



Exploring Learning Barriers Through Reflective Experiences of First-Year Medical Students

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ABSTRACT

The first year of medical education represents a critical transitional phase that requires students to adapt to the rapid and intensive dynamics of medical learning. Learning reflection can serve as a means of understanding and identifying students' learning processes and barriers. Students' perspectives provide valuable information for gaining a comprehensive understanding of the learning process. However, research exploring learning barriers from the perspective of medical students remains limited. This study aimed to explore and identify the main themes of learning barriers experienced by first-year medical

students. A qualitative study using a phenomenological approach was conducted. Data were collected through an open-ended questionnaire addressing learning barriers, completed by 139 first-year medical students (93% response rate). To further explore the findings, interviews were conducted with six students with a grade point average (GPA) below 2.5. The data were analyzed thematically through a process of coding, categorization, and identification of major themes representing the respondents' experiences. The findings demonstrated that students were able to identify and articulate their learning barriers through reflective processes. Based on their sources, internal barriers were the most dominant theme. Overall, 56% of students reported internal barriers, 3% reported external barriers, 34% reported a combination of internal and external barriers, and 7% reported no learning barriers. The most frequently identified internal barriers included low motivation, poor time management, and ineffective learning strategies. Meanwhile, external barriers were predominantly related to peer dynamics, non-conducive learning environments, and academic workload. These findings suggest that learning reflection can be an effective approach for identifying students' learning barriers. Self-regulated learning mentoring programs and psychosocial support for first-year students could be further optimized. In addition, incorporating students' reflective perspectives into educational evaluation may complement current approaches that predominantly focus on curriculum and instructional processes.

1. INTRODUCTION

Medical education is characterized by learning demands that require students to acquire extensive knowledge, clinical skills, and critical thinking abilities. Medical curricula commonly adopt a student-centered learning approach, positioning students as active participants in the learning process. Within this approach, students are expected to identify their own learning needs, establish learning goals, seek relevant learning resources, and evaluate their learning outcomes (Atwa et al., 2026). Nevertheless, first-year students often face challenges in adapting to more independent learning methods and high academic demands. These changes may lead to various learning barriers, including difficulties in time management, academic stress, decreased motivation, and challenges in developing effective learning strategies (Dyrbye et al., 2006; Liranso & Mohan, 2018).

In this context, learning reflection is important in helping students understand their learning experiences. According to Kolb's (1984) Experiential Learning Theory, learning is a cyclical process consisting of four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation. During the concrete experience stage, students engage in various learning experiences, including lectures, group discussions, practical sessions,

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field practice, skills laboratory sessions, written examinations, oral examinations, identification examinations, and practical examinations. In the reflective observation stage, students examine their learning experiences more objectively and seek to understand different aspects of those experiences. The subsequent stage, abstract conceptualization, involves the formation of concepts, principles, generalizations, or new understandings based on the reflections generated in the previous stage. The final stage, active experimentation, involves testing or applying the concepts acquired to new situations. The results of this experimentation may generate new concrete experiences, allowing the learning cycle to continue.

Reflection serves as a bridge between experience and learning by enabling students to identify both successful aspects and barriers encountered during the learning process and subsequently develop strategies for improving future learning experiences. This suggests that reflection may help students manage academic stress and difficulties in adapting to the medical education environment. In the long term, reflection also contributes to the development of self-directed learning, self-regulation, and lifelong learning abilities (Sandars, 2009; Mann et al., 2009).

Although reflection has been widely incorporated into medical education, research specifically exploring learning barriers among first-year medical students through learning reflection remains limited. First-year students represent an important population for investigation because they are undergoing a transitional phase that may make them particularly vulnerable to various learning barriers. Understanding learning barriers during the early stages of medical education may also help institutions design more targeted interventions before these barriers develop into more serious academic problems. In this study, learning barriers refer to factors that interfere with the learning process, including academic, psychological, social, and learning-environment factors, as well as combinations of these factors.

