Academic Motivation in Medical Education: A Literature Review

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Abstract. The concept of academic motivation has intrigued researchers for many years, and more recently, there has been a growing interest in exploring this concept within Traditional Mongolian medical education. The aim of the study is to comprehensively review academic motivation, using an analysis of existing research to enhance our understanding of its concept and its practical implications in medical education. Methods: we performed a thorough review of the literature, searching through databases such as PubMed, PsycINFO, and Google Scholar. This process yielded a total of 1,343 articles. Inclusion and exclusion criteria were determined based on the presence of empirical research, the use of specific measurements to assess the motivation of medical students, and the quality of methodology in qualitative research studies. Our review focused solely on studies related to academic motivation in the context of medical students and medical schools, with other studies not considered for inclusion.. Results: The review incorporated findings from a total of 15 articles. The Theory of Self-Determination frames motivation as a spectrum, with intrinsic motivation and amotivation positioned at opposite ends of the spectrum. Intrinsic motivation, being the most autonomous form, was found to be correlated with perceived family support, personal choice to study medicine, and the positive attribute of determination. Conversely, amotivation was associated with factors such as being male, making medicine as a personal choice, and experiencing depression. Conclusion: Intrinsically motivated behaviors are regulated by a type of motivation known as self-determination. Intrinsic motivation is labeled as such because it represents an inherent, personal drive to engage in an activity due to one's own interest, enjoyment, satisfaction, or recognition of its significance. This inner motivation can be sparked by the excitement of discovering new knowledge, encountering and overcoming challenges, and successfully solving problems. On the contrary, amotivation signifies a absence of motivation, characterized as the least self-directed form, devoid of any particular regulation of behaviors.

Keywords: Academic Motivation · Literature review · Medical Education · Traditional Mongolian Medicine

1 Introduction

Academic motivation (AM) serves as the driving force that motivates, directs, empowers, and sustains learning activities to meet the needs and stimulate learning interests of Mongolian Traditional Medical students' [1]. The undergraduate years of a student's life are often regarded as a crucial period for the personal growth and development. It is a time when individuals accumulate a wealth of knowledge, acquire various qualities, life skills, and both fundamental and vocational expertise [2]. However, a number of students attend university without clear sense of their academic goals and lack enthusiasm for their chosen profession [3], while other students study hard because of certain external and objective requirements [4]. We have proposed for the first time that Traditional Mongolian Medicine is a comprehensive system of medical and scientific knowledge that has developed over hundreds of years of nomadic lifestyle (Tserendagva, 2017 and 2019). The ancestors of the Mongolians accumulated a wealth of healthcare knowledge strongly influenced by their geographical locations, environments, and climate conditions [5].

Furthermore, they successfully developed typical diets, medicines, and other treatments. According to historical records, the Mongolians possessed proficient medical knowledge at least 2000 years ago. The current Mongolian government recognizes Traditional Mongolian Medicine (TMM) as a vital component of comprehensive healthcare services for the population. The development of Traditional Mongolian Medicine (TMM) is occurring in parallel with Western medical practices, aiming to establish the scientific foundation of TMM from a contemporary standpoint. This process not only enriches the body of knowledge but also extends the practical applications of TMM [6].

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Traditional Mongolian Medicine (TMM) operates on a distinctive and integrated theoretical framework that perceives the human body as a unified entity consisting of both opposing forces and unity. The process of diagnosis in TMM primarily relies on three fundamental elements: observation, interrogation, and pulse examination. Additionally, it incorporates supplementary diagnostic methods like palpation, auscultation, olfaction, and urine analysis. Based on the information gathered through these comprehensive examinations, TMM practitioners conduct a thorough analysis to pinpoint the specific illness or syndrome and provide a definitive diagnosis.

