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Examining Mediating Role of Self Efficacy among Mobile Learning, Curriculum and Preventive Health Behavior

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Preventive Health Behavior is vital for medical students to reduce health risk and improve their well-being. It is vital to explore factors that can improve preventive health behavior among medical students. Thus, this research examined effect of mobile learning, psychological well-being, and curriculum on preventive health behavior through mediation of self-efficacy. Cross-sectional research design was adopted in this study. Data were collected from medical students using simple random sampling. The usable response rate was 56.28%, which was used for the analysis. This study employed the SEM approach and Smart PLS 3 for analysis. Results revealed that mobile learning has a positive effect on self-efficacy. Likewise, the psychological well-being of students also has a positive effect on self-efficacy. Furthermore, preventive health behavior was influenced by self-efficacy. The mediating role of self-efficacy was statistically significant between mobile learning and preventive health behavior, and psychological well-being and preventive health behavior. However, effect of curriculum on self-efficacy was found insignificant. Similarly, the mediation of self-efficacy between curriculum and preventive health behavior was also insignificant. This research fills the gap in limited studies that have used the technological variable (mobile learning) to assess the health condition of medical students. Mediation of self-efficacy is also rare in past literature, which is examined in this study.

Keywords: Preventive health behavior, Self-efficacy, Psychological well-being,

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Mobile learning, Curriculum.

Introduction

Medical students are future medical specialists; therefore, preventive health behavior adoption by students is critical for their own well-being. Furthermore, preventive health behavior can influence their future clinical practices. The healthy lifestyle behavior of students is significantly linked to preventive counselling, impacting their overall lifestyle (Ip et al., 2024). Despite the importance of preventive health behavior, inconsistency is observed among medical students, as they do not adopt preventive practices in the form of daily exercise (Kong et al., 2024). The main focus of preventive health behavior education is to emphasize the importance of well-being. Preventive health behavior also equips students with key tools needed to thrive in personal and professional life. The chances of illness and disease are reduced because of preventive actions. The impact of behavioral performance will be determined by the cause-and-effect relationship between health problems and health behaviors. Therefore, medical students should give importance to the factor of preventive health behavior for two reasons: first, for their own health, and second, because they will be perceived as role models for patients to advocate preventive behavior (Wilf-Miron et al., 2021).

The engagement of medical students with patients is determined by self-efficacy. It also influences their behavior and the way these students motivate themselves. Self-efficacy is important to understanding the skills of students and how these skills can be used to gain knowledge (Basileo et al., 2024). The emphasis of self-efficacy is on the actions, thoughts, and feelings of medical students. Self-efficacy can play a very important role in improving performance, goal-setting approach, student behavior, and motivation level among medical students. The self-efficacy of students also plays a vital role in influencing their willingness to continue education, intention to gain skills, and overall attitude and approach toward education as well (Zhao & Ma, 2025). Additionally, self-efficacy also leads to improved health as it is very important for the students to maintain healthy lifestyle for their success in professional life.

This is the digital age where students prefer mobile learning through various digital devices, including mobile phones, which are portable tools playing a very important role in helping students stay connected with their social circle, including friends and family members (Adeyemi, 2025). Presently, mobile phones are available in the form of smartphones that not only help in communication but also assist students in playing games, map navigation, social networking, emails, internet browsing, and educational purposes, i.e., mobile learning. The availability of smartphones has made

it easy for students to move toward mobile learning, which is very flexible and convenient (Wang et al., 2023). In medical education, mobile learning has emerged as a vital approach offering learner-centered and flexible opportunities to access medical knowledge beyond the boundaries of the classroom. Mobile learning improves the engagement and motivation of students. It also helps students develop integration between clinical practices and theoretical knowledge, improving the overall learning process. Mobile learning enables medical students to access educational resources, clinical guidelines, and updated medical information, enhancing continuous learning among students. (Kalantarion et al., 2024). Furthermore, mobile learning also helps students in education, supports interactive learning environments, and encourages collaboration.