Furthermore, educational evaluations conducted in many institutions have generally focused on external aspects, such as teaching quality, lecturer or tutor performance, and the availability of learning facilities. Meanwhile, information regarding students' individual learning experiences and the barriers they encounter remains relatively limited. As the individuals who directly experience the learning process, students can provide valuable insights into the teaching and learning processes within medical education institutions.

The findings of this study are expected to identify themes related to the learning barriers commonly encountered by students during their learning experiences. These findings may also provide an empirical basis for developing mentoring programs, academic support, student counseling, and improvements to first-year medical education systems that are more responsive to students' needs. Based on the aforementioned considerations, this study aimed to explore the learning reflections of first-year medical students and identify the main themes of learning barriers as a basis for developing more effective learning strategies.

2. METHOD

This study employed a qualitative research design using a transcendental phenomenological approach. This approach was selected because the study aimed to understand and reveal the essence of students' reflective experiences regarding learning barriers as directly experienced and interpreted by the students themselves. Unlike other qualitative approaches that focus on social construction or theory development, transcendental phenomenology emphasizes the exploration of participants' subjective experiences and is therefore appropriate for identifying the meanings embedded in students' reflections on their learning processes (Moustakas, 1994; Neubauer et al., 2019; Creswell & Poth, 2018).

The participants were active first-year undergraduate medical students. Total sampling was employed to obtain a comprehensive representation of the learning experiences of first-year students. A total of 139 students completed the learning-barrier reflection questionnaire, yielding a 93% response rate. Participants represented diverse academic backgrounds and learning experiences. Based on the questionnaire findings, six students were selected to participate in in-depth interviews. The number of interview participants was determined based on the principle of

data saturation, defined as the point at which additional interviews no longer generated substantial new themes or information (Saunders et al., 2018; Hennink & Kaiser, 2022).

Data were collected using an open-ended questionnaire and semi-structured interviews. The questionnaire was developed based on Kolb's concept of learning reflection and the literature on learning barriers among medical students. Prior to administration, the instrument was reviewed by two medical education experts and one qualitative research expert to assess its content appropriateness, clarity, and relevance to the study objectives. The feedback obtained from the expert review was used to refine the wording and structure of the questions.

The questionnaire was administered through Google Forms and included the following questions: "Have you experienced any internal or external difficulties during your learning activities so far?" and "Please describe the most significant internal and/or external difficulties you have experienced during your learning activities. If you consider that you have experienced no difficulties, please enter (-)."

Interview participants were selected purposively based on variations in characteristics considered likely to enrich the data, including the types of learning barriers reported, sex, academic group, and academic achievement. Students with a GPA below 2.50 were prioritized because they were considered to be at greater risk of experiencing significant learning barriers. GPA data were obtained from the faculty's academic affairs office after institutional permission had been granted. Interviews were conducted using a semi-structured interview guide developed based on the preliminary questionnaire findings and the study objectives. The interview guide allowed the researchers to use probing questions to explore students' reflective experiences in greater depth.

The study began with an explanation of its objectives, benefits, procedures, and participants' rights to all prospective participants. Students who agreed to participate provided electronic informed consent before completing the questionnaire. Following the preliminary analysis of the questionnaire responses, participants who met the interview criteria were contacted individually and invited to participate in an in-depth interview. The interviews were conducted face-to-face according to the participants' availability and lasted approximately 30–60 minutes. All interviews were audio-recorded with participants' consent and transcribed verbatim. To maintain confidentiality, each participant was assigned an identification code, and all personally identifiable information was removed from the transcripts. Participants received a reward after completing the questionnaire or interview.

This study received ethical approval from the Ethics Committee (KEP) of the Institute for Research and Community Service (LPPM), Universitas Jenderal Soedirman, under approval number 01.009/KEP-SOSHUM/VI/2025, dated June 12, 2025. Data were analyzed using a transcendental phenomenological approach based on the analytical procedures described by Moustakas (1994). The first stage involved identifying all relevant statements that were considered equally significant in describing students' experiences of learning barriers. The second stage involved reduction and elimination to determine statements that genuinely represented the phenomenon under investigation.

