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The Relationship Between Emotional Intelligence and Stress Among Pharmacy Students at Universiti Teknologi MARA Puncak Alam During COVID-19 Pandemic

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ABSTRACT

Emotional intelligence (EI), which is described as a set of skills to recognise and control one's own emotions and other people, is believed to act as a protective factor against negative stress. Recently, stress and online learning readiness (OLR) have become an increasing concern among the students during the recent COVID-19 pandemic. Therefore, this study aimed to determine the relationship between EI and demographic profiles (gender, year of study and geographical living area), and to find the correlation between EI and stress, as well as between stress and OLR among the pharmacy students during the pandemic. This study involved a cross-sectional correlational study, where an online-based survey was performed involving 315 pharmacy students, from first to the fourth year, at Universiti Teknologi MARA (UiTM) Puncak Alam, Malaysia. Three valid and reliable questionnaires were used namely Universiti Sains Malaysia Emotional Quotient Inventory (USMEQ-i), Perceived Stress Scale (PSS), and Online Learning Readiness Scale (OLRS). The data were analysed by SPSS software version 27. In the study, the respondents' EI was at the average level. No association between EI and demographic profiles was found. A weak negative correlation was found between EI and stress $r(313) = -0.272$, $p < 0.05$ as well as between stress and OLR, $r(313) = -0.320$, $p < 0.05$. This study suggested that EI could act as a protective element against stress since both were negatively correlated. A negative correlation found between stress and OLR reflects that increased stress levels can potentially give a negative impact on the OLR of the pharmacy students in UiTM Puncak Alam.

Keywords: *Emotional intelligence, USM Emotional Quotient Inventory (USMEQ-i), Stress, Online learning readiness, Pharmacy students*

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INTRODUCTION

Emotional intelligence (EI) is identified as a collection of skills to acknowledge, understand, evaluate and regulate self-emotions and those of other people or groups (1–2). The concept of EI was first introduced by John Mayer and Peter Salovey in the 1990s, who proposed that EI enables an individual to handle emotions, differentiate between the negative and positive outcomes of the emotions and utilise emotional information faithfully before making decisions and personal actions (3). A famous journalist, Daniel Goleman brought the concept of EI to the public through his book entitled "Emotional intelligence: Why it can matter more than IQ" (1). Goleman (1) viewed EI as the capability to self-motivate within stressful situations and self-management of the detrimental effects of distress on thinking abilities. EI helps individuals to be aware of their feelings and moods, thus enabling them to make appropriate decisions and actions (4). In other words, individuals with high EI levels are said to be self-aware, positive and flexible as they know how to control and regulate their emotions even under complicated situations that may cause mood swings, stress, anxiety, temper and depression. Instead of being overwhelmed by immediate irrational wishes, individuals with high EI levels handle tough situations peacefully and reasonably (5–6). Emotionally intelligent people are not easily influenced by any detrimental effect of difficulties, thus enabling them to maintain their work performances in their daily activities (7). EI was further categorised into seven domains, namely, emotional control, emotional maturity, emotional conscientiousness, emotional awareness, emotional commitment, emotional fortitude, and emotional expression. Emotional control refers to the skill of self-control from impulsive and troublesome feelings. Emotional maturity is considered as the skill to facilitate and lead emotional tendencies in attaining the desired goals. Next, emotional conscientiousness is the capability to take responsibility and uphold integrity for personal performance, whereas emotional awareness is defined as the capability to recognise and understand self and others' emotions, internal states, perceptions, fondness, resources and their effects. Besides, emotional commitment refers to the skill to align, cooperate and work with others in a team or organisation to achieve the same goals, while emotional fortitude refers to the skill to negotiate, confer, consult and solve arguments, as well as send persuasive messages. Lastly, emotional expression is defined as the skill to demonstrate, convey and adapt to other's emotions, behaviours and perceptions of changing situations and conditions.

In psychology, stress is defined as a feeling during a state of psychological pressure (3). It is also defined as the physical, mental and chemical response of an individual's body to some situations that cause feelings of fear, worry, panic, eagerness, impatience, anxiety, annoyance, or anger (3). Mild stress has been an ordinary matter in every student's life. However, the current COVID-19 pandemic outbreaks had led stress issues among the students to an increasing concern (8). Previous studies on pandemic outbreaks such as Ebola, Middle Eastern Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS) revealed that the pandemics affect the mental health of the populations including students (8). Similarly, the recent COVID-19 pandemic may cause mental health burden among the students worldwide as the pandemic accentuates new stressors, especially changes in learning systems, that have affected students in 129 countries around the world (9). The other new stressors include social isolation, strict lockdowns, travel bans, curfews, financial problems, poor internet connection, increased class workloads, uncertainty related to their academic performances, poor time management, and sleeping disorders (9–11). Some students also suffer from difficulties focusing during online classes as they view their homes as

a source of distraction and lack of effective learning environment (9). Besides, it has been reported that some students were stressed as they lose motivation and increase procrastination due to consequences of social isolation such as loneliness and boredom (10).