Following the diagnosis, the practitioner formulates a treatment principle and prescribes appropriate medications. This treatment regimen may be complemented by supportive therapies, such as bloodletting, acupuncture, moxibustion, massage, bone adjustment, diet therapy, and medicated bathing. Notably, medicated bathing has demonstrated remarkable effectiveness in addressing various health issues, including liver disorders, apoplexy, digestive system conditions, and female genital-organ conditions. Traditional Mongolian medical techniques, such as cerebral re-adjustment for treating concussions, the skill of bone adjustment for fractures and dislocations, and medicated bathing for specific skin and rheumatic conditions, have proven to be highly effective and are highly valued not only by Mongolian nationals but also by individuals from other cultures. [6].

Autonomous motivation is when individuals participate in an activity because they find it pleasurable, satisfying, and regard it as significant. This form of motivation can be categorized into two main types: Identified Regulation: In this category, individuals willingly value the behavior and recognize it as important. While the locus of causality is somewhat internal, the behavior is viewed as a means to achieve a specific objective. Internal Regulation: Internal regulation, often associated with intrinsic motivation, represents the most self-determined form of behavior. It signifies a strong inner drive to engage in an activity purely for the pleasure or satisfaction it brings, without being influenced by any internal or external pressures. [7].

2 Methodology

To gather relevant literature on the topic of medical students' motivation, we conducted a systematic search in September 2022 and again in March 2023 using automated search engines, including PubMed, PsycINFO, and Google Scholar. We employed a set of keywords such as "motivation," "motivated," "motive," "motivator," "Traditional Medicine," "Academic motivation," "medical student," and "undergraduate medical education" during our searches. Furthermore, we conducted a manual review of the references mentioned in relevant articles to uncover additional resources within the Mongolian National University of Medical Sciences Library. To pinpoint the specific instruments used for assessing the motivation of medical students, we carried out a more targeted search using the strategy described above, incorporating keywords such as "questionnaire," "assessment," "instrument," and "scale". We continued the search process by exploring references in the articles we found, following a snowball method, until no new references emerged. In total, we retrieved 230 papers from PubMed, 731 from PsycINFO, and 382 from Google Scholar, resulting in a total of 1,343 papers. Subsequently, after eliminating papers that did not pertain to motivation in medical education (1250 papers), and removing duplicates (26 papers from different databases), we were left with 67 articles for review. Based on our predefined inclusion and exclusion criteria, we selected a total of 15 publications for a detailed analysis. Table 1 outlines the criteria we used for inclusion and exclusion in our review of academic motivation in medical education. These selected papers are discussed extensively in the Results and Discussion section, with a specific focus on academic motivation within the context of medical education (Fig. 1).

