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Exploring the Adaptation Processes of First-Year Medical Students: A Mixed-Method Study

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ABSTRACT

Upon entering medical school, many first-year medical students face obstacles in the adaptation process, which may lead to psychological problems. To overcome this situation, they apply coping mechanisms, which are a defining factor of university adjustment. Universities should obtain information on students' adaptation and coping mechanisms so that they can better manage their students' adjustment-related problems. This study investigates medical students' adaptation processes and coping mechanisms using the Student Adaptation to College Questionnaire (SACQ) and Brief-Coping Orientation to Problems Experienced Inventory (Brief-COPE). The students were also asked to write their self-reflections on their adaptation and how they resolved their problems. This mixed-method, cross-sectional study involved 36 first-year international class students from the Faculty of Medicine, Universitas Indonesia (Batch 2022–2023). Using the validated SACQ and Brief-COPE questionnaires, the results indicated less significant impacts of age and gender on adaptation and how students coped with stress. Seven components from SACQ and Brief-COPE yielded statistically significant results, with p -values < 0.05 . This study revealed four major themes: adaptation in medical school, adaptation process, factors influencing adaptation and coping strategies. Furthermore, 17 subthemes and 56 sub-subthemes related to adaptation and coping strategies were identified. Regarding academic adjustment, the aspects of curriculum, learning methods, task loads, subjects, assessment and learning activities are challenging for medical students. The findings underscore the need for personal and academic adjustment support for first-year medical students. By addressing these challenges, their overall well-being and learning experiences can be improved, ultimately enhancing their success during this crucial phase of education.

Keywords: *First-year medical students, Coping mechanism, Adaptation, Personal-emotional, Academic adjustment*

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INTRODUCTION

First-year study is a challenge for new students, and the initial adaptation process may be stressful for some. This condition typically relates to the differences between high school and college/university and the challenges therein. Such challenges typically include teaching, learning, financial, emotional and social problems (1). For first-year medical school students, these situations are more challenging because they have to learn considerable amounts of new knowledge and skills through various learning activities within a limited time in a new environment (2).

The effective integration of first-year students' adaptation and transition to higher education has become a strong predictor of their university reputation, retention and academic achievements. Adaptation and transition are also considered key points for educational development in the future, for both students and universities. Furthermore, the success of the adaptation process is associated with academic achievement. In high school, learning concepts are more teacher-centred, but this becomes more student-centred in higher education (3, 4). Therefore, the success of first-year students' adaptation to life and academic activities at their universities is important in further developing their personalities and professionalism.

One strategy to overcome the internal and external situations that can cause stress due to adaptation is the use of coping mechanisms (5). Many first-year medical students have adaptation problems, but not all suffer from stress, which may be due to the different coping mechanisms they use (6). As shown in the literature, coping mechanisms are a defining factor in university life adaptation. For example, one good mechanism is to face a problem and not avoid it to ensure smooth adaptation (7).

One instrument used to measure student adaptation is the Student Adaptation to College Questionnaire (SACQ), which consists of 46 items divided into four college adjustment dimensions: academic, social, personal-emotional and institutional adjustment (4). Here, the items are measured using a Likert scale ranging from 1 to 9 (1–5: "It doesn't fit me at all" and 6–9: "Perfectly fits me") (8, 9). The Brief-Coping Orientation to Problems Experienced Inventory (Brief-COPE) is another valid and reliable instrument for measuring coping mechanisms as a response to college adjustment. This instrument consists of 14 scales, including self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioural disengagement, venting, positive reframing, planning, humour, acceptance, religion and self-blame (two items per scale) (10).

A study using the SACQ found that students' personal emotions in transition were more challenging (9). Other study combined the SACQ and Brief-COPE, and reported a mean SACQ score of 407.44. Such study reported various themes, including academic, social, personal-emotional and institutional adjustment. In particular, academic adjustment included learning objectives, differences in learning habits, accommodation, academic counsellors and scholarships, while social adjustment covered social interaction and support, differences, homesickness, discrimination and its effect on students' personal lives. Personal-emotional adjustment includes psychological and physiological health problems, while goal commitment/institutional attachment includes social and academic adaptation as well as communication between students and education management (8). One study combined the SACQ and the Student Integration Questionnaire and identified major themes, including social adjustment, social alienation and cultural alienation (11). Another study applied the College Student Subjective Well-being Questionnaire-Revised version (CSSWQ-R) to assess students' well-being related to their academic concerns (12).