The COVID-19 pandemic has changed the education system at the national level (12). At the moment, students are not allowed to attend face-to-face lectures and in-person teaching (13). There are a plethora of factors, difficulties, and limitations of online learning that may cause the students to undergo a stressful learning experience (14). Online learning readiness (OLR) among students is the foundation for effective online learning during the pandemic. Hence, it is essential to measure OLR which includes various factors and dimensions such as psychological, environmental, technological skills, equipment, sociological, human resources, financial and content readiness (12). Moreover, a study claimed that there are five dimensions of OLR that are critical to online learning which are computer/internet self-efficacy, self-directed learning, motivation for learning, learner control and online communication self-efficacy (15).

A significant elevation of stress levels among the students can affect their mental and physical health, which consequently impacts their academic accomplishments (16). Stress may also have an impact on OLR among the students during the pandemic (17). Therefore, students need to be well-adapted to the current COVID-19 new norms. At the moment, various studies have linked EI to stress (3–4, 10, 18–19). Many researchers claimed EI serves as a protective factor against stress, as it essentially involves understanding and regulating emotional responses, especially during stress (20–21). A few studies concluded that students with higher EI have lower stress and depression (4, 18–19, 22).

The objectives of this study were to determine the relationship between EI and demographic profiles, as well as the correlation between EI and stress, also between stress and OLR. This study was beneficial as it revealed the level of EI, stress and OLR among the students during the pandemic outbreaks. Evaluation of these variables is important as high EI level, low-stress level and high OLR are crucial among the pharmacy students during their preparation to become a pharmacist that carries huge responsibility and accountability in the safety and effective use of medications. High EI levels can assist students to resist stress and strengthen their decision-making skills, thus helping them succeed in their academic and clinical training. According to John Mayer and Peter Salovey (1997) cited in Serrat (2), although some people are born with high EI levels, EI can be also enhanced and learned by self-motivation, extensive practice and others. Therefore, this study will provide beneficial information to Universiti Teknologi MARA (UiTM) Puncak Alam, educational institution to determine whether there is a need to set up more programmes to expose students to the concept of EI to improve their EI level. This study also revealed the students' OLR, thus providing information on whether there is a need for the faculty to redesign better online platforms to guide students towards effective, successful and fruitful online learning. Further, this study will serve as a reference and guidance for future academic research in EI with various other topics and variables.

MATERIALS AND METHODS

Study Design

A quantitative study and cross-sectional correlational research design were conducted. This study design was selected to determine and describe the study variables which were demographic profiles,

EI, stress and OLR. Besides, correlational research was conducted to describe the relationship between the variables and identify whether the relationship has a positive, negative, or zero correlation.

Population and Sampling

The population consisted of 701 pharmacy students enrolled full-time in the Bachelor of Pharmacy at UiTM Puncak Alam, Malaysia, from the first to the fourth year. Based on the calculation by Raosoft Sample Size Calculator, calculated at 95% confidence interval, 5% margin of error and 50% response distribution, 249 respondents are required as the minimum total number of samples. Three hundred and fifteen respondents filled out the online survey.

Instrumentation

A self-administered online-based questionnaire was created in the Google Forms and was distributed to every batch of pharmacy students through the WhatsApp application. The questionnaire was derived from published and validated questionnaires which were Universiti Sains Malaysia Emotional Quotient Inventory (USMEQ-i), Perceived Stress Scale (PSS) and Online Learning Readiness Scale (OLRS) (6, 23–24). USMEQ-i was developed by Muhamad Saiful Bahri Yusoff and others, was first published in February 2010 to measure the EI level of medical students in Malaysian universities. A total of 46 questions with seven domains of EI; emotional control, emotional maturity, emotional conscientiousness, emotional awareness, emotional commitment, emotional fortitude, and emotional expression, was remained after validation procedures that were done on students from all over Malaysia, which are multiethnic, multireligion and multicultural. It was primarily created in Malay, but available as bilingual, making it a more reliable and valid instrument to measure the EI level of Malaysian students. The result of the procedure stated that USMEQ-i is valid and reliable with high internal consistency; Cronbach's alpha coefficient value of 0.96 (6). Next, PSS was designed to measure individual stress levels, originally developed in 1983. It is an easy-to-use instrument with established acceptable psychometric properties. Several studies reported good internal consistency, reliability and validity. It is stated that PSS is suitable for all subpopulation groups as the questions are general and easy to understand. Moreover, a study reported that the Malay version of PSS demonstrated a satisfactory level of validity and reliability to assess stress among Malaysians (23). Next, OLRS is an instrument that consists of five different dimensions, namely, computer/internet self-efficacy, self-directed learning, motivation for learning, learner control and online communication self-efficacy, which were designed to assess student's readiness for the online learning environment. OLRS was reported as a validated instrument and reliable within the Malaysian context. The value of composite reliability for all five dimensions was more than the acceptable value of 0.7 (24).