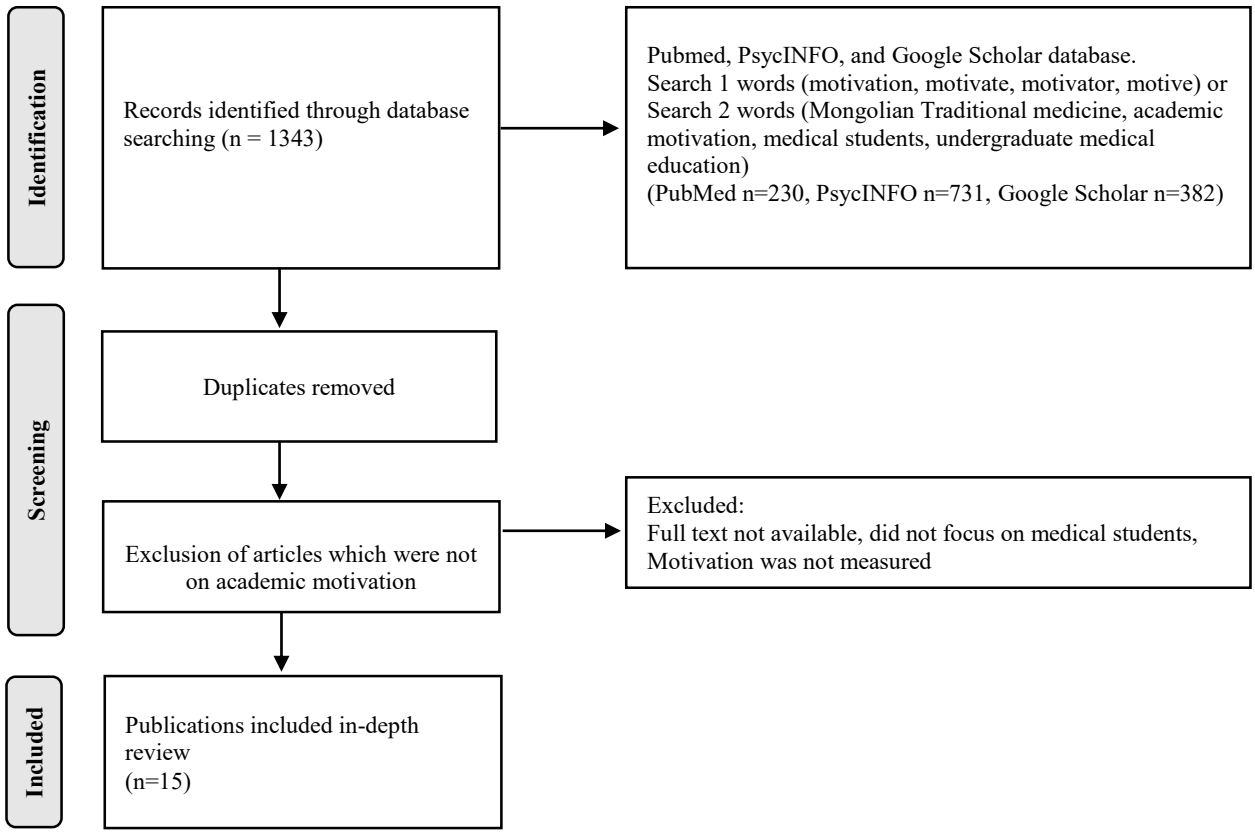

Fig. 1. Kusurkar's scheme of literature search and results

Table 1. Outlines the inclusion and exclusion criteria used in the review of academic motivation in medical education:

Inclusion	**Exclusion**
Studies/reviews on motivation that report empirical research on undergraduate medical students	Full text is not available
Studies identifying motivation for Traditional Mongolian Medicine/medical university/medicine	Did not focus on medical students
Quantitative research studies with well-formulated definitions and operationalization of concepts, analysis of data, and specific measurement of motivation	Motivation was not measured
Must be open access to full text	Quantitative studies that did not have data analysis
Must be conducted in English	Papers in languages other than English

3 Data analysis

Table 2 shows the main 15 articles that were selected for further review.

Table 2. Main 15 research papers included in the review (2013-2023)

#	Ref.	Country	Study type
1	M Tanaka et al. (2013)	Japan	Quantitate
2	S.-i. Kim et al. (2013)	South Korea	Review article
3	Rashmi A. Kusurkar et al. (2013)	Netherland	Quantitate, Quality
4	Rashmi A. Kusurkar et al. (2013)	Netherland	Quantitate
5	M Xu et al. (2014)	Australia	Quantitate, Quality
6	Sun Kim et al. (2014)	South Korea	Quantitate
7	Rashmi A. Kusurkar et al. (2015)	Netherland	Literature review
8	A Wouters et al. (2016)	Netherland	Quantitate, Quality
9	Anouk Wouters et al. (2016)	Netherland	Quantitate, Quality
10	AA Hayat et al. (2018)	Iran	Descriptive-correlative research
11	Kunanitthaworn N et al. (2018)	Thailand	Observational
12	Rashmi A. Kusurkar et al. (2019)	Netherland	Personal view
13	S Halasa et al (2020)	Jordan	Experimental
14	AM Al Ansari, et al. (2021)	Bahrain	Quantitate
15	Hosseini SM, et al (2022)	Iran	Quantitate, Quality

3.1 Theory of Self-Determination

Delving deep into the foundational theories of academic motivation, various perspectives have emerged. Major theories include Maslow's Hierarchy of Needs (1970), Franken's Need to Achieve Theory (1988), Atkinson's Expectancy-Value Theory (1966), Weiner's Attribution Theory (1974), Bandura's Social Cognitive Theory (1986, 1989), Pintrich's Goal Theory (2000), and Deci & Ryan's Self-Determination Theory (1985). These theories, as previously mentioned, address motivational issues at different levels.