Meaningful statements were subsequently grouped into meaning units and categories through open coding. Related categories were then synthesized into major themes representing students' experiences of learning barriers. Following theme development, the researchers constructed textural and structural descriptions, which were subsequently integrated to describe the essence of the phenomenon experienced by the participants (Moustakas, 1994; Creswell & Poth, 2018).

Several strategies were employed to enhance the trustworthiness of the findings. Credibility was established through peer debriefing involving three researchers in the coding and data interpretation processes, as well as member checking with several participants to ensure that the interpretations accurately reflected their intended experiences. Dependability and confirmability were supported by maintaining an audit trail documenting the research process from data collection through theme development. In addition, source triangulation was conducted by using two data collection methods: reflective questionnaires and in-depth interviews (Nowell et al., 2017; Korstjens & Moser, 2018; Doyle et al., 2020).

3. RESULT AND DISCUSSION

Result

Data collection was conducted after the research team obtained ethical clearance from the Ethics Committee (KEP) of the Institute for Research and Community Service (LPPM), Universitas Jenderal Soedirman. Questionnaire data were analyzed based on participants' reflections on the learning barriers they experienced. Based on their source, learning barriers were categorized as follows.

Table 1. Sources of Learning Barriers Identified in the Questionnaire

Source of Learning Barrier	%
Internal	56%
External	3%
Internal dan External	34%
None	7%

Most first-year students reported that their greatest learning barriers originated from within themselves (internal factors). According to Kolb's Experiential Learning Theory, learning is a process of transforming experience through four stages: *Concrete Experience* (CE) → *Reflective Observation* (RO) → *Abstract Conceptualization* (AC) → *Active Experimentation* (AE) [9]. During the CE stage, students undergo various learning experiences throughout the academic year. The identification and reflection on learning barriers indicate that students had progressed through the RO stage by examining and making sense of their learning experiences. Learning barriers may emerge when this experiential learning cycle is disrupted by internal or external factors. Interview data were transcribed and analyzed to complement and clarify participants' questionnaire responses. Integration of the questionnaire and interview findings resulted in the following categories of learning barriers experienced by first-year undergraduate medical students.

Table 2. Categories of Learning Barriers

Source of Learning Barrier	Category	%
Internal	Low or lack of motivation	34,53
	Poor time management	24,46
	Learning strategies	23,74
	Stress, anxiety, and negative feelings	18,71
	General difficulties in adaptation	9,35
	Difficulties in socializing and collaborating	5,04
	Procrastination	3,60
	Self-expectations	3,60
External	Peer dynamics and conflicts	10,79
	Non-conducive learning environment	5,04
	Academic workload	4,32
	Organizational demands and dynamics	4,32
	Family conflicts	3,60
	Campus facilities and infrastructure	3,60
	Pressure and expectations	2,88
	Availability and quality of learning materials	2,88
	Technical barriers	2,16
	Teaching quality	1,44
	Financial barriers	1,44
	Distance between residence and campus	0,72

The findings indicate that the most frequently reported learning barriers originated from internal factors, particularly motivation, time management, and learning strategies. Among external factors, the most frequently reported barriers were related to peer dynamics and conflicts, a non-conducive learning environment, and academic workload.

Discussion

The questionnaire findings showed that most students identified their learning barriers as originating from internal factors (56%). The interview findings further clarified the specific forms and mechanisms underlying these barriers. Integration of the two data sources indicated that low motivation, ineffective time management, and suboptimal learning strategies were the most frequently reported experiences in students' reflections. Thus, the interview data not only corroborated the questionnaire findings but also provided deeper insight into how these barriers emerged and influenced students' learning processes.