The online-based questionnaire comprised of four sections which were Sections A, B, C and D. Section A was related to demographic profiles which have three questions related to the students' backgrounds (gender, year of study and geographical living area). Section B was used to measure the EI level which consisted of 46 questions in total, taken from the USMEQ-i. Respondents' answers were rated through a 5-point Likert scale ranging from 0 = unlike me to 4 = totally like me. Section C was used to measure the stress level which consisted of 10 questions, taken from the PSS. The questions were scored through a 5-point Likert scale ranging from 0 = never to 4 = very often. Finally, Section D was used to measure the online learning readiness which consisted of 18 questions, taken from the OLRS. The questions were scored through a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

Statistical Analysis

The data collected were analysed using Statistical Package for Social Sciences (SPSS) software version 27. Descriptive statistics were used to describe the demographic profiles, EI level and stress level of the participants. Inferential statistics were used to answer the research objectives. Chi-square tests were conducted to find the relationship between EI level and the demographic profiles of the participants. In addition, an independent *t*-test was conducted to know the influence of gender on the EI level, whereas one-way ANOVA was conducted to know the effect of year of study and geographical living area on the EI level. Chi-square tests were also conducted to determine the association between EI domains and demographic profiles and stress levels. For not normally distributed data, the Mann-Whitney U test and Kruskal-Wallis H tests were used to determine the influence of demographic profiles on EI domains among the participants. Lastly, Spearman's rank-order correlations were performed to correlate EI and stress and to correlate stress and OLR.

RESULTS

Demographic Profiles

The online survey was distributed to a total of 701 pharmacy students. Three hundred and fifteen respondents filled out the survey. With a response rate of 44.9%, the majority of participants were female (n = 275, 87.3%). Of 315 responses, 98 (31.1%) were from the first year, followed by 87 (27.6%) from the second year, 70 (22.2%) from the third year, and 60 (19.0%) from the fourth year of study. Majority of participants lived in urban geographical living area (n = 135, 42.9%) and the remaining lived in rural area (n = 94, 29.8%) and suburban area (n = 86, 27.3%).

EI Level, EI Domains and Stress Level

This study revealed that the majority of the students have an average level of EI (n = 198, 62.9%). One hundred and fifteen (36.5%) of students were reported to have a high level of EI while the remaining 2 (6.0%) students had a low level of EI. EI was further categorised into seven domains, namely, emotional control, emotional maturity, emotional conscientiousness, emotional awareness, emotional commitment, emotional fortitude, and emotional expression (6). More than half of the participants scored high in emotional conscientiousness (n = 192, 61.0%) and emotional expression (n = 204, 64.8%). Moreover, more than half of the participants scored average level in emotional control (n = 230, 73.0%), emotional maturity (n = 167, 53.0%), emotional awareness (n = 215, 68.3%), emotional commitment (n = 219, 69.5%) and emotional fortitude (n = 184, 58.4%). The results of the descriptive analysis are summarised in Tables 1 and 2. The majority of the students are reported to have a moderate level of stress which accounted for 255 (81.0%) of the students. Forty-one (13.0%) of the students were recorded to score a low level of stress and 19 (6.0%) of the students scored a high level of stress.

Table 1: Descriptive analysis of demographic profiles

Demographic profiles	Description	Respondents *N* = 315 (%)
Gender	Male	40 (12.7)
	Female	275 (87.3)
Year of study	First	98 (31.1)
	Second	87 (27.6)
	Third	70 (22.2)
	Fourth	60 (19.0)
Geographical living area	Rural	94 (29.8)
	Suburban	86 (27.3)
	Urban	135 (42.9)

Table 2: Descriptive analysis of EI level, EI domains and stress level

EI	Description	Respondents *N* = 315 (%)
EI level	Low	2 (6)
	Average	198 (62.9)
	High	115 (36.5)
EI domains		
Emotional control	Low	28 (8.9)
	Average	230 (73.0)
	High	57 (18.1)
Emotional maturity	Low	5 (1.6)
	Average	167 (53.0)
	High	143 (45.4)
Emotional conscientiousness	Low	4 (1.3)
	Average	119 (37.8)
	High	192 (61.0)
Emotional awareness	Low	9 (2.9)
	Average	215 (65.3)
	High	91 (28.9)
Emotional commitment	Low	15 (4.8)
	Average	219 (69.5)
	High	81 (25.7)
Emotional fortitude	Low	9 (2.9)
	Average	184 (58.4)
	High	122 (38.7)
Emotional expression	Low	2 (0.6)
	Average	109 (34.6)
	High	204 (38.7)
Stress level	Low	41 (13.0)
	Moderate	255 (81.0)
	High	19 (6.0)

The Relationship Between EI and Demographic Profiles

A Chi-square test was performed to determine whether there were any associations between EI level and demographic profiles. The significance value (p-value) for the association between EI and demographic profiles are listed in Table 3. The findings show no relationship between EI and gender (p = 0.318), year of study (p = 0.504) and geographical living area (p = 0.143). Besides that, an independent t-test was conducted to test for differences in EI level with gender. This study revealed that there was no significance difference between level of EI with gender (t[313] = –1.362, p = 0.174). Apart from that, a one-way ANOVA was conducted to test for differences in EI level with the year of study and geographical living area. Results showed there was no significant difference between the level of EI with the year of study, F(3, 311) = 1.940, p = 0.123. There was also no significant difference between EI level with geographical living area, F(2, 312) = 2.909, p = 0.056.