To understand the factors that motivate individuals and the aspects of motivation that are self-determined, The "Theory of Self-determination" was proposed by psychologists Edward L. Deci and Richard M. Ryan [8]. This theory delineates distinct levels of motivation: intrinsic and extrinsic motivation, as well as amotivation (see Figure 2). The Theory of Self-Determination places significant emphasis on how individuals internalize external ideas, values, goals, and intentions within the context of their social environment. [9]. This encompasses the interplay between an individual and their surrounding environment and has been a concept that has inspired numerous studies in the field of medical education in Mongolia [10].

The idea that learning is enhanced through motivational mechanisms aligns with the core principles of the Theory of Self-Determination. This theory essentially posits that human behavior is driven by three fundamental and universally experienced psychological needs that promote the development of self-determination:

Autonomy involves the desire to be involved in activities where individuals can make their own choices, allowing them to feel empowered to decide and have some level of control over their actions.

Competence: This need is connected to the feeling of being capable and self-assured in performing a specific behavior with a certain level of skill and proficiency. It relates to one's belief in their ability to effectively carry out a task.

Relatedness: This need involves the desire to know that one's actions are positively acknowledged by others or that engaging in these behaviors fosters social interaction and relationships. It pertains to the sense of being connected to and valued by others in one's social environment.

These three fundamental psychological needs, autonomy, competence, and relatedness, are integral to the Theory of Self-Determination and play a pivotal role in motivating human behavior and supporting the development of self-determination [9].

The principles of the Theory of Self-Determination are highly pertinent in the realm of professional education. They underscore the importance of recognizing and comprehending different forms of motivation and how these motivations can influence a broad spectrum of learning outcomes. Therefore, causality attributions [11, 12] and related concepts, [13, 14] not just to defining and reaching goals, but also to the kind

of motivation (intrinsic or extrinsic) and the perspectives individuals have regarding motivation [8]. These constitute important areas for investigation.

Research in the field of university-level education, particularly in medical learning, has gained prominence. Kusurkar et al. [15] the study identified a positive correlation between intrinsic motivation and certain factors, including the use of effective study strategies, the number of hours dedicated to self-study, and academic performance. In particular, this association was noted within the group of sixth-year medical students at the University Medical Center Utrecht.. On the other hand, the study also found a negative correlation between intrinsic motivation and feelings of exhaustion, suggesting that higher levels of intrinsic motivation were associated with lower levels of exhaustion among these students. Hayat, Salehi and Kojuri [16] The research revealed a favorable connection between both intrinsic and extrinsic motivation and the academic achievements of medical students enrolled at Shiraz University of Medical Sciences. This indicates that higher levels of both intrinsic and extrinsic motivation were associated with better academic performance among the students in the study. Sobral et al. [17] the study identified distinct patterns of intrinsic and extrinsic motivation, which are sometimes referred to as autonomous and controlled motivation, respectively. These patterns appeared to be associated with the perceptions of medical students regarding their learning experiences and the educational environment in which they were studying. This suggests that the nature of motivation, whether it is more self-determined (intrinsic/autonomous) or more influenced by external factors (extrinsic/controlled), may be linked to how medical students perceive their learning and the educational context in which they are situated.

According to Kim et al., [18] The neuroscientific model of motivational processes provides valuable insights into enhancing motivation for learning, which can have significant educational implications. In the learning environment, motivation plays a crucial role, and rewards can be a powerful tool for promoting positive behaviors and engagement in the educational process. To inspire and engage students, especially those who may initially lack motivation, it's important to create a learning experience that is enjoyable and rewarding. Rewards can take various forms, including:

Positive Feedback: Providing students with constructive and encouraging feedback on their efforts and achievements can boost their motivation.

Praise: Recognizing and acknowledging students for their hard work and accomplishments can be motivating.

Engaging Activities: Incorporating activities and tasks that capture students' interests and curiosity can make the learning process more enjoyable.

Practical Utility: Demonstrating the practical relevance and real-world applicability of the content can motivate students by showing them the value of what they are learning.