In comparison, our study combined the SACQ and Brief-COPE because both instruments are valid and highly reliable. They also measure student adaptation in some domains or coping mechanisms (8). However, while the SACQ has been used to investigate Indonesian psychology students (13), data regarding the use of this questionnaire to assess medical students have yet to be presented. Furthermore, the benefits of using both instruments in measuring students' adaptation and coping mechanisms remain under-researched. To address this gap, the present study aimed to explore the adaptation processes and coping mechanisms of first-year medical students using the SACQ, Brief-COPE and written self-reflection. The findings of this study can be used to come up with recommendations for helping medical students transition smoothly and enhance their learning experiences.

Adaptation Process Theory

University students' adaptation processes begin with emotional pressure and stress due to expectations of fulfilling educational standards that differ from those in high school. Within a short period, they are expected to fulfil responsibilities, such as submitting assignments, passing exams, handling personal relationships with peers and managing a new environment, throughout the adaptation process. This process is considered adequate when students can handle such problems and function well in relation to their responsibilities (14, 15).

The adaptation process has three phases: separation (people are separated from things that are familiar to them), transition or neutral zone (there is no change, only reflection of what they have experienced) and incorporation (individual condition plays a role in this phase, which is characterised by responsibility and expectation). After successfully completing all three stages, students will experience transformation, through which they can face challenges while performing well, underperforming or not changing at all. Their success in prior transition phases defines the transformation process (14).

In accordance with Van Maanen and Schein's organisational socialisation theory, adaptation occurs when a person enters a new environment and transforms from being an outsider to being part of a system. During this process, changes can occur in terms of knowledge, skills, attitudes, new values and relationships with others in the new environment (16).

METHODS

This was a cross-sectional study with a mixed-method design, conducted from November 2022 to April 2023. In the context of this study, "students" refers to first-year students. Thus, the respondents consisted of first-year international class students of the Faculty of Medicine, Universitas Indonesia (Batch 2022–2023). The students were recruited using the total sampling method. Out of 59 students, 36 expressed a willingness to participate in this study by signing an informed consent form (response rate: 61%).

Data Collection

The data collected included students' age, gender, city of origin and residency. The SACQ and Brief-COPE questionnaires were distributed to the students via Google Forms. Before completing the questionnaires, the students received an explanation of the study's aims and how they could fill in the questionnaires. Details about the data collection methods are as follows:

- a. SACQ (34 items, Likert scale 1–7) consisting of 4 subscales: academic adjustment subscale (11 items), social adjustment subscale (9 items), personal/emotional adjustment subscale (6 items) and goal commitment/institutional attachment subscale (8 items). In this study, we applied the Indonesian version of the SACQ with a Cronbach's alpha of 0.913 (17).
- b. Brief-COPE (28 items, Likert scale 1–4) consisting of 14 subscales: active coping, planning, use of instrumental support, use of emotional support, venting, self-distraction, positive reframing, denial, acceptance, religion, substance use, behavioural disengagement, humour and self-blame. The reliability of each item was mostly > 0.5 (10).

We also conducted a qualitative study using a descriptive approach. Qualitative data were obtained from students' written self-reflections on their adaptation processes using Google Forms. Four questions, presented in the Appendix, were used to explore and gather rich information related to students' adjustment from high school to university, the influencing factors, the obstacles they faced and their plans for improving their learning (self-reflection). To ensure the validity of the qualitative data, the researchers held meetings with the students, through which they explained how students can write their reflections using Google Forms. All respondents answered the questions available after filling in the SACQ and Brief-COPE questionnaires.

Data Analysis

The quantitative data were analysed using SPSS version 26.0. SKT and SH conducted univariate and bivariate analyses to examine the correlation of students' characteristics with the SACQ and Brief-COPE. We conducted statistical analysis to identify the correlations between students' characteristics with SACQ and Brief-COPE, as well as analysed the relationships between the elements of both instruments. To observe the normality of the data distribution, we applied the Kolmogorov-Smirnov test. We applied ANOVA (if normally distributed) or Kruskal-Wallis (nonparametric) for the nominal and numeric analyses (gender – SACQ/Brief-COPE). For the correlation bivariate analyses, we employed a parametric test (Pearson) if the data obtained were normally distributed ($p > 0.05$) and a nonparametric test (Spearman's correlation) if the data were not normally distributed ($p < 0.05$).