Table 3: The relationship between EI (EI level and EI domains) with demographic profiles

EI	Demographic profiles *p*-value		
	Gender	**Year of study**	**Geographical living area**
EI level	0.318	0.504	0.143
EI domains			
Emotional control	0.723	0.192	0.916
Emotional maturity	0.498	0.096	0.623
Emotional conscientiousness	0.448	0.389	0.243
Emotional awareness	0.608	0.319	0.117
Emotional commitment	0.203	0.152	0.048
Emotional fortitude	0.015	0.191	0.422
Emotional expression	0.000	0.570	0.066

The Relationship Between EI Domains and Demographic Profiles

A Chi-square test was performed to determine whether there were any associations between EI domains and demographic profiles. The significance value (*p*-value) for the association between each EI domain and demographic profiles are listed in Table 3. The *p*-value ($p > 0.05$) indicated there was no relationship between gender and emotional control ($p = 0.723$), emotional maturity ($p = 0.498$), emotional conscientiousness ($p = 0.448$), emotional awareness ($p = 0.608$), and emotional commitment ($p = 0.203$). Meanwhile, the *p*-value ($p < 0.05$) for the indicated gender was associated with emotional fortitude ($p = 0.015$) and emotional expression ($p = 0.000$). A Mann-Whitney U test was also used to know the influence of gender on each EI domain among the respondents. Mann-Whitney U test was statistically significant ($U = 4{,}216$, $p = 0.016$) for emotional expression with gender. Female respondents (mean rank = 162.67) had higher emotional expression compared to male respondents (mean rank = 125.90). Thus, the results indicated that gender influenced emotional expression.

In addition, the *p*-value ($p > 0.05$) for each EI domain with the year of the study indicated there is no relationship between each EI domain with the year of study. Moreover, the *p*-value ($p > 0.05$) indicated there was no relationship between emotional control, emotional maturity, emotional conscientiousness, emotional awareness, emotional fortitude, and emotional expression with geographical living areas. Meanwhile, the *p*-value ($p < 0.05$) indicated emotional commitment and geographical living area are associated with each other ($p = 0.048$).

The Correlation Between EI and Stress

A Spearman's rank-order correlation was used to determine the correlation between EI and stress score. This study revealed a weak, negative correlation between EI and stress, which was statistically significant [$r(313) = -0.272$, $p < 0.001$]

The Correlation Between EI Domains and Stress

A Spearman's rank-order correlation also was used to determine the correlation between EI domains and stress, which were listed in Table 4. Results showed there was a statistically significant ($p < 0.001$), weak, negative correlation between stress and emotional control ($r = -0.364$), emotional maturity ($r = -0.225$), emotional commitment ($r = -0.229$), emotional fortitude ($r = -0.253$) and emotional expression ($r = -0.128$).

Table 4: The correlation between EI (EI level and EI domains) and stress

EI	Stress	
	***r* value**	***p*-value**
EI level	–0.272	0.000
EI domains		
Emotional control	–0.364	0.000
Emotional maturity	–0.225	0.000
Emotional conscientiousness	–0.059	0.293
Emotional awareness	–0.062	0.273
Emotional commitment	–0.229	0.000
Emotional fortitude	–0.253	0.020
Emotional expression	–0.128	0.024

The Correlation Between Stress and OLR

A Spearman's rank-order correlation was used to determine the correlation between stress and OLR. The findings revealed a weak, negative correlation between stress and OLR, which was statistically significant ($r[313] = –0.320$, $p < 0.001$).

DISCUSSION

The Level of EI of the Students

Our study revealed that the majority of the participants had an average level of EI. Individuals with average EI levels were said to be moderately skilful at recognising, expressing, understanding and handling their own emotions and those of other people, whereas individuals with high EI levels are efficiently skilful and those with low EI levels are struggling to handle the emotions (6). Healthcare providers including pharmacists are expected to have high EI levels. It is essential in healthcare fields as healthcare providers are required to deliver safe, effective, and compassionate healthcare services to the patients (25). It is claimed that training and education on EI may beneficially impact the professionalism and communication skills in medicine among healthcare providers (25). As for the current scenario, especially in COVID-19 pandemics, EI is important as it helps in navigating the challenges emanating from the pandemic (26).

The Level of EI Domains of the Students

The present study demonstrated that more than half of the participants scored high in emotional conscientiousness and emotional expression. Emotional conscientiousness was described as the capability to take responsibility and uphold integrity for personal performance (6). Hence, individuals with high emotional conscientiousness were indicated to have strong internal perceptions, integrity and responsibility. These individuals were consistent with their principled stand even if their principles are tough and unpopular. They also kept promises, met their commitment and acted ethically (6). Emotional conscientiousness is an essential element among the healthcare professions, especially the community pharmacists that sit at the intersection between health services and profits from the sales and retails of medications. Community pharmacists must always uphold their professional and ethical integrity in prioritising the consumer's health and well-being, rather than only making sales and gaining profits. Next, emotional expression was defined as the skill to demonstrate and convey other's emotions and behaviours to changing

conditions. People with high emotional expression levels were skilful in expressing their feelings effectively to others, hence they are viewed as excellent counsellors and motivators (6). Indeed, these people had the skill to persuade and win people as they knew how to react to other's emotions effectively with appropriate verbal and non-verbal communications such as body language, facial expression and voice tone (6). The Ministry of Health Malaysia had stated seven principles for pharmacists in the Code of Ethics for Pharmacists 2018, one of them being encouraging patients and the public to participate in decisions about their healthcare (27). Hence, pharmacists must have high emotional expression to promote effective counselling with patients. These will help pharmacists to express their caring attitude and concerns for the well-being of the patients to gain their trust, persuade and encourage them to participate actively in improving their health outcomes.