Social Support: Building a supportive and collaborative learning environment where students feel connected with their peers and educators can enhance motivation.

Real-Life Connections: Showing how the material relates to real-life situations and challenges can make the content more meaningful and motivating. It's essential to identify a range of appealing incentives, such as compliments, enjoyable tasks, intriguing materials, constructive feedback, and innovative learning settings. These incentives can activate the brain's reward system, particularly in children and adolescents, and contribute to increased motivation for learning.

Comprehending the diverse and intricate aspects of self-regulated learning is vital for designing instructional approaches that enhance the quality of the teaching and learning process. As suggested by Kusurkar et al., higher levels of self-driven motivation are linked to students' utilization of efficient study methods, heightened study effort, and improved GPAs [19]. The study underscores the significance of taking motivation into account in the context of medical education. It highlights that intrinsic motivation, which is driven by one's own interest and internal factors, is associated with improved learning and better performance among medical students. To enhance intrinsic motivation, the study suggests that it's crucial to provide students with:

Autonomy in Learning: Allowing students to have a degree of control and choice in their learning processes, which can foster a sense of ownership and engagement.

Feedback on Competence: Providing students with constructive feedback that reinforces their sense of competence and proficiency, which can boost their confidence and motivation.

Emotional Support: Creating an emotionally supportive learning environment where students feel valued and encouraged, as this can positively impact their motivation to learn.

By incorporating these elements into medical education, educators can help nurture intrinsic motivation, which, in turn, can lead to more effective learning and improved academic performance among medical students. [20].

Doehee Ahn et al. [21] highlighted that medical educators should be mindful of the impact of medical students' perceived stress and academic motivation on their academic performance, which can significantly

influence their quality of life and psychological well-being. They recommended the development of an academic adjustment program to alleviate perceived stress during medical training.

In a study conducted by Wouters et al., it was discovered that one factor contributing to the demanding nature of the selection process is the requirement for applicants to invest time in healthcare activities. This criterion may lead to the selection of the most motivated students, a hypothesis previously suggested by other researchers [22].

Tanaka et al. further expounded on the universality of the adaptive effects of intrinsic motivation. They emphasized the crucial role of experiencing pleasure even in repetitive learning scenarios. Therefore, educators are urged to foster intrinsic motivation in the classroom, enabling learners to find enjoyment in the learning process and achieve higher proficiency. Additionally, Tanaka et al. highlighted the individuality of motivational roles. Specifically, they found that introjected regulation, as opposed to amotivation, emerged as a negative predictor of proficiency learning in subjects [23].

Type of Motivation	Amotivation	Extrinsic Motivation				Intrinsic Motivation
Type of Regulation	Nonregulation	External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Regulation

Fig. 2. The Self-determination continuum (Ryan & Deci 2000a)

3.2 Academic motivation

Academic motivation is one of the primary driving forces behind education [24]. The scale encompasses seven subscales, all rooted in Self-Determination Theory (SDT): the study employs a framework that categorizes motivations into distinct types, encompassing intrinsic motivations related to the pursuit of knowledge, task completion, and stimulating experiences, as well as extrinsic motivations which involve identified regulation, introjected regulation, and external regulation, alongside amotivation. The study draws upon the Academic Motivation Scale for references to each motivation category. In the context of intrinsic motivations, they are further subdivided into three categories: the motivation to seek knowledge (engaging in an activity for the pleasure derived from learning, exploring, or understanding); the motivation to accomplish tasks (undertaking activities for the satisfaction derived from achieving or creating); and the motivation to seek stimulation (engaging in activities with the aim of experiencing stimulating sensations, whether sensory or aesthetic in nature). Extrinsic motivations encompass: regulation by identification (engaging in an activity because one has personally decided to do so); introjected regulation (performing an action under self-imposed pressure); and external regulation (undertaking an activity due to external pressures or expectations from others). Finally, amotivation signifies a lack of acknowledgment of the link between one's actions and their consequences, indicating a complete absence of both intrinsic and extrinsic motivation.. The analysis of these motivation types aligns with the parameters outlined by Ryan et al [25].