For the qualitative study, we used thematic analysis with the Steps for Coding and Theorization (SCAT), which involved coding, refined coding and theme, and subtheme development (18). To organise the data, we removed irrelevant data to come up with conclusions. MHW and RTZ completed the coding independently, while MHW summarised the data analysis by drawing a concept map. Members of the research team met and discussed the results, after which we agreed on the data analysis results. The authors also integrated the qualitative and quantitative results. The data analysis results were presented systematically and clearly.

Quantitative

Demographics

Among the 36 respondents, 20 (55.6%) were female, 12 (33.3%) were male and 4 (11.11%) preferred not to indicate their gender. Their ages ranged between 17 and 21 years old; most

of them were 18 years old (69.4%), 5 (13.9%) were 17, another 5 were 19 and only 1 student (2.8%) was 21 years old. Most of them lived in apartments (19, 52.8%), at home with their parents (13, 36.1%) or rented other dwellings (4, 11.1%). About 75% of the students originally came from Jakarta and West Java (75%).

College adjustment

The mean (SD) score for the SACQ score was 4.6 (SD±0.40). The SACQ score can be categorised into four categories, with the highest and lowest scores obtained for social adjustment 6.05 (SD±0.55) and personal-emotional adjustment 4.57 (SD±0.92), respectively.

Coping strategies

The mean (SD) score for Brief-COPE was 72.19 (SD±7.2). Among the Brief-COPE subscales, the participants scored the highest in the self-distraction subscale 6.22 (SD±1.07) under the maladaptive category and in the acceptance subscale 6.44 (SD±1.03) in the adaptive coping category. The SACQ and Brief-COPE almost had no correlation ($r = 0.003$, $p = 0.984$).

Correlations between students' characteristics and SACQ/Brief-COPE

Age

Computing the Spearman's rho coefficient correlation yielded a coefficient of 0.066 ($p = 0.704$), indicating a very weak positive correlation between age and the SACQ scores, although the correlation was not statistically significant. The results suggest that age does not substantially influence the adaptation process, as measured by the SACQ scores, among first-year medical students.

Spearman's rho coefficient correlation analysis also showed a weak negative correlation between age and Brief-COPE scores among first-year medical students. The correlation coefficient was found to be -0.171 ($p = 0.318$), indicating that age had no statistically significant influence on the coping mechanisms employed by the students. These findings suggest that age does not play a significant role in determining the coping strategies used by first-year medical students during their transition to medical school.

Gender

The ANOVA test results of the correlation analysis between the SACQ scores and gender (female, male or prefer not to indicate) indicated no significant difference between gender groups concerning SACQ scores ($F(2, df \text{ within}) = 0.252$, $p = 0.779$). The mean square between groups was 0.043, while that within groups was 0.171. These findings suggest that gender does not significantly impact the SACQ scores based on the analysed data. In other words, there were no significant differences in self-assessed communication levels (SACQ) among individuals of different genders.

The ANOVA test results of the correlation analysis between Brief-COPE scores and gender (female, male and prefer not to indicate) revealed no significant difference between gender groups concerning Brief-COPE scores ($F(2, df \text{ within}) = 0.230$, $p = 0.796$). The mean square

between groups was 12.461, while that within groups was 54.204. These findings indicate that gender does not significantly impact how individuals cope with stress, as measured by the Brief-COPE, based on the analysed data. In other words, there were no significant differences in stress-coping strategies among individuals of different genders based on the results of this ANOVA analysis.

Correlation between the SACQ and Brief-COPE

Out of the 56 analysed correlations between the SACQ and Brief-COPE, only seven yielded statistically significant results, with a p -value < 0.05 . These significant correlations provide insights into the relationships between different aspects of students' adaptation and their specific coping mechanisms. First, a strong negative correlation was observed between personal-emotional adjustment and self-blame ($r = -0.593$, $p = 0$), indicating that students' tendency to engage in self-blame as a coping mechanism decreased as their personal-emotional adjustment increased. Second, a significant negative correlation was found between personal-emotional adjustment and venting ($r = -0.417$, $p = 0.011$), suggesting that students' reliance on venting as a coping mechanism decreased as their personal-emotional adjustment increased. On the contrary, the increase in personal-emotional adjustment was related to the increase in emotional support ($r = 0.436$, $p = 0.008$). It can be assumed that as personal-emotional adjustment increased, the use of emotional support as a coping mechanism also increased.