During the transition to medical education, first-year students are expected to assume greater responsibility for setting learning goals, monitoring their progress, and evaluating their learning outcomes. These findings suggest that the primary challenges faced by first-year medical students extend beyond the complexity of academic content and include their capacity to independently manage the learning process through self-regulated learning. This capacity may not yet be fully developed during the first year, which may explain the predominance of internal learning barriers over external barriers. The transition to medical education therefore requires not only adaptation to increased academic demands but also the development of metacognitive and self-regulatory skills that enable students to effectively manage their learning.

The present findings are consistent with those of O'Sullivan et al. (2024), who examined 147 first-year medical students using the Learning and Study Strategies Inventory (LASSI). The areas identified as requiring the greatest attention were the use of learning resources (67%), the ability to identify main ideas (56%), motivation (51%), and concentration (50%). Other studies have likewise reported that major challenges during the first year of medical education involve self-management, adaptation to new learning methods, and the development of effective learning strategies (Atherley et al., 2021; Hill et al., 2018). Differences between the present findings and those of previous studies may reflect variations in institutional context, student characteristics, curriculum structure, and learning systems.

From the perspective of experiential learning theory (Kolb, 1984; Kolb & Kolb, 2005), the predominance of internal barriers suggests that many students had entered the Reflective Observation stage by recognizing and articulating difficulties encountered during their learning experiences. However, reflection does not necessarily progress automatically to Abstract Conceptualization and Active Experimentation, in which students derive new understandings from their experiences and subsequently apply new strategies to future learning situations. The recurrence of similar barriers may indicate that some students had identified their difficulties but had not yet translated these reflections into sustained behavioral changes. Therefore, reflection should not be viewed solely as a means of self-evaluation; it should also be supported by appropriate academic guidance to help students transform reflective insights into adaptive learning behaviors.

Low motivation was the most frequently reported internal barrier. This finding may be understood in the context of the first year as a transitional period from secondary education to medical education, characterized by increased content complexity, intensive learning activities, and greater expectations for independent learning. Such changes may lead students to lose clarity regarding their learning goals or experience declining motivation when confronted with academic difficulties. In medical education, motivation is particularly important because it influences students' allocation of effort, persistence in learning, and selection of learning strategies (Sobral, 2004).

This finding is consistent with Kusrkar et al. (2013), who reported a positive association between intrinsic motivation and academic achievement among medical students, both directly and through improvements in the quality of learning. Sobral (2004) similarly demonstrated that intrinsic motivation encourages medical students to actively seek learning experiences, reflect on

their learning processes, and develop a lifelong learning orientation. Collectively, these findings suggest that motivation contributes not only to academic achievement but also to students' willingness to engage in more effective and adaptive learning strategies.

Time management was another frequently reported internal barrier. Medical education is characterized by a demanding curriculum involving lectures, tutorials, practical sessions, skills laboratory activities, independent learning, and multiple forms of assessment that often occur concurrently. These demands require students to establish priorities, plan their learning activities, and allocate their time effectively. When these skills have not yet been adequately developed, students may be more likely to delay completing assignments, engage in last-minute studying before examinations, and experience a sense of being overwhelmed by academic demands. Thus, difficulties in time management may reflect inadequate planning and prioritization in students' daily activities (Sari et al., 2017).

The following interview excerpts illustrate how these internal barriers were experienced in students' everyday learning:

"Giliran saya dengar lecture, malah saya kerjain preprak, gitu. Jadi, waktunya nggak pada tempatnya, gitu, Bu. Jadi, kacau lah, gitu." (R3)

"Capek iya, rasa nggak bisa iya, banyak hambatannya iya..ngaruh banget ke motivasi belajar" (R2)

"Kalau dari internal itu, pertama sukanya malas-malasan" (R4)

"Dulu itu bener-bener belum paham sepenuhnya materi... nggak paham apa-apa, belajar cuma sebelum praktikum doang" (R6)