There are several factors that lead to the quality delivery of education. These factors include reforms in education and the quality of the curriculum. The curriculum development of medical students depends on healthcare standards, patients' needs, and guidelines provided by the regulators (Soomro et al., 2022). It is very important that the curriculum changes with the passage of time to meet the needs of the present era. The curriculum plays a very important role in shaping the vision of educational institutions to provide skills and education to students. (Hugmeyer-Walsh, 2025). The medical students who get education on the basis of updated curriculum can better handle the patients. These medical students are equipped with skills to manage the crisis situation. Therefore, it is important that curriculum of the medical students is important for their career and professional growth (Harden et al., 2024).

Mental health incorporates social functioning, and overall psychological well-being of the medical student. On the other hand, mental illness refers to a certain disorder in the mental ability of the student (Gautam et al., 2024). In a broader sense, mental ability is the capacity of students to handle pressure in daily life. The factor of psychological well-being is important for academic success and the overall health of medical students (Hu et al., 2024). Medical students are mostly exposed to emotional exhaustion, anxiety, and stress because of the demanding nature of education, which can negatively affect clinical performance, empathy, and learning. Students with a higher level of psychological well-being show a positive attitude and better self-efficacy toward education and care for patients. Furthermore, a higher level of psychological well-being also enhances professional growth, resilience, and motivation (Jeyapalan & Blair, 2024). Whereas, psychological well-being has negative effect on stress and burnout. So, this study explored the effect of psychological well-being, curriculum, mobile learning and self-efficacy on

preventive health behavior among medical students.

Literature Review

Self-Efficacy (SE) and Preventive Health Behavior (PHB)

Literature has discussed health behavior as the actions that has the ability to impact the health of humans. The actions of humans are termed as behavior leading towards the healthy lifestyle based on maintaining diet and exercise. This behavior also includes risk taking and avoiding behavior such as drugs and alcohol (Ramos-Vera et al., 2024). The health behavior of a person is determined by the health beliefs of the individual that play very important role in diagnosis of disease. Preventive health behavior is discussed as activity performed by the individual who is perceived to be healthy to detect and prevent illness (Agesin, 2022).

Literature has characterized self-efficacy (SE) as the assessment of individuals regarding their capacity to carry out and strategize behavior. On the other hand, SE discuss the belief of the individual regarding their ability to carry out and organize the actions that are required to handle difficult situations. These actions are also vital to be successful in situations that need extra effort. The factor of SE is mainly dependent upon the factors of feeling, behavior and thinking of the individual (Susilanas et al., 2018). SE has major contribution towards the perception and attitude of the individual to adopt certain behaviour. It has very important role in the adoption of IT related behaviours. SE also has central role The engagement of mobile health of the users of smartphone applications. A number of studies in past has examined the impact of SE on the behaviour of students. Past studies has revealed positive association between SE and changing the behaviour of students (Islam et al., 2024).

SE is discussed as key factor of the student's behaviour. But there are very few studies that has examined the role of SE in educational settings. In the context of health sector, most of the studies has discussed the role of SE to minimise the impact of different diseases (Yıldırım & Güler, 2022). They have reported that SE played the role of facilitator to prevent different diseases. It also played a very important role to shape behaviour of individuals that were linked to perceived risks and problems. Studies has found that SE shape confidence among the individuals. It is also a key factor to bring behavioural change and also minimise the chances of problems related to health issues among the students. There exists direct relationship between SE and health behaviour as mentioned in the study of Lange and Kayser (2022). Researchers believe that SE is one of the important factors in order to generate positive health behaviour among the individuals. The SE and self-confidence also play significant role against preventive behavior. In other words, SE has positive effect on PHB

(Kusol & Kaewpawong, 2023). So, we hypothesise that

H1. SE has positive effect on PHB.

Mobile Learning and Self-Efficacy (SE)

Literature has referred mobile learning as one of the most emerging research areas. (Ahmed et al., 2021) discussed M-learning as learning that take place at any moving place. Other authors like (Liu, 2020) explained it as it as digital support related to productive and collaborative learning activities remotely offering different contexts for acacdemics to perform. To impact the attention of the students, the mobile application developers has introduced virtual environments that plays very important role in their learning process. Scholars has discussed several different themes that are provided by mobile learning to the students. These themes include ability of flexible learning and student-centred environment that supports to improve the performance, helps in skill development and construction of knowledge (Pedraja-Rejas et al., 2024).