Additionally, a significant negative correlation was observed between academic adjustment and behavioural disengagement ($r = -0.543$, $p = 0.001$), indicating that students' tendency to use behavioural disengagement as a coping mechanism decreased as their academic adjustment increased. Moreover, a significant negative correlation was observed between personal-emotional adjustment and behavioural disengagement ($r = -0.509$, $p = 0.002$), implying that their reliance on behavioural disengagement as a coping mechanism decreased as their personal-emotional adjustment increased. Furthermore, a significant negative correlation was found between academic adjustment and denial ($r = -0.334$, $p = 0.046$), indicating that students' tendency to use denial as a coping mechanism decreased as academic adjustment increased. Finally, a significant positive correlation was observed between institutional adjustment and religion ($r = 0.336$, $p = 0.045$), suggesting that the likelihood of students relying on religion as a coping mechanism also increased as their institutional adjustment increased. These significant correlations highlight specific associations between aspects of student adaptation and the adoption of particular coping mechanisms. Further research and exploration are necessary to understand these relationships and their implications for supporting students' adaptation and coping processes during their academic journeys.

Qualitative

Data on students' self-reflections, which were collected via Google Forms, presented four major themes: adaptation in medical school, adaptation process, factors influencing adaptation and coping strategies. Adaptation in medical school was further divided into academic adjustment, social adjustment and personal-emotional adjustment. We did not identify institutional attachment. Through the adaptation process, students perceived that they had learned considerably, were well adapted (enjoyed their learning activities), experienced struggles and implemented self-regulated learning. We identified personal (engagement in learning, introverted trait, learning motivation, etc.) and environmental (task load, peer, family, diversity, etc.) factors that influenced the adaptation of first-year

medical students. Furthermore, students applied coping strategies, such as active coping, behavioural disengagement, planning, acceptance, instrumental support and positive reframing (Table 1).

Table 1: Themes and subthemes identified

Themes	Subthemes	Sub-subthemes
Adaptation in medical school	Academic adjustment	Assessment
		Learning method
		Self-regulated learning
		Task load
		Extra effort
		Adult learning
		Subject matters
		Pace of learning
		Time management
		Learning strategy
		Learning environment
		Peer-learning
		Exam preparation
Social adjustment	Peers, friendships, and group	Avoid conflict
		Culture
		Others' personality: Selfish
		Physical challenge
Adaptation process	Personal-emotional adjustment	Learn a lot
		Self-development
		Well-adapted
		Struggling
		Self-regulated learning
		Self-awareness
Factors influencing adaptation	Personal	Engagement in learning
		Previous educational background
		Introvert trait/self-personal trait
		Learning motivation
		Self-determination/belief
		Separation
		Culture shock
		Acceptance

(Continued on next page)

Table 1: (Continued)

Themes	Subthemes	Sub-subthemes
Factors influencing adaptation	Personal	Lack of confidence Self-expectation Time management Need time to adapt Burden in non-academic matters
	Environment	Task load Peers, senior Family Language Extracurricular activities Self-regulated learning Similar goals Assessment Pace of learning Learning method Diversity Socialization Adult learning
Coping strategies	Active coping	Apply various learning strategies, self-directed learning Self-motivation
	Behavioural disengagement	Giving-up
	Planning	Socialization Planning and setting goals Time management
	Acceptance	Habituation Openness Self-belief
	Using instrumental support	Communicate with seniors and peers
	Positive reframing	Think positive

Adaptation in medical school

Academic adjustment

As presented in Table 1, several sub-subthemes emerged related to academic adjustment. Academic adjustment was measured based on students' success in facing academic challenges in higher education, especially their transition from high school to university

(from a teacher-centred to a student-centred learning system and from pedagogy to andragogy), as well as differences in the pace of learning, assessment, time management, learning strategies, task loads, learning environments, subject matter, peer learning and exam preparation. Some quotes based on the students' self-reflections on their academic adjustments are presented as follows:

Being in medical school really focuses on not being spoon-fed. There is a lot of group discussion, rather than the usual lectures. (SR1, 2)

In high school, most of my teachers took care of a lot of the students, while in medical school, we have to be more active in our studies and be more independent. (SR1, 7)

In high school, we can start studying the night before (the exam), but in med school, we can't do that. (SR1, 8)

Social adjustment

Social adjustment [6.05 (SD±0.55)] had the highest score as an adaptation mechanism used by the respondents. Students developed interpersonal-social adjustment related to their experiences in the university, such as those with peers, friendships, groups, avoidance of conflict, new culture and other people's personalities (selfish). Some relevant insights are presented below.