The excerpts indicate that students experienced not only academic difficulties but also challenges in managing their own learning processes. Such difficulties are commonly observed among first-year students who are adapting to the demands of self-directed learning in medical education (Atwa et al., 2026). The characteristics of the medical curriculum should also be considered when interpreting these findings. Block-based systems, problem-based learning, practical sessions, skills laboratory activities, and expectations for independent learning require students to possess strong self-regulatory abilities. During the first year, students may still rely on learning habits developed in secondary education, which often emphasize memorization and teacher-directed instruction. Upon entering a learning environment that requires greater autonomy and knowledge integration, students may experience a mismatch between curricular demands and their existing learning capacities. This mismatch may manifest as difficulties in selecting appropriate learning strategies, managing time effectively, and maintaining learning motivation.

Inappropriate or ineffective learning strategies were also identified as a major learning barrier. In their reflections, several students reported that the strategies they had previously used were not fully aligned with the characteristics of medical education. Students continued to describe a tendency to rely on memorization, whereas medical education requires conceptual understanding, integration of basic sciences with clinical contexts, and clinical reasoning. As a result, some students felt that they had devoted considerable time to studying without achieving commensurate learning outcomes. This finding is consistent with Ward (2011), who reported that students adopting a deep approach to learning achieved better academic outcomes than those relying on a surface approach. A deep approach is characterized by efforts to understand relationships among concepts, integrate new knowledge with previous experiences, and develop conceptual understanding, whereas a surface approach places greater emphasis on short-term memorization. Similar findings were reported by Biggs et al. (2011), who argued that the quality of students' learning outcomes is strongly influenced by the alignment between learning strategies and the intended learning outcomes. Therefore, first-year students should receive early guidance on learning strategies that are appropriate for the characteristics and demands of medical education.

These three major barriers appear to be interconnected and may form a reinforcing cycle. Low motivation may reduce students' consistency in managing their time and increase their tendency to rely on ineffective learning strategies. Conversely, inappropriate learning strategies and poor time management may reduce students' confidence in their ability to learn effectively, further weakening their motivation. This interaction suggests that learning barriers should not be

viewed as isolated factors but rather as interconnected elements of students' adaptation to the medical education environment. This finding is consistent with the systematic review by Ferguson et al. (2002), which concluded that success in medical education is not determined solely by prior academic ability but is also influenced by non-cognitive factors, including motivation, study habits, self-regulatory skills, and adaptation to the learning environment.

In addition to internal factors, this study identified several external barriers that affected students' learning processes. The most frequently reported external barriers were peer dynamics and conflicts, a non-conducive learning environment, and academic workload. Peer dynamics and conflicts were the most prominent external barrier. This finding is noteworthy because research in medical education has often focused more heavily on academic stress than on the role of social relationships in students' learning experiences. Among first-year students, peer groups play an important role as sources of both social and academic support during the adaptation process.

The following interview excerpts illustrate how external barriers were experienced in students' everyday learning:

"Saya udah nolak, Bu... Tapi terus aja kayak diajak main terus, Bu, sampai saya ngerasa nggak enak buat nolak lagi, gitu." (R3)

"Partner.. karena bisa nyemangatin juga, nemenin belajar." (R2)

"Sering kumpul sama orang aja... biar ada kemampuan sosialnya juga" (R5)

These findings support the study by Graves et al. (2022), which demonstrated that social support from peers is an important protective factor for the well-being of medical students. Conflicts within peer relationships may reduce students' comfort in the learning environment, diminish emotional support, and increase psychological stress.

Other prominent external barriers identified in this study were a non-conducive learning environment and academic workload. Interestingly, both factors appeared to interact with students' internal characteristics. A high academic workload may not necessarily pose a major problem for students with effective time-management skills and appropriate learning strategies; however, it may become a significant source of stress for students who have not yet developed adequate self-regulatory abilities. Thus, students' learning barriers should not be understood as isolated factors but rather as the result of interactions between individual characteristics and the learning environment.