This study also revealed more than half of the participants scored average level in the rest of the EI domains. Emotional control refers to the skill of self-control from impulsive and troublesome feelings. Students with average emotional control levels were interpreted to be able to control their disruptive emotions in certain situations, however, they tended to overreact or lose control when they were under pressure. In contrast, people with high emotional control were skilful at controlling their emotions and tended to stay calm, unbothered and composed during stressful situations as they could think rationally and stay focused under pressure (6). High emotional control is essential for both pharmacist students and pharmacist professionals, who had to face enormous stressful new norms during the COVID-19 pandemic. Besides, healthcare providers including pharmacists need to also deal with various patients' attitudes which can be stressful. Next, participants who had average emotional maturity were reported to be moderately motivated and had the moderate skill to facilitate emotional tendencies in attaining the desired goals. Meanwhile, people with high emotional maturity were considered as motivated and outcome-oriented people as they had high drives to achieve their standards and desired objectives. When working, they set challenging aims, were willing to take the risk, pursue it in earnest, and always found ways to improve their performances (6). High emotional maturity can assist pharmacists and other healthcare providers to always develop their professional knowledge and competence to provide the best healthcare services to the public. They tend to keep themselves up to date with accurate, relevant, and current professional knowledge and skill for safe and effective healthcare practises. Students with average emotional awareness were claimed to have the reasonable skill to recognise and understand their emotions, as well as the reason and the potential effects of the emotions (6). High emotional awareness is crucial in pharmacist professions as they would be able to recognise and understand the patients' emotions and perceptions, hence creating trust and alliances between them (7). Next, emotional commitment is defined as the skill to align and cooperate with other people in a team or organisation to achieve the same goals. Students with this competence at the average level were interpreted to be ready to align their emotion with others, but not at the level of sacrificing their own emotions, contrarily to those who had a high emotional commitment level, that was said to be loyal and committed as they were willing to make sacrifices and always reviewed opportunities to achieve larger group's missions (6). Lastly, emotional fortitude was explained as the skill to negotiate, consult and solve arguments, as well as send persuasive messages. Hence, the majority of the students with average emotional fortitude level had this skill moderately, but not to the extent of sacrificing their own emotions. Meanwhile, high emotional fortitude participants can be described as diplomatic people who were skilful in negotiating arguments with others without

hurting them and ready to sacrifice their own feelings (6). In the inpatient medical settings, a collaboration between physicians, nurses, pharmacists and other healthcare practitioners is crucial to improve healthcare delivery. Hence, they are required to have high emotional commitment and emotional fortitude to enable them to work together to improve team drug-therapy decision-making, continuity of care and patient safety.

The Level of Stress of the Students

The majority of the pharmacy students in our study have moderate levels of stress which accounted for 80% of the students. A previous study by Sundarasen et al. (9), which involved students from all states in Malaysia, found that only 20.4% of the respondents experienced minimal to moderate anxiety, whereas the majority had no anxiety (92%). However, in another study conducted by Son et al. (11) involving college students in the United States, the majority (71%) of the students involved in the study had increased stress and anxiety during the COVID-19 pandemic. The study outlined a few stressors that contributed to the rise in stress levels among the students such as fear and worry about health, struggle to focus during online learning, disruptions of the sleep cycle, social isolation and increased concerns regarding academic accomplishments (11). Other recent studies have similarly shown that the COVID-19 pandemic had an impact on mental health, not only involving stress, but also anxiety, depression and post-traumatic stress disorders (PTSD) (28). It has also been reported that depression increases the risk of suicide among students (29). Therefore, this study has provided significant information regarding the stress level among the pharmacy students in UiTM Puncak Alam, as the faculty can decide whether there is a need to take more initiatives to help the students to cope with their stress.

The Relationship Between EI Level and Demographic Profiles

No association was evident between EI level and demographic profile (gender, year of study and geographical living area). Our findings are a contrast with a study conducted by Ahmad Hassali et al. (7), which found that EI was associated with gender, as female was reported to have higher EI level compared to male. Other studies showed a significant impact of EI on gender, where the majority of the findings showed females have higher EI levels (30–31). Further, Ahmad Hassali et al. (7), had also shown another contra finding with our study as they found a significant association between EI and year of study among the pharmacy students in Malaysia in 2017. Their study exposed that the final year students had a relatively higher EI level than other groups as they had studied more courses and were exposed to clinical settings. Moreover, our results that reported no association between EI and geographical living area were also inconsistent with the finding from a study by Joiceswarnalatha (32), involving college students from business management faculty in an institute in India, that revealed EI was associated with geographical backgrounds, where students from the urban area had a relatively higher EI level compared to those from a rural area.

The Relationship Between EI Domains and Demographic Profiles

Our study showed that there was an association between gender and emotional fortitude and emotional expression. The emotional fortitude level of females was higher than males. This is supported with a study by Folkman and Zenger (33) that reported females had higher emotional fortitude as they scored higher in the capability to develop, inspire and motivate others, solve and analyse problems with others and communicate prolifically and powerfully.