I'd probably say that the people in med school are slightly more egotistical, though they tend to hide it. (SR1, 6)

I will be cordial and responsive to other students and do my best to avoid conflict. Apart from that, I will communicate with others often and make friends. (SR2, 33)

(I) try to socialise with others, so that if I have a problem, I have someone other than my family to talk to. (SR2, 36)

I believe that there's culture shock between my high school (and medical school) experience, as I have to mingle with new people but also accept there's already a group of people who know each other, making it hard for me to actually make meaningful connections with people. (SR4, 16)

Personal-emotional adjustment

Personal-emotional adjustment had the lowest score, as measured by the SACQ: 4.57 (SD±0.92). Only a few students used this coping mechanism to adapt to a new learning environment. Students' physical state and motivation became a focus when adapting to a new life at the university, as shown in the following excerpts:

I feel that med school tires me out quickly. (SR1, 8)

I feel that my ambition was much better in high school. (SR1, 12)

Adaptation process

Through the adaptation process, students became well-adapted to exam preparation and learning activities, showing great learning in this aspect. In addition, some students experienced struggles, implemented self-regulated learning as a learning strategy, increased

their self-awareness and became more capable of self-development, as indicated by the following excerpts:

The difference is that in high school, the material given per chapter is usually finished within a month, while in med school, one chapter's worth of a month is finished in 2 hours; so yeah, I feel shocked and overwhelmed. (SR1, 29)

It's a very different method, and I learned many things from it. I am happy for that. (SR1, 13)

I'm trying to study myself, especially how I can study the best. (SR2, 7)

In high school, they're mostly pedagogy. Now, they're fully andragogy, which pushes me to be better and (more) self-developed. (SR1, 14)

Factors influencing adaptation

In this study, we found two major factors that influenced students' adaptation in medical school: personal and environmental factors. Furthermore, some factors overlapped with how they coped with the problems and adjusted to their new college environment. Below are some quotes related to both factors.

Personal

Personal factors can also be considered internal factors. Some interesting personal factors emerged from students' self-reflections, such as engagement in learning, previous educational background, introverted traits, separation, lack of confidence and others. For example, separation from their families affected their emotions, which, in turn, also affected their adaptation process. Other related insights are presented below.

The differentiation that really affects me is that learning is more engaging (in medical school) [compared to] most of my high school classes, which are online. (SR1, 4)

I like to spend most of my time alone. (SR2, 6)

One of the biggest feats is my separation from my family...I missed my family quite a lot. (SR4, 2)

We're definitely going in more blind and independent, but that also means that we don't have enough clarification and still don't feel as confident in our knowledge. (SR1, 35)

Yes, I still cannot adjust well and tend to procrastinate on my assignments. That affects my motivation. (SR4, 8)

Environment

Environmental factors, also considered external factors, include task load, peers/seniors, family, language, extracurricular activities, pace of learning, self-regulated learning, similar goals, assessment, learning method, diversity, socialisation and adult learning. For example, social problems, such as peer diversity, could lead to difficulties adjusting to a new environment. Some of these personal factors also overlap with coping strategies and adjustments. Some representative quotes are as follows:

Yes, with the language and the learning methods. (SR4, 32)

I don't feel there is much difference in the frequency of the tasks' distribution. In medical school, we have daily tasks; in high school, there are some days [during which we can] take a break. (SR1, 11).

Yes, but it is more of a social problem adjustment, because everyone here is so diverse, so it's hard to find someone with the same frequency. (SR4, 21)

[I cope] by asking parents and upperclassmen/seniors for tips and advice. (SR2, 32)

Coping strategies

There are two types of coping strategies: adaptive and maladaptive. The adaptive mechanism includes problem-focused (active coping, planning and using instrumental support) and emotional-focused (use of emotional support, acceptance, positive reframing, humour and religion) mechanisms. In comparison, maladaptive coping includes dysfunctional mechanisms, such as venting, denial, substance use, behavioural disengagement, self-destruction and self-blame.