External barriers may also be closely intertwined with students' internal factors. Therefore, the external barriers identified in this study warrant further investigation to determine more appropriate and targeted solutions. Several other external barriers reported by students also require attention from institutional stakeholders to optimize the learning process, particularly academic workload and campus facilities and infrastructure. In addition, students' families may play an important role in providing support that facilitates students' learning and adaptation during the first year of medical education.

The findings have important implications for the development of academic support programs for first-year medical students. Students' reflective reports should not be used solely as a means of learning evaluation but should also inform the development of targeted academic support interventions. Programs such as learning-strategy training, strengthening intrinsic motivation, time-management training, and regular guided reflection may help students progress more fully through Kolb's experiential learning cycle. In this way, reflection can extend beyond the identification of learning barriers to facilitate changes in learning strategies that may contribute to students' long-term academic success (Kolb & Kolb, 2005; Kusrkar et al., 2013).

These findings also have important practical implications for medical education. First, students' reflective reports may be incorporated into an early-warning system to identify students who are at risk of experiencing academic difficulties. Second, institutions should consider developing structured academic mentoring programs, delivered through academic advisors as well as peer mentoring by senior students. Third, targeted training in learning strategies, time management, and reflective skills should be introduced early in the medical curriculum. Fourth, the development of student well-being programs addressing mental health, social support, and students' adaptive capacities should be considered as part of a comprehensive support system for first-year medical students.

This study has several limitations. First, it was conducted at a single institution; therefore, the transferability of the findings to other medical education contexts should be considered with caution. Second, the number of interview participants was relatively small, although data saturation was achieved. Third, the use of an online questionnaire may have introduced response bias, as participants may have provided shorter or less detailed responses than those elicited through face-to-face interviews. Fourth, as with qualitative research in general, data interpretation remains subject to potential researcher subjectivity despite the use of peer debriefing and member checking.

Despite these limitations, this study makes an important scholarly contribution by demonstrating that learning reflection can serve not only as a means of promoting students' self-development but also as an approach to curriculum evaluation and the identification of academic support needs among first-year medical students. The findings indicate that reflection can reveal a range of learning barriers that may remain undetected through conventional educational evaluations focused primarily on teaching quality or educational facilities.

Future research should employ longitudinal designs to examine changes in students' reflections and learning barriers throughout their medical education. Intervention studies are also needed to evaluate the effectiveness of academic mentoring, learning-strategy training, reflective-skill development, and student well-being programs in reducing learning barriers and improving academic outcomes among medical students.

4. CONCLUSION

First-year medical students reported various learning barriers through their reflective experiences. The most frequently reported learning barriers originated from internal factors, particularly motivation, time management, and learning strategies. The most prominent external barriers were related to peer dynamics, a non-conducive learning environment, and academic workload. The predominance of internal learning barriers may be associated with students' self-regulated learning capacities and their adaptation to the demands of the first year of medical education. Learning reflection can therefore serve not only as a means of promoting students' self-development but also as a complementary approach to curriculum evaluation and the optimization of academic support for first-year medical students.

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6. REFERENCES

- Atherley, A.E., Nimmon, L., Teunissen, P.W., Dolmans, D., Hegazi, I. and Hu, W., 2021. Students' social networks are diverse, dynamic and deliberate when transitioning to clinical training. *Medical Education*, 55(3), pp.376-386.
- Atwa, H., Shehata, M.H., Kumar, A.P. *et al.* Readiness for self-directed learning among first-year medical and nursing students at the Arabian Gulf University in Bahrain. *BMC Med Educ* **26**, 877 (2026). <https://doi.org/10.1186/s12909-026-09261-0>
- Biggs, J.B., Tang, C.S.K. and Kennedy, G., 2011. *Teaching for quality learning at university* (Vol. 4, No. 5). Maidenhead: Open university press.
- Creswell JW & Poth CN. 2018. *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. 4th ed. Thousand Oaks: Sage Publications.
- Doyle, L., McCabe, C., Keogh, B., Brady, A. and McCann, M., 2020. An overview of the qualitative descriptive design within nursing research. *Journal of research in nursing*, 25(5), pp.443-455.