Our study showed higher emotional expression levels among females compared to males, which indicated female pharmacy students had better skills in expressing their emotions and feelings, persuading others, and reacting to others' emotions appropriately with the right body gestures, communication, voice tone and facial expression. Our finding is in line with previous studies carried out by Chaplin (34) and Parkins (35), in which both stated females were the more emotionally expressive gender. Both studies also highlighted that females were most expressive of emotions such as sadness, fear and happiness, whereas males were more expressive with angry emotions (34–35).

The Correlation Between EI and Stress

A significant weak negative correlation between EI and stress was found in our study indicating that higher EI level was associated with lower stress levels among the pharmacy students in UiTM Puncak Alam. Our results were comparable to the previous studies (4, 10, 36–37). Korkmaz et al. (38), through their studies, found that problem-solving skills increased as EI level increased. Thus, people with high EI levels had a high potential to overcome the many problems encountered in their daily life and reduced their stress and other detrimental effects of chronic stress and depression such as suicidal attempts (38). Besides, a study by Ramesar et al. (20) highlighted the ability to cope with stress is one of the important components of EI. They also concluded that stress can be a potential source as well as a potential outcome of low EI level. A study directed by Méndez-giménez et al. (39) outlined students with higher EI levels were more adaptive to stressful situations and had better life satisfaction. Thus, we speculated that if students had a high EI level, they might be able to adapt to the new norms of COVID-19 and mitigate their stress more effectively. In addition, a study by Janke et al. (40) concluded that the lack of EI might contribute to worse cases of stress which was PTSD as the results of the study showed significant impairment in EI in patients with PTSD compared to normal people (40). This further intensifies the need to take action to enhance the EI level among the participants.

The Correlation Between EI Domains and Stress

Results showed there was a statistically significant weak negative correlation between five of the EI domains (which were emotional control, emotional maturity, emotional commitment, emotional fortitude, and emotional expression) and stress. It has been reported that emotional control is crucial in various interpersonal and career-related matters, as these competencies enabled individuals to cope with stress in working environments (3). Another study supported the correlation between emotional control and stress as it stated that emotionally stable individuals enabled them to cope with stress as they could adapt well to the changing environments (41). Regarding emotional maturity, our results are in contrast with a study conducted by Othman et al. (41), as they had reported that emotional maturity had a weak positive correlation with stress. Emotional commitment and emotional fortitude stated in Table 5 can also be related to openness, which is one of the five personality traits that was described as an individual's tendency to seek life experience and assess it positively (31). Therefore, our study is in line with a study by Pollak et al., which showed a negative correlation between openness and stress. They reported individuals with high openness to having lower stress, were tolerant of novelty and viewed new ideas or situations as new experiences, rather than stressful events (42).

Table 5: Description of EI domains

EI domains	Description
Emotional control	The skill to self-control from troublesome emotions and impulsive feelings.
Emotional maturity	The skill to facilitate and lead emotional tendencies in attaining the desired goals.
Emotional conscientiousness	The capability to take responsibility and uphold integrity for personal performance.
Emotional awareness	The capability to recognise and understand self and others' emotions, internal states, perceptions, fondness, resources and their effects.
Emotional commitment	The skill to align, cooperate and work with others in a team or organisation to achieve the same goals.
Emotional fortitude	The skill to negotiate, confer, consult and solve arguments, as well as send persuasive messages.
Emotional expression	The skill to demonstrate, convey and adapt to other's emotions, behaviours and perceptions to changing situations and conditions.

The Correlation Between Stress and OLR

A significant weak negative correlation between stress and OLR was obtained from this study. Our finding is in line with a study conducted by Akmal and Kumalasari (17) that reported academic stress is a significant moderator which influenced OLR among college students. The study concluded that high academic stress could reduce the OLR and psychological well-being of the students. OLR was reported to cover various factors that contributed to effective online learning, not only involving technical skills such as computer and internet self-efficacy but also involving internal efficacy such as self-directed learning, motivation for learning, learner control and online communication self-efficacy (15, 24), which explained the negative correlation between stress and OLR. We speculate that stress may contribute to decreased internal efficacy such as self-directed learning and motivation, hence consequently reducing OLR among pharmacy students.

Limitations of the Study

This study is limited to the Faculty of Pharmacy students at UiTM Puncak Alam. Further studies on students from other faculties in UiTM Puncak Alam are recommended to understand the relationship between EI and the stress of a larger population. Besides that, similar research can be proposed for the residents of Bandar Puncak Alam, Selangor.

CONCLUSION

This study has revealed valuable insight into the EI, stress and OLR level among the pharmacy students during the COVID-19 pandemic, which can be beneficial for both the students themselves and the faculty. By knowing those levels, students can strategise to start improving themselves. Our results also contributed beneficial information for the faculty to decide whether there is a need to start implementing EI-related programmes among the students. The overall EI level for most participants was average, whereas moderate for stress level. These findings may be a concern given that the future pharmacy profession requires a high and well-developed EI level, as well as a high capacity to cope with stress. Relevant programmes might assist students to develop their EI level to enhance their professionalism in the working environment in the future. Training on EI also might

help to reduce their stress level during both university and professional life in the future.

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ETHICAL APPROVAL

This research had received ethical approval by the UiTM Research Ethics Committee [600-TNCPI (5/1/6)].