Active coping

Students solved their academic problems by applying various learning strategies and focusing on self-directed learning. They showed strong self-motivation, which supported them through the adaptation process, as indicated by the following statements:

I think I will find the best method to study as time goes by. (SR3, 28)

I should constantly improve myself. (SR3, 17)

Behavioural disengagement

A few students showed behavioural disengagement (giving up) when they should self-reflect on what they planned to encounter in adapting to certain problems. This is reflected in the following insights:

Not much, but I also don't want to force a solution; instead, it should happen spontaneously. (SR3, 9)

I still don't know how. (SR3, 2)

Planning

Students planned to have more socialisation, planned and set goals for their future studies and managed their time more appropriately, as indicated by the following insights:

To make more friends and study harder. (SR3, 1)

I hope I can plan and set goals for myself, so that at least I know what I want to do and be in Faculty of Medicine Universitas Indonesia (FMUI). (SR2, 15)

[Have] better time management; make sure to take some rest. (SR 3.5)

Acceptance

Many students used acceptance as a coping strategy by habituation, openness and self-belief. This finding, which is in accordance with the quantitative analysis with a score of 6.44 (SD±1.03), is explained in the following self-reflections:

Get used to them and find the pace I'm comfortable with to easily find it. (SR3, 12)

[Exert] more effort, [be] more open-minded and try to be more adaptive. (SR3, 16)

Just deal with it and believe that getting a chance to study here means I can cope. (SR2, 11)

Using instrumental support

Peers and seniors both play important roles in student adaptation by giving advice and providing the information needed by students when they have difficulties. One student even used an app to solve a problem:

I think I need to learn about the problem and use SMART to solve it. (SR3, 14)

I also try to seek different kinds of study methods from seniors who encountered the same problem in their first year of medical school. (SR3, 28)

Positive reframing

Thinking positively is one of the coping strategies selected by students to strengthen and motivate themselves, as well as to lessen the burden, as shown by the following self-reflections:

I do not take these things as a burden and do my best and do things early so that it won't be a burden. (SR3, 29)

I would try to find the most effective way to learn things in med school and make difficult modules more exciting. (SR3, 19)

DISCUSSION

Analysing demographic factors, specifically age and gender, based on the SACQ and Brief-COPE scores provides valuable insights into the adaptation processes of first-year medical students. Notably, the findings revealed that age and gender did not have statistically significant impacts on the SACQ and Brief-COPE scores. Our qualitative study also supported these findings, showing no differences between age and gender in relation to students' adaptation and coping mechanisms. In particular, our result regarding age is consistent with a previous study, which also failed to establish a significant correlation between age and college adaptation for students in the 18–24 age group (19). Other studies have reported that older students could adapt better to online learning (20). In our study, the correlation cannot be proven, as there are low differences in ages among students under study.

The SACQ scores revealed interesting patterns within their dimensions, with the highest and lowest scores recorded for social adjustment and personal-emotional adjustment, respectively. This variation can be attributed to several factors. Specifically, a higher score in social adjustment could indicate the importance of social support and interactions with others during students' transition to college life. Students who quickly established social connections, engaged in social activities and found a sense of belonging tended to adapt more smoothly to their college environments. This finding aligns with previous research, which reported that a robust social support system contributes significantly to students' well-being and academic success (21). Conversely, the lower score in personal emotional adjustment suggests that students may face emotional challenges during their transition to medical school. This finding is similar to that of another study, which concluded that managing emotions, knowledge and skills can impact individuals' socioemotional adaptation (22). The demanding academic curriculum, increased responsibilities and the pressure to excel academically can contribute to students' emotional stress and adjustment difficulties. Students may also struggle with managing their emotions, which may affect their overall adaptation. Based on the qualitative study, we found that more students used academic and social adjustments to adapt to their new learning environment in medical school.

Our results further indicate that in Brief-COPE, the self-distraction subscale (for maladaptive coping) and acceptance subscale (for adaptive coping) had the highest scores. Overall, the mean score for adaptive coping is higher than that for maladaptive coping (47.47 vs 24.72). In addition, our qualitative study revealed that most students solved their problems using more adaptive coping mechanisms, such as active coping, planning and acceptance. This result is similar to a study on medical students in Dubai, which found self-distraction and humour to be the most common coping responses used by students (23). However, a study conducted on medical students in a university in Canada reported that most students used adaptive coping mechanisms, although the most common ones were active coping and emotional support (24). One study found acceptance to be the most commonly practiced coping, while another found that students with lower scores on perceived stress tend to use more adaptive coping scores (acceptance, positive reframing, humour, planning and active coping) (25).