3.3 Andragogy

Andragogy, as defined by Knowles et al. (2012) [26], is the practice and study of educating and learning that is designed for adult learners, encompassing both the artistic and scientific aspects of the process. In contradistinction to pedagogy, which primarily focuses on the education of children, Andragogy places a strong emphasis on learners' autonomy. The goal of andragogy is to enable individuals to take charge of their own learning, with teachers serving as facilitators. According to andragogy, medical students, as adult learners, should bear the responsibility for guiding their own educational journeys. This includes understanding their motivations for learning, as well as planning and implementing their learning strategies [27]. As a result of this heightened autonomy in the learning process, the motivational dynamics of adult learners tend to evolve from being primarily externally motivated to becoming increasingly driven by intrinsic factors. As stated, 'While adults may respond to external motivators such as better job prospects, promotions, or higher salaries, the most powerful motivators are internal, stemming from the desire for increased job satisfaction, enhanced self-esteem, and an improved quality of life [28].

Regarding motivation to learn, it is generally considered an internal drive for mature individuals. Nevertheless, Misch DA et al. [29] have argued that contended that the manifestation of intrinsic or extrinsic motivations among medical students can be shaped by the particular context and educational setting in which they pursue their medical studies. In reality, intrinsic and extrinsic motivations are intricate and often intertwined. Efforts to rigidly delineate motivations as purely intrinsic or extrinsic are insufficient in capturing the multifaceted factors that propel medical students in their pursuit of education [28].

For instance, motivations linked to the study of Medicine can encompass both intrinsic and extrinsic elements, such as an attraction to the prestige and potential financial rewards associated with the field. These

motivations are interconnected, and both types may influence medical students' behaviors depending on the specific circumstances.

3.4 Social Cognitive Theory

Bandura‘s Social Cognitive Theory (SCT) [30] The theory underlines the connection between incentives and motivations, suggesting that individuals can employ specific strategies to attain rewards they find valuable. Within this framework, setting appropriate goals along with rewards is considered a crucial strategy for enhancing the motivation of medical students. For instance, when it comes to goal setting and rewards, it is important to strike a balance. Realistic and achievable goals can enhance motivation by providing students with a sense of purpose and the expectation of a reward. However, goals that are overly challenging or too easy may have a detrimental effect on motivation. In such cases, excessively difficult goals might demotivate students, while overly simple goals may not offer a sufficiently motivating incentive. Therefore, it is important to carefully set goals that are challenging but attainable, and to link these goals with appropriate rewards to boost the motivation of medical students in their learning and educational endeavors. Based on SCT, (Mann et al., 1999) the discussion highlighted to certain issues pertaining to the establishment of goals in the context of medical education. Mann (1999) argued that medical curricula should aim to teach students not just to memorize information but also to develop essential skills such as learning how to learn, understanding, applying, analyzing, and synthesizing information. This suggests that the educational goals in medical education should go beyond rote memorization and focus on fostering a deeper understanding and application of knowledge. Furthermore, the assessment methods used in medical education, particularly tests, are often centered on memorization rather than assessing the higher-order thinking skills mentioned above. This misalignment between the intended educational goals and the assessment methods can be a concern, as it may not effectively measure the desired outcomes. Additionally, it was noted that medical educators emphasize the importance of instilling qualities like altruism, a sense of duty, and professional skills in medical students as essential educational goals. However, students may observe discrepancies in the professional qualities of faculty members and how they are rewarded or recognized for their contributions. These observations can lead to a mismatch between the stated educational goals and the practical realities within the medical education environment. Overall, the discussion highlights the need for alignment between educational goals, teaching methods, and assessment practices in medical education, as well as addressing any disparities in the recognition and reward systems for faculty members [31]. Moreover, there exists a disparity between the objectives set by medical institutions and the personal goals of medical students. As exemplified by Mann (1999), while both medical institutions and students aim for outstanding performance, institutions additionally aspire to nurture compassionate physicians, a goal that may not be as highly valued by individual students. Mann's primary recommendation is to address and reconcile these disparities in goal setting, align assessments and incentives with institutional objectives, and guide learners towards the intended learning goals by providing them with pertinent performance feedback.