Education section has widely used mobile learning for the learning of the students. A number of past studies have revealed positive effect of mobile devices on education. Many different features including accessibility, personalization, interactivity, mobility, self-control and ubiquity are integrated in the presence of mobile learning. The usage of mobile learning is key factor of system known as "learning on the go" in the context of education system (Togaibayeva et al., 2022).

There exists linkage among SE and mobile learning in the context of academics. Therefore, the relationship between SE and mobile learning is given a lot of importance in the field of education (Mahato et al., 2023). Scholars reported that students develop SE when they are involved in mobile related activities. They enjoy the activities on the mobile phones and develop creativity (Chung & Lai, 2019). Researchers adopted experiment in which they examined the effect of digital learning on SE and reported that e-mobile learning has affected the SE of the students. Similar results were reported by the study of Kim and Suh (2018) who showed improved SE among students who use mobile applications for learning.

H2. Mobile learning has positive effect on self-efficacy.

Curriculum and Self-Efficacy (SE)

Literature has discussed curricula as the road map that is specially designed in order to guide the teachers through the process of teaching and learning. It also determines the proper time and way to perform academic tasks (Mahato et al., 2023). The learning efficiency of the students is significantly affected by the well-designed curriculum. In other words, there is a positive correlation between well designed curricula and academic achievement. In the context of education, planned activities are

implemented by the teachers during the process of learning and teaching. In order to deliver curricula, teachers have very significant responsibilities. The teaching of teachers and students is both strengthened in the case of well-designed educative curriculum (Pountney & Swift, 2024). Studies mentioned that curriculum is interactive system of learning and instructions with certain resources, measurement, strategies, content and goals. The basic objective of designing a curriculum is successful development and transfer of attitudes, skills, and knowledge (Pountney & Swift, 2024). There are two different parameters of a curriculum including meeting minimum requirement to prepare the students and it is a platform to learn.

Development of curriculum is a dynamic and ongoing process having purpose on the success of students. The scope of curriculum development is broad enough in order to accommodate progress in technology and basic science including the environment, politics and culture (Brown & Prendergast, 2020). Formal education is one of the important factor of education. Students get this education from the national curriculum. The study conducted by Sriyakul and Jermsittiparsert (2021) revealed that curriculum developed by the institute effected SE of the student. This curriculum also provided the educational plan that gives control and SE among the students. The learning of the students will be negatively effected in the absence of curriculum, that later impact SE of students as well (DeCoito & Estaiteyeh, 2022).

The curriculum that is designed to improve SE of the students can be very effective, leading to academic success of the students (Edalatifard & Prieto, 2016). Teachers having high SE try hard to change the curriculum of the student's as compared to those having low SE. The study conducted by Kubrusly et al. (2024) showed students having strong curriculum also have strong SE.

H3. Curriculum has positive effect on SE.

Psychological well-being (PWB) and Self-Efficacy

In literature PWB is referred as an individual's feeling of ability of personal growth, satisfaction towards life and feeling of happiness (Dhanabhakyam & Sarath, 2023). It is one of the important aspect of individuals mental health and is linked with life satisfaction and higher happiness. Authors mentioned that it is negatively linked to depression ad stress. Psychological wellbeing is based on one's ability to see and self confidence of an individual and accept one's weaknesses and strengths. Psychological wellbeing develop positive relationships with others, act on basic principles and pursue desire that provide meaning to life (Kubzansky et al., 2023).

The aspect of psychological wellbeing is based on different traits of one's emotional and mental health including self acceptance, positive self esteem, personal development and personal growth (Logvin, 2025). The factor of psychological wellbeing develops feeling capable to manage challenges of life, sense of purpose and satisfying relationships. This factor is based on multiple dimensions that deals with fulfilment in life, contentment, sense of happiness, and absence of mental ailment (Ruggeri et al., 2020). Psychological wellbeing is important aspect of happiness and overall health. It reflects to the person's state of mind where a person experience purpose in life, feeling of meaning, positive psychological functioning, positive emotions, individuals' positive emotions (Dhanabhakyam & Sarath, 2023).