Thus far, only a few studies have compared the Brief-COPE and SACQ scores. In this study, we found that personal-emotional adjustment had a significant negative correlation with maladaptive coping, such as self-blame, venting and behavioural disengagement ($r = -0.593$, $p = 0$, $r = -0.418$, $p = 0.011$, $r = -0.509$, $p = 0.002$, respectively). This finding aligns with that of another study, which further explained that fear of not reaching one's education goals had psychological effects on students, who would then cope using nonfunctional strategies. In terms of academic adjustment, we found that it had significant negative correlations with behavioural disengagement ($r = -0.543$, $p = 0.001$) and denial ($r = -0.334$, $p = 0.046$). A previous study reported that most students initially experienced difficulty adjusting, but slowly got used to it in time. Given that the subjects of the current study are first-year students, this is suitable for the U-Curve approach of Lysgaard (26).

We also found themes and subthemes related to the adaptation process in medical school. In academic adjustment, medical students found various aspects of curriculum, learning methods, task loads, subjects, assessment and learning activities to be quite challenging. A previous study reported a similar situation for medical students who fulfilled learning goals with multiple tasks (27). Other reports also mentioned the academic adjustments made by medical students related to their efforts to meet their educational needs, including learning tasks, assessments and training to master the necessary skills (28).

Related to social adjustment in friendships and groups, students mostly conducted activities with peers while adjusting to their new social lives. Friendships are expected to build social support during their educational journeys (29). Similarly, another study reported that social support from friends in the same field helps overcome the pressures of daily college life (30). In their personal-emotional adjustment, the medical students tend to have personality changes with challenging motivations and self-development related to learning. Related to personal-emotional adjustment, coping mechanisms play a specific role in overcoming adjustment-related challenges in medical school. Using effective coping strategies to solve problems would help students achieve a better adjustment process (7).

Finally, this study found external and internal factors influencing adaptation in medical school. These factors were all connected to the process of building the ability to adapt. This finding on students' background and overall learning environment is similar to that of another study, which concluded that existing and supporting factors influence adaptation, such as self-traits, social support from parents and friends and overall learning systems in institutions (technology, curricula, teachers and student participation) (31). Notably, our study was conducted only with students from one medical school. Thus, further studies involving students from other medical schools may expand and deepen the information gathered.

CONCLUSION

This mixed-method study explored first-year medical students' adaptation processes and coping strategies during their transition to medical school. The SACQ and Brief-COPE instruments were used to measure these processes and strategies. Our findings reveal that students tend to apply social adjustment rather than emotional adjustment in the adaptation process. To manage adaptation issues, they prefer to accept problems and use self-distraction as adaptive and maladaptive coping strategies, respectively. We also find that external and internal factors influence students' adaptation in medical school and that these factors are connected to each other in terms of developing their ability to adapt.

Recognising students' adaptation problems and the coping strategies they use can guide medical school authorities by providing information on what students need the most to achieve success in their academic performance. Some efforts, such as strengthening the student support system, increasing student–staff engagement and enhancing orientations to introduce various learning activities to first-year students, may help them more easily cope with their problems and adapt to their new environments.

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ETHICAL APPROVAL

This study was approved by the Ethical Committee, Faculty of Medicine, Universitas Indonesia-Cipto Mangunkusumo General Hospital, No. KET-335/UN2.F1/ETIK/PPM.00.02/2022.

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APPENDIX

Student Adaptation to College Questionnaire (SACQ)^{4,17}

Instructions:

You are asked to read all the statements thoroughly and answer them. There is no right or wrong answer. The best answer is the one that describes your real condition.