Although Social Cognitive Theory (SCT) is a valuable framework for addressing the aforementioned concerns, it has faced criticism for its strong focus on motivation [32, 33]. Researchers who solely focus on the quantitative aspect of motivation might primarily be concerned with understanding the factors that influence the level or amount of motivation. However, this approach may overlook the essential social and qualitative aspects of motivation. Specifically, it may neglect to consider the various types of motivation and how these different types of motivation can have distinct effects on educational outcomes in a medical school context and its surrounding environment. In other words, studying motivation solely in terms of its quantity, such as how much motivation a student has, may not capture the full picture. Different types of motivation, such as intrinsic (internal) motivation and extrinsic (external) motivation, can have distinct influences on a student's engagement, learning, and overall educational experience. To gain a comprehensive understanding of motivation in medical education, it's crucial to consider both the level of motivation and the different forms of motivation, as well as how social factors and the educational environment interact with these various motivational factors. This holistic perspective can provide a more nuanced insight into the complexities of motivation and its impact on educational outcomes in medical school.

4 Summary of the findings

Choosing medicine as a career. The selection of a medical career has been a subject of research to elucidate the driving forces behind students' choices to pursue medical school. Through the utilization of the Medical Situations Questionnaire in the UK, four predominant foundational dimensions have emerged: a desire to assist others, a pursuit of respect, the aspiration to be indispensable, and the ambition to engage in scientific pursuits [34].

Altruism, which is underpinned by the overarching aim of advancing the welfare of others, stands in contrast to egoism, where actions are primarily driven by self-interest and personal gain [34]. The author

delineates nine behaviors that embody the concept of medical professionalism and which physicians need to demonstrate to fulfill their responsibilities to patients, communities, and their medical field. As an illustration, one of these behaviors is physicians prioritizing the well-being of others over their own interests (e.g., "Physicians place the interests of others ahead of their own") [35].

Gender. Studies on gender differences regarding the motivations for pursuing a career in medicine have uncovered specific trends. Among male individuals, the most prominent motivations for choosing medicine include an affinity for science, a commitment to assisting others, and career prospects. On the other hand, female individuals primarily emphasize the aspiration to help people. Interestingly, a higher proportion of females exhibit a propensity towards altruistic motives, whereas a greater number of males are inclined towards considerations of financial stability [36].

Personality traits play a significant role in the realm of healthcare. Research findings indicate that health professionals commonly exhibit characteristics such as agreeableness, cooperativeness, and self-direction. Moreover, they tend to have low levels of neuroticism, implying that they are typically composed, stable individuals who excel in collaborative teamwork. Such qualities are vital in the intricate and socially demanding healthcare settings. Nevertheless, it's worth noting that there is some degree of variability in other personality traits among different health professional groups. Acknowledging the importance of non-cognitive traits is essential as they can provide insights into individual behavior and potentially predict the conduct of health professionals [37].

Teacher and parent support. In a qualitative investigation involving first- and second-year medical students in the UK, the study delved into the factors influencing students' motivation to pursue a medical education. The findings indicated that the presence of support and encouragement from parents positively influenced students' drive to apply to medical school. In contrast, the absence of support from teachers was associated with a dampening effect on their motivation [38].

Curriculum. The influence of curriculum design on student motivation is evident in the context of problem-based learning (PBL). This specific curriculum approach was found to stimulate students' intrinsic motivation, as they exhibited a genuine enthusiasm for learning. This motivation was attributed to the level of autonomy students had in directing their own learning process. In contrast, traditional curriculum structures tended to encourage students mainly to strive for high grades, indicating extrinsic motivation. Students in traditional programs often perceived a more controlling learning environment. Research conducted in Germany further unveiled that students exhibited increased levels of motivation when engaged in blended problem-based learning (PBL) as opposed to the traditional PBL approach. This observation was supported by a combination of quantitative and qualitative data. The integration of blended learning, which combines in-person classes with e-learning components, enhances student autonomy in their learning within a PBL curriculum [39].

