicine and Pharmacy.

CONCLUSION

The average PERMA happiness index score among medical students was 6.55 ± 1.46, with the highest average score observed in

Relationships (R) at 6.93 ± 1.71, and the lowest in Accomplishment (A) at 6.24 ± 1.66.

The average PERMA happiness index score of male students (6.70 ± 1.55) was higher than that of female students (6.43 ± 1.37), p = 0.016. The average PERMA happiness index varied across academic years, with the highest score observed in first-year students, gradually decreasing and reaching the lowest in third-year students, then increasing again in the following years. The average score for Meaning (M) was higher among students who had part-time jobs (6.97 ± 1.54) compared to those who did not (6.67 ± 1.80), p = 0.02.

There was a relationship between students' happiness levels and students achievement and course repetition/improvement. Students who had personal achievements reported higher happiness levels than those without (OR = 1.4547, p = 0.042). Students who had not course repetition/improvement reported higher happiness levels than those who had (OR = 1.673, p = 0.004). Personal achievement and course repetition/improvement were independent factors that influenced the happiness levels of medical students at Hai Phong University of Medicine and Pharmacy.

RECOMMENDATIONS

Medical students perceive a strong influence of personal achievement and course repetition/improvement on their happiness index. This finding suggests the need for psychological support interventions to help students manage stress and reduce the pressure of setting overly high expectations for themselves. Moreover, course repetition or improvement should be viewed as an opportunity for students to enhance their knowledge and skills, thereby promoting personal development and increasing their overall happiness.

It is also essential for universities and families to maintain regular communication and provide greater care and support to students throughout their academic journey, especially during the transition from classroom-based learning to clinical training in hospitals.

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