Choose 1 out of these 7 options to represent your agreement with each statement:

- 1 = Totally disagree
- 2 = Disagree
- 3 = Somewhat disagree
- 4 = Neutral
- 5 = Somewhat agree
- 6 = Agree
- 7 = Strongly agree

No.	Statements	1	2	3	4	5	6	7
1	I feel that I am suitable for the Universitas Indonesia.							
2	I always follow my academic assignments.							
3	Recently, I have been feeling calm.							
4	I feel that my academic assignments at the Universitas Indonesia are difficult.							
5	Recently, I have been feeling sad.							
6	My close friends support my education at the Universitas Indonesia.							
7	I would like to have more chances to develop social relations at the Universitas Indonesia.							
8	I am not optimal in doing my exam.							
9	Recently, I feel tired almost all the time.							
10	Generally, I am happy with my decision to study at university.							
11	Specifically, I am happy with my decision to study at the Universitas Indonesia.							
12	I meet people and make as many friendships as I want at the Universitas Indonesia.							
13	I am not working as hard as I should be in completing my course assignments.							
14	I have some close relations with other students at the Universitas Indonesia.							

(Continued on next page)

Appendix: (Continued)

No.	Statements	1	2	3	4	5	6	7
15	I have not been able to appropriately control my emotions recently.							
16	My family supports my decision to continue my studies at the Universitas Indonesia.							
17	I have less motivation to study recently.							
18	I hope I could study at other universities.							
19	I am satisfied with the numbers and variation of courses available at the Universitas Indonesia.							
20	Recently, I have been thinking of moving to other universities.							
21	I feel tense and nervous recently.							
22	I am satisfied with the quality of courses available at the Universitas Indonesia.							
23	I am satisfied that I have the chance to extend and develop social relationships at the Universitas Indonesia.							
24	I enjoy my academic assignments at the UniversitasIndonesia.							
25	I have a problem with completing my assignments.							
26	So far, I am satisfied with my courses.							
27	I am quite smart to finalise my academic assignment.							
28	I feel that I have a good health condition recently.							
29	Recently, I have been thinking of withdrawing from the Universitas Indonesia.							
30	Recently, I have been thinking of taking an academic leave from the Universitas Indonesia and finishing my studies in the next step.							
31	I am satisfied with my social life at the Universitas Indonesia.							
32	My family agrees with my decision to study at the Universitas Indonesia.							
33	I have no interactions with other students at the Universitas Indonesia.							
34	The Universitas Indonesia (including the study programme) cares about me.							

Brief-COPE¹⁰

These items deal with the ways in which you have been coping with the stressors in your life since you discovered you were going to have this operation. There are many ways to try to deal with problems. These items ask what you've been doing to cope with this one. People deal with things differently, but I'm interested in how you will try to deal with them.

Each item says something about a particular way of coping. I want to know the extent to which you've been doing what the item says. How much or how frequently? Don't answer based on whether it seems to be working or not; just indicate whether or not you're doing it. Using the following response choices, try to rate each item separately from the others. Make your answers as true FOR YOU as you can.

1 = I haven't been doing this at all.

2 = I've been doing this a little bit.

3 = I've been doing this a fair amount.

4 = I've been doing this a lot.

1. I've been turning to work or other activities to take my mind off things.
2. I've been concentrating my efforts on doing something about the situation I'm in.
3. I've been saying to myself, "This isn't real".
4. I've been using alcohol or other drugs to make myself feel better.
5. I've been getting emotional support from others.
6. I've given up trying to deal with it.
7. I've been taking actions to try to make the situation better.
8. I've refused to believe that it has happened
9. I've been saying things to allow my unpleasant feelings to escape.
10. I've been getting help and advice from other people.
11. I've been using alcohol or other drugs to help me get through it.
12. I've been trying to see it in a different light to make it seem more positive.
13. I've been criticising myself.
14. I've been trying to come up with a strategy about what to do.
15. I've been receiving comfort and understanding from someone.
16. I've given up the attempt to cope.
17. I've been looking for something good about what is happening.
18. I've been making jokes about it.
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping or shopping.
20. I've accepted the reality of the fact that it has happened.
21. I've been expressing my negative feelings.
22. I've been trying to find comfort in my religion or spiritual beliefs.

23. I've been trying to get advice or help from other people about what to do.
24. I've been learning to live with it.
25. I've been thinking hard about what steps to take.
26. I've been blaming myself for things that have happened.
27. I've been praying or meditating.
28. I've been making fun of the situation.

Questions for self-reflection:

Write your reflections on your adaptation process during your first year of study as a medical student at FMUI. You may use the following as guide questions:

1. What are the differences in the learning processes between high school and medical school? How do you feel about that?
2. How can you adapt to this situation?
3. Was there any problem in the adjustment process during your first year as a medical student? Why did this situation happen?
4. What are your future plans related to encountering these problems?