5 Limitations

This passage highlights various considerations and limitations in a study related to academic motivation among medical students. Here are the key points mentioned:

Sample Representation: The data collected from a small population in different medical schools may not accurately represent all medical students. Differences between first-year and senior-year medical students could lead to variations in academic motivation responses, making it challenging to draw generalized conclusions.

Academic Achievement Assessment: The assessment of academic achievement relied primarily on high school GPA or course grades, which may not provide a comprehensive or precise evaluation of students' academic capabilities. Other factors influencing academic performance were not considered.

Unaccounted Factors: The analysis did not account for various potential factors influencing students' motivation, such as extracurricular activities, teaching methods, peer characteristics, and other relevant variables. This omission may have limited the study's ability to capture the complex interplay of these factors on motivation and academic performance.

Study Strengths: The study's strength lies in its comprehensive exploration of motivation predictors among medical students. It incorporates various variables, including demographics, mental health status, positive personality traits, and perceived social support, providing a more holistic understanding of motivation determinants.

Future Research: For future research, it is essential to delve deeper into the causal relationships among these variables, particularly the relationships between different types of academic motivation. A longitudinal study is suggested to track changes in motivation and the impact of predictors over an extended period, allowing for more conclusive insights into the dynamics of motivation among medical students.

Overall, this passage highlights the need for careful consideration of sample representation, assessment methods, and the inclusion of various relevant factors in academic motivation research among medical students. It also emphasizes the importance of long-term studies to gain a more comprehensive understanding of motivation dynamics in this context.

6 Conclusion

The research's conclusion underscores the significance of giving due attention to motivation in medical education, particularly in the context of Mongolian Traditional Medicine. The study found that intrinsic motivation, driven by students' own interests and internal factors, is associated with improved learning and better performance. To enhance intrinsic motivation, the study recommends several key strategies, including: Autonomy in Learning: Allowing students a degree of control and choice in their learning processes, fostering a sense of ownership and engagement. Feedback on Competence: Providing students with constructive feedback that reinforces their sense of competence and proficiency, which can boost their confidence and motivation. Emotional Support: Creating an emotionally supportive learning environment where students feel valued and encouraged by teachers and instructors.

7 Future perspectives

Encouraging autonomous motivation among medical students yields several advantages, including heightened professional satisfaction and a mitigated risk of stress and burnout. This transition can be facilitated by embedding the core values of the medical profession into the institutional culture of Traditional Mongolian medical universities. This integration encourages a transition from extrinsically driven goals (like career, status, and power) to more intrinsic goals centered on community service. Applying Self-Determination Theory in medical education can be a means to achieve the goal of nurturing intrinsically motivated Traditional Mongolian medical students who will eventually become qualified doctors. The recent support from the Mongolian government, such as increased budget allocations and higher reimbursement rates, reflects the preference for Traditional Mongolian Medicine among Mongolian citizens, particularly those in pastoral regions and individuals seeking treatment for musculoskeletal issues and injuries. TMM hospitals receive positive feedback, with patients having high expectations and positive perceptions of the health services provided. In addition to these positive developments, there is room for further improvement, particularly in terms of enhancing the human resources and research capacity of Traditional Mongolian Medicine. Expanding the exchange of information with developed countries where TMM is widely practiced can be highly beneficial. Such exchanges can provide valuable insights and experiences related to disease prevention methods, ultimately contributing to research and practice in TMM. When designing curricula for medical education, it is important to recognize that students' motivation can be enhanced by incorporating teaching methods such as Problem-Based Learning (PBL) and small group work. The creation of learning environments that facilitate teachers in promoting student autonomy, provide regular and constructive feedback to enhance students' self-perceived competence, and nurture a sense of connectedness through mentorship, positive role models, small group activities, and early patient interactions, can prove to be effective in fostering students' self-determined motivation. This, in turn, can lead to more engaged and successful medical students and professionals.

8 Appreciation

I would like to express my greatest gratitude to ChatGPT Artificial Intelligence (AI) for assisting in my literature review to improve the readability and language of the work. I have not used it to replace scientific insights, analyzing and interpreting data or drawing scientific conclusions.

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