REFERENCES

1. Goleman D. Emotional intelligence why it can matter more than IQ. 1st ed. London: Bloomsbury Publishing; 1995.

2. Serrat O. Understanding and developing emotional intelligence. In: Knowledge solution. Singapore: Springer; 2017. https://doi.org/10.1007/978-981-10-0983-9_37

3. Yamani N, Shahabi M, Haghani F. The relationship between emotional intelligence and job stress in the faculty of medicine in Isfahan University of Medical Sciences. J Adv Med Educ Prof. 2014;2(1):20–6.

4. Shahin MA. Emotional intelligence and perceived stress among students in Saudi Health Colleges: a cross-sectional correlational study. J Taibah Univ Med Sci. 2020;15(6):463–70. https://doi.org/10.1016/j.jtumed.2020.09.001

5. Khraisat AMS, Abdul Rahim AF, Yusoff MSB. Emotional intelligence of USM medical students. Educ Med J. 2015;7(4):e26–38.

6. Yusoff MSB, Esa AR, Abdul Rahim AF. The USM Emotional Quotient Inventory (USMEQ-i) manual. Kelantan: KKMED Publications; 2010.

7. Ahmad Hassali MA, Hussain R, Saleem F, Iqbal Q, Arief M, Ahmad A, et al. Perceived emotional intelligence and its association with the demographic characteristics among pharmacy students: a cross-sectional study. J Pharm Pract Community Med. 2017;3(3):108–13. https://doi.org/10.5530/jppcm.2017.3.25

8. AlAteeq DA, Aljhani S, AlEesa D. Perceived stress among students in virtual classrooms during the COVID-19 outbreak in KSA. J Taibah Univ Med Sci. 2020;15(5):398–403. https://doi.org/10.1016/j.jtumed.2020.07.004

9. Sundarasen S, Chinna K, Kamaludin K, Nurunnabi M, Baloch GM, Khoshaim HB, et al. Psychological impact of COVID-19 and lockdown among university students in Malaysia: implications and policy recommendations. Int J Environ Res Public Health. 2020;17(17):6206. https://doi.org/10.3390/ijerph17176206

10. Gebregergis WT, Huang F, Hong J. The impact of emotional intelligence on depression among international students studying in China: the mediating effect of acculturative stress. Int J Intercult Relations. 2020;79:82–93.

11. Son C, Smith A, Hedge S, Wang X, Sasangohar F. Effects of COVID-19 on college students' mental health in the United States: interview survey study. J Med Internet Res. 2020;22(9):e21279. https://doi.org/10.2196/21279

12. Widodo SFA, Wibowo YE, Wagiran W. Online learning readiness during the COVID-19 pandemic. J Phys Conf Ser. 2020;1700(2020):12033. https://doi.org/10.1088/1742-6596/1700/1/012033

13. Majumder MAA, Cohall D, Ojeh N, Campbell M, Adams OP, Sa B, Khan K, Pierre R, Trotman-Edwards H. Assessing online learning readiness and perceived stress among first year medical students during COVID-19 pandemic: a multi-country study. Can. Med. Ed. J. 2021;12(2):e131–3. https://doi.org/10.36834/cmej.71609

14. Fawaz M, Samaha A. E-learning: depression, anxiety, and stress symptomatology among Lebanese university students during COVID-19 quarantine. Nurs Forum. 2021;56(1):52–7. https://doi.org/10.1111/nuf.12521

15. Hung ML, Chou C, Chen CH, Own ZY. Learner readiness for online learning: scale development and student perceptions. Comput Educ. 2010;55(3):1080–90. https://doi.org/10.1016/j.compedu.2010.05.004

16. Musabiq SA, Karimah I. Description of stress and its impact on college student. Coll Stud J. 2020;54(2):199–205.

17. Akmal SZ, Kumalasari D. Online learning readiness and well being of Indonesian college students during the pandemic: academic stress as a moderator. Jurnal Psikologi Ulayat: Indonesian Journal of Indigenous Psychology, 2022;9(1):46–66. https://doi.org/10.24854/jpu206

18. Enns A, Eldridge GD, Montgomery C, Gonzalez VM. Perceived stress, coping strategies, and emotional intelligence: a cross-sectional study of university students in helping disciplines. Nurse Educ Today. 2018;68:226–31. https://doi.org/10.1016/j.nedt.2018.06.012

19. Udayar S, Fiori M, Bausseron E. Emotional intelligence and performance in a stressful task: the mediating role of self-efficacy. Pers Individ Dif. 2020;156:109790. https://doi.org/10.1016/j.paid.2019.109790

20. Ramesar S, Koortzen P, Oosthuizen RM. the relationship between emotional intelligence and stress management. SA J Ind Psychol. 2009;35(1):39–48. https://doi.org/10.4102/sajip.v35i1.443

21. Nyarko F, Peltonen K, Kangaslampi S, Punamäki RL. Emotional intelligence and cognitive skills protecting mental health from stress and violence among Ghanaian youth. Heliyon. 2020;6(5):e03878. https://doi.org/10.1016/j.heliyon.2020.e03878

22. Kim F, Fethney J, Kozlowski D, Fois R, Reza F, McCloughen A. Emotional intelligence and perceived stress of Australian pre-registration healthcare students: a multi-disciplinary cross-sectional study. Nurse Educ Today. 2018;66:51–6. https://doi.org/10.1016/j.nedt.2018.04.001

23. Cohen S. Menlo Park, CA: Mind Garden. 1994 [cited 21 January 2021]. p. 1–5. Perceived stress scale. Available from: https://www.mindgarden.com/documents/PerceivedStressScale.pdf#:~:text=bySheldon%20Cohen%20The%20Perceived%20Stress%20Scale%20%28PSS%29,unpredictable%2C%20uncontrollable%2C%20and%20overloaded%20respondents%20find%20their%20lives

24. Chung E, Noor NM, Vloreen Nity Mathew. Are you ready? an assessment of online learning readiness among university students. Int J Acad Res Progress Educ Dev. 2020;9(1):301–17.