- Dyrbye, L.N., Thomas, M.R. and Shanafelt, T.D., 2006. Systematic review of depression, anxiety, and other indicators of psychological distress among US and Canadian medical students. *Academic medicine*, 81(4), pp.354-373.
- Ferguson, E., James, D., & Madeley, L. 2002. Factors associated with success in medical school: Systematic review of the literature. *BMJ*, 324(7343), 952–957.
- Graves, J., Flynn, E., Woodward-Kron, R. and Hu, W.C., 2022. Supporting medical students to support peers: a qualitative interview study. *BMC Medical Education*, 22(1), p.300.
- Hennink M, Kaiser BN. 2022. Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Soc Sci Med*. 292:114523.
- Hill, M.R., Goicochea, S. and Merlo, L.J., 2018. In their own words: stressors facing medical students in the millennial generation. *Medical education online*, 23(1), p.1530558.
- Kolb, D. A. 1984. *Experiential Learning: Experience as the Source of Learning and Development*. Prentice-Hall.
- Kolb, D. A., & Kolb, A. Y. 2005. *Learning styles and learning spaces*. AMLE
- Korstjens I, Moser A. 2018. Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *Eur J Gen Pract*. 2018;24(1):120–124.
- Kusurkar, R. A., Ten Cate, T. J., Vos, C. M., Westers, P., & Croiset, G. 2013. How motivation affects academic performance: A structural equation modelling analysis. *Medical Education*. 47(1), 57–69.
- Liranso, G. and Mohan, S., 2018. Mental health distress and academic performance of medical students: a review. *J Psychol Clin Psychiatry*, 9(6), pp.675-678.
- Mann, K., Gordon, J., & MacLeod, A. 2009. Reflection and reflective practice in health professions education: A systematic review. *Advances in Health Sciences Education*, 25(4), 1–20.
- Moustakas, C. 1994. *Phenomenological research methods*. Sage Publications, Inc. California.
- Neubauer, B.E., Witkop, C.T. and Varpio, L., 2019. How phenomenology can help us learn from the experiences of others. *Perspectives on medical education*, 8(2), pp.90-97.
- Nowell, L.S., Norris, J.M., White, D.E. and Moules, N.J., 2017. Thematic analysis: Striving to meet the trustworthiness criteria. *International journal of qualitative methods*, 16(1), p.1609406917733847.
- O' Sullivan, S., Hageh, C.A., Dimassi, Z. et al. 2024. Exploring challenges in learning and study skills among first-year medical students: a case study. *BMC Med Educ* 24, 869. <https://doi.org/10.1186/s12909-024-05850-z>
- Sanders, J., 2009. The use of reflection in medical education: AMEE Guide No. 44. *Medical teacher*, 31(8), pp.685-695.
- Sari, M. I., Lisiswanti, R., & Oktafany, O. 2017. Manajemen Waktu pada Mahasiswa: Studi Kualitatif pada Mahasiswa Kedokteran Universitas Lampung. *Jurnal Kedokteran Universitas Lampung*, 1(3), 525–529. <https://doi.org/10.23960/jkunila.v1i3.pp525-529>
- Saunders B, Sim J, Kingstone T, et al. 2018. Saturation in qualitative research: Exploring its conceptualization and operationalization. *Quality & Quantity*. 52(4):1893–1907.
- Sobral, D. T. 2004. What kind of motivation drives medical students' learning quests? *Medical Education*, 38(9), 950–957.
- Ward, P.J., 2011. First year medical students' approaches to study and their outcomes in a gross anatomy course. *Clinical Anatomy*, 24(1), pp.120-127.