The SE of the individual is positively affected by PWB by improving ability to deal with challenges, motivation and confidence. When a person goes through higher well-being in the form of life satisfaction, emotional stability and happiness, it is more likely that they believe in their capabilities to overcome difficulties and goals. Positive emotions of the individual reduce stress and promote resilience that further improve sense of competence and control (Gautam et al., 2024). A person goes through anxiety and depression reflecting poor PWB can have negative effect on confidence. It leads to reduced SE and self-doubt (Rippon et al., 2024). Scholars discussed the relationship between PWB and SE. The study by Sabouripour et al. (2021) and Sagone et al. (2018) determined that PWB has positive significant effect on SE. Similarly, the study of Yiming et al. (2025) shows the positive effect of PWB on SE. So, it's been assumed that

H4. PWB has positive effect on SE.

Mediating Role of Self Efficacy (SE)

The structure and design of medical curriculum play a very important role in shaping motivation, attitude and knowledge towards PHB. Students normally get involve in preventive practices such as exercises and using balanced diet because of curriculum they study. Research has indicated that problem based and interactive curriculum improves the confidence among students. It also develops capability to apply knowledge in their real life (Rehman et al., 2024). Such curriculum design helps students to promote self-regulation which is important source of SE (Kubrusly et al., 2024; Wijnia et al., 2024).

Past studies have revealed that SE is one of the important predictors of PHB promoting engagement in physical activity, dietary control, and vaccination adherence (Mohsin et al., 2023). It is hence proven that higher SE shows stronger engagement towards preventive health actions. Thus,

curriculum can affect PHB through SE. The study by Kubrusly et al. (2024) mentioned significant effect of curriculum on SE. Likewise, the research by Kusol and Kaewpawong (2023) also demonstrated significant relationship among SE and preventive health behaviours. Ph.D. et al. (2020) discussed the mediating role of SE in their empirical study. So, it is plausible that

H5. SE mediates between currcilum and PHB

In the education sector, mobile learning is being used to deliver education just in time. Moreover, it can improve real-world practice, skills and knowledge of the student's manifold. Past studies shows that students tend to adopt preventive measures because of mobile learning interventions (Ghozali et al., 2022). Furthermore, health related behavior among students is improved who are exposed to mobile learning programs.

As a result, mobile learning develop mastery through suited feedback, repeated practice and micro-learning process that strengthen SE practices among students. A number of past studies have shows that SE is important to alter the behavior among individuals (Bao et al., 2022). On the other hand, studies also develop linkage between SE and preventive health behaviours, indicating higher SE has positive effect on PHB (Mahato et al., 2023). Keeping in view this chain, mobile learning has significant positive effect on SE (Kim & Suh, 2018), and later SE has positive effect on PHB (Sriyakul & Jermsittiparsert, 2021). It leads to assumption that

H6. SE mediates between mobile learning and PHB.

PWB is important factor that develop capacity and motivation within an individual to engage in actions that promote healthy lifestyle. Students experiencing higher PWB shows life satisfaction, positive affect and emotional balance. Such individuals also display effective coping mechanism and proactive health behavior (Dr & Shukla, 2023). On the other hand, individual with poor PWB show poor mental health, anxiety and stress that later has negative effect on preventive behaviors such as regular health checkups, exercise and healthy eating (Caamaño-Navarrete et al., 2024).

SE plays the role to link well-being and behavioral outcomes. According to past studies, individuals who have higher SE shows more confident to manage their health and have strength to control barriers that can affect preventive actions. Studies have revealed that SE is positively effected by PWB Bagheri et al. (2022) that in turn develop self-care and preventive behavior among students. Students with greater self belief and emotional stability shows strong commitment to follow preventive measures and healthy routine when they are going through academic stress. So, SE develop bridge between PWB and PHB. Research by Luo et al. (2023) discussed mediating effect of SE. It leads to develop hypothesis that:

H7. SE mediates between PWB and PHB.

Based on Literature review, framework of the study is proposed in Figure 1 showing relationship among ML, CUR, PWB, SE and PHB.

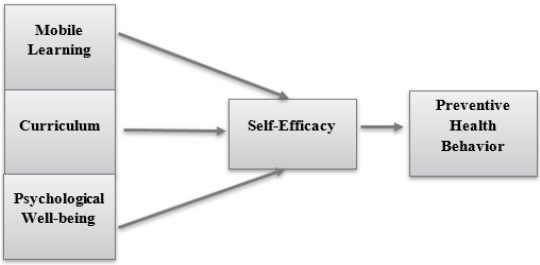

Figure 1: Framework

Methodology

This research used quantitative research methodology to explore relationship among proposed variables. The respondents of the study are students studying of medical colleges. Questionnaire was developed to get response from the respondents. The developed questionnaire was in 7-point Likert scale format. The scale of questionnaire was adapted from literature review. This study adopted items of preventive health behavior from Levy and Myers (2004), scale of SE was adapted from van Zyl et al. (2022); items of curriculum were adapted from Khan et al. (2021); scale of PWB was adapted from Ling et al. (2022); and same of mobile learning was adapted from Alharbi and Drew (2014). The questionnaire was divided in two sections. Th first one was linked to descriptive statistics of the respondents. Whereas the second one was related to relationship among proposed variables.

Simple random sampling was adopted for data collection. Questionnaire was distributed among 350 students. We received back 197 usable responses from the students. Thus, the response rate of the study was 56.28%. the collected data was examined using SEM as technique and smart PLS as tool to identify the relationship among the variables and answer the research hypothesis. This software was selected because it is proposed to be one of most suitable tools when the framework is complex. The framework (Figure 1) has three independent variables, one dependent variable and one mediator. Therefore, this research used Smart PLS 3 as tool to examine the collected data. Before starting the analysis, the collected data screened. Missing data was removed, and remaining data was used for further analysis.

Results

According to Hair (2010), measurement model (Figure 2) starts with

convergent validity explores the level to which a certain variable has share variance with other variables. To fulfil the requirements of convergent validity of the reflective model, AVE, outer loading, reliability and discriminant validity of the model must be validated (Table 1).

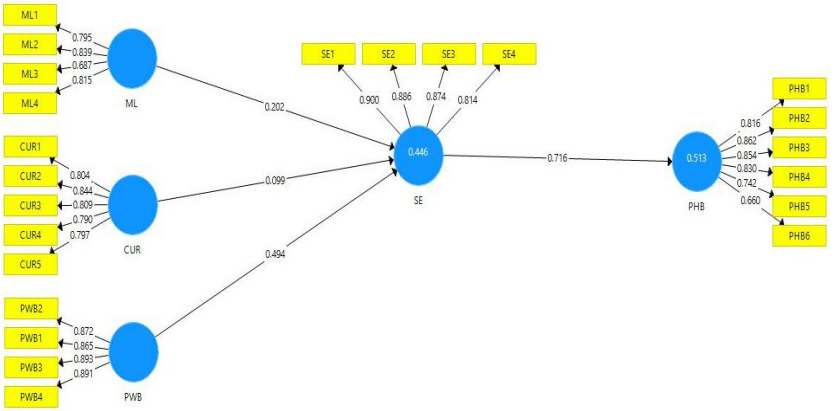

Figure 2: Measurement Model

Table 1

CR, AVE and α

	A	CR	AVE
CUR	0.868	0.904	0.654
ML	0.797	0.865	0.618
PHB	0.883	0.912	0.635
PWB	0.903	0.932	0.775
SE	0.892	0.925	0.756

Analysis began by exploring Cronbach Alpha and composite reliability analysis. Hair Jr et al. (2017) mentioned that the benchmark value of CR and Cronbach Alpha is more than or equal to 0.70. Table 1 shows that all values of this criterion are more than 0.70. Further, this research examined the factor loading of the data. Byrne (2013) mentioned the required figure for items to be carried forward for further analysis is 0.60. As per statistics in table 2 and figure 2, all values have factor loading of more than 0.60.

Table 2

Factor Loading

	CUR	ML	PHB	PWB	SE
CUR1	0.804				
CUR2	0.844				
CUR3	0.809				
CUR4	0.790				
CUR5	0.797				
ML1		0.795			

Table 2 (cont...)

Factor Loading

	CUR	ML	PHB	PWB	SE
ML2		0.839			
ML3		0.687			
ML4		0.815			
PHB1			0.816		
PHB2			0.862		
PHB3			0.854		
PHB4			0.830		
PHB5			0.742		
PHB6			0.660		
PWB1				0.865	
PWB2				0.872	
PWB3				0.893	
PWB4				0.891	
SE1					0.900
SE2					0.886
SE3					0.874
SE4					0.814

Additionally, Fornell and Larker recommended to examine AVE of the data for which 0.50 must be achieved. Table 3 of the present research shows that the criteria is meet as values of AVE in table 3 are more than 0.50. At this stage, it can sum up that requirement of convergent validity is fulfilled.

Table 3

Convergent validity

	CUR	ML	PHB	PWB	SE
CUR	0.809				
ML	0.472	0.786			
PHB	0.424	0.405	0.797		
PWB	0.406	0.466	0.505	0.880	
SE	0.395	0.479	0.716	0.629	0.869

After confirming convergent validity, this research examined the discriminant validity by using Fornell and Larcker (1981) and HTMT approach. Starting with Fornell and Larker approach, criteria is to have highest value at the diagonal of the matrix. Table 3 of the study shows all values at the diagonal are more than the remaining values, fulfilling the requirements.

Further, using HTMT approach, the values of the matrix must be less than 0.85 as recommended by Henseler et al. (2015). As achieved in Table 4. At this stage, measurement model is stablished, leading to structural model analysis.

Table 4

HTMT

	CUR	ML	PHB	PWB	SE
CUR					
ML	0.550				
PHB	0.481	0.465			
PWB	0.447	0.550	0.562		
SE	0.445	0.548	0.806	0.695	

While exploring R square, table 5 of the study shows that Self efficacy is affected 44.6% and PHB is impacted 51.3% through the proposed independent variables of the study.

Table 5

R square

	R Square
PHB	0.513
SE	0.446

The structural model analysis examines the effect of independent variables on the outcome variables. The significance of the variable was determined on the basis of t value and P values. Moreover, Beta value determined the nature of the relationship between variables.

Table 6

Direct Relationships

	β	SD	T Stats	P Stats	Decision
CUR -> SE	0.099	0.071	1.389	0.083	Non- Significant
ML -> SE	0.202	0.076	2.651	0.004	Significant
PWB -> SE	0.494	0.095	5.218	0.000	Significant
SE -> PHB	0.716	0.046	15.422	0.000	Significant

The results are given in table 6 and figure 3 showing that ML has significant effect on SE (β=0.202, t=2.651). Similarly, PWB has positive significant effect on SE, supporting hypothesis (β=0.202, t=5.218), and SE has significant positive effect on PHB accepting hypothesis (β=0.716, t=15.422). Whereas statistical figures show that CUR have insignificant effect on SE as t is less than the benchmark figure (t=1.389), rejecting the proposed hypothesis.

Table 7

Mediating Results

	β	SD	T Stats	P stats	Decision
CUR -> SE -> PHB	0.071	0.051	1.379	0.084	Not significant
PWB -> SE -> PHB	0.354	0.072	4.945	0.000	Significant
ML -> SE -> PHB	0.145	0.057	2.558	0.005	Significant

Table 7 of the study shows the mediating effect SE between proposed IVs and DV. The results shows that SE mediates between PEB and PHB

(t=4.945), and between ML and PHB (t=2.558). Whereas its mediating role between CUR and PHB is non-significant (t=1.379).

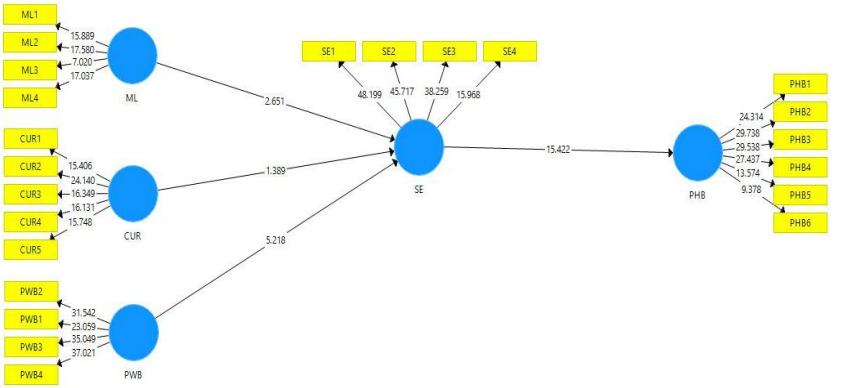

Figure 3: Structural Model

The analysis of smart PLS end with blind folding technique. According to Hair Jr et al., (2017), value of Q square must be non-zero. Table 8 and figure 4 states that Q square values of this study are non-zero.

Table 8

Q square

	Q^2
PHB	0.319
SE	0.332

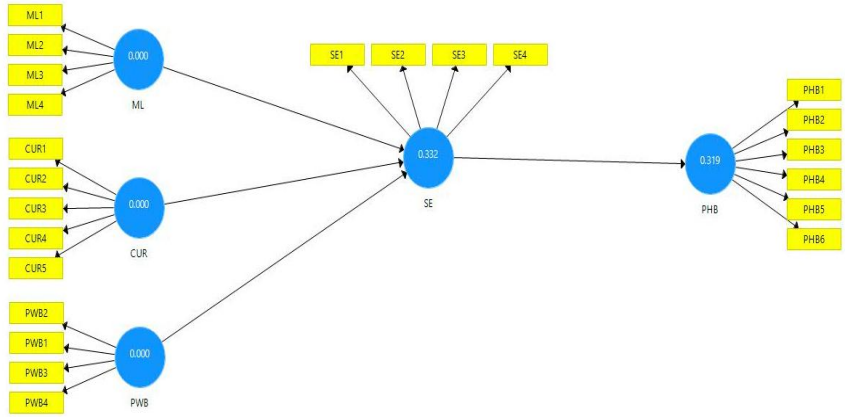

Figure 4: Q square

Discussion

This research explored relationship between curriculum, psychological well-being, and mobile learning on self-efficacy and preventive health

behavior. Smart PLS 3 was used for the analysis of data gathered from medical students. The results revealed that self-efficacy has a positive association with preventive health behavior. Results show that students with higher confidence (self-efficacy) have the ability to manage issues related to their health. Therefore, they adopt preventive health behavior in their personal and professional lives. Medical students are better able to engage in preventive health behaviors, such as taking daily physical exercise and maintaining a balanced diet, as they possess high self-efficacy. Students with high self-efficacy also avoid risk behaviors by refraining from the consumption of alcohol and tobacco. The belief of such students in controlling their health reflects their motivation to act responsibly and consistently toward preventive health behavior.

Various practices are involved in preventive health behavior, including undergoing physical examinations at least once a year, maintaining a low-fat diet, and keeping a balanced diet to sustain a healthy body weight. Medical students with a high level of self-efficacy are involved in such practices as they trust their ability to regulate, monitor, and plan lifestyle choices. Likewise, preventive health behavior in the form of following medical guidelines and using seatbelts also reflects students' perception of maintaining and protecting their well-being. The linkage between self-efficacy and preventive health behavior becomes more critical for medical students. As future healthcare professionals, these students should possess knowledge of health. Moreover, they should serve as role models for preventive health behavior. The academic exposure of these students improves their awareness of preventive health behavior, but self-efficacy converts this awareness into consistent actions. Medical students with higher self-efficacy show stronger commitment to overcoming barriers that affect preventive health behaviors. Thus, the maintenance and adoption of preventive health behavior are significantly influenced by the development of self-efficacy. It promotes the professional and personal well-being of these students toward healthy lifestyles. The findings of this study are in line with the findings Kusol and Kaewpawong (2023) in past studies.

The result shows psychological wellbeing has positive effect on self-efficacy, in consistent with the results of Yiming et al. (2025). The findings demosntrate that medical students with a positive state of mind base their approach on a hopeful outlook, life satisfaction, and