25. Cherry MG, Fletcher I, O'Sullivan H, Dornan T. Emotional intelligence in medical education: a critical review. Med Educ. 2014;48(5):468–78. https://doi.org/10.1111/medu.12406

26. Fred Muyia Nafukho. Emotional intelligence skills key to navigating COVID-19. University World News. 14 January 2021 [cited 23 July 2021]. Available from: https://www.universityworldnews.com/post.php?story=20210110205926261

27. Pharmacy Board Malaysia. Code of ethics for pharmacists 2018. Kuala Lumpur: Pharmacy Board of Malaysia; 2018 [cited 22 August 2021]. Available from: https://www.pharmacy.gov.my/v2/sites/default/files/document-upload/code-ethics-fa-web.pdf

28. Salari N, Hosseinian-Far A, Jalali R, Vaisi-Raygani A, Rasoulpoor S, Mohammadi M, et al. Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: a systematic review and meta-analysis. Global Health. 2020;16(1):57. https://doi.org/10.1186/s12992-020-00589-w

29. Rodríguez-Hidalgo AJ, Pantaleón Y, Dios I, Falla D. Fear of COVID-19, stress, and anxiety in university undergraduate students: a predictive model for depression. Front Psychol. 2020;11:30413041. https://doi.org/10.3389/fpsyg.2020.591797

30. Gautam A, Khurana C. Demographic variables as indicators of emotional intelligence: a study of selected enterprises of Uttarakhand. J Manage. 2019;6(1):11–20. https://doi.org/10.34218/JOM.6.1.2019.002

31. Stami T, Ritin F, Dominique P. Demographic predictors of emotional intelligence among radiation therapists. J Med Radiat Sci. 2018;65(2):114–22. https://doi.org/10.1002/jmrs.277

32. Joiceswarnalatha R. A study on the emotional intelligence levels of the urban students and rural students-with special reference to SVIM. Int J Sci Res Publ. 2015;5(7):1–14.

33. Folkman J, Zenger J. Research: Women score higher than men in most leadership skills. Havard Business Review. 2019 [cited 27 July 2021]. p. 4–8. Available from: https://hbr.org/2019/06/research-women-score-higher-than-men-in-most-leadership-skills

34. Tara M. Chaplin. Gender and emotion expression: a developmental contextual perspective. Emot Rev. 2015;7(1):14–21. https://doi.org/10.1177/1754073914544408

35. Parkins R. Gender and emotional expressiveness: an analysis of prosodic features in emotion expression. Griffith Work Pap Pragmat Intercult Commun. 2012;5(1):46–54.

36. Rezvani A, Khosravi P. Emotional intelligence: the key to mitigating stress and fostering trust among software developers working on information system projects. Int J Inf Manag. 2019;48:139–50. https://doi.org/10.1016/j.ijinfomgt.2019.02.007

37. Martínez-Monteagudo MC, Inglés CJ, Granados L, Aparisi D, García-Fernández JM. Trait emotional intelligence profiles, burnout, anxiety, depression, and stress in secondary education teachers. Personal Individ Differ. 2019;142:53–61. https://doi.org/10.1016/j.paid.2019.01.036

38. Korkmaz S, Danacı Keleş D, Kazgan A, Baykara S, Gürkan Gürok M, Feyzi Demir C, et al. Emotional intelligence and problem solving skills in individuals who attempted suicide. J Clin Neurosci. 2020;74:120–3. https://doi.org/10.1016/j.jocn.2020.02.023

39. Méndez-giménez A, Cecchini J, García-romero C. Profiles of emotional intelligence and their relationship with motivational and well-being factors in physical education. Psicol Educ. 2020;26(1):27–36. https://doi.org/10.5093/psed2019a19

40. Janke K, Driessen M, Behnia B, Wingenfeld K, Roepke S. Emotional intelligence in patients with posttraumatic stress disorder, borderline personality disorder and healthy controls. Psychiatry Res. 2018;264:290–6. https://doi.org/10.1016/j.psychres.2018.03.078

41. Othman CN, Bahri Yusof MS, Md Din A, Zakaria LA. Emotional intelligence and personality traits in relation to psychological health among pharmacy students in Malaysia. Procedia–Soc Behav Sci. 2016;222(June):253–62. https://doi.org/10.1016/j.sbspro.2016.05.154

42. Pollak A, Dobrowolska M, Timofiejczuk A, Paliga M. The effects of the big five personality traits on stress among robot programming students. Sustain. 2020;12(12):5192. https://doi.org/10.3390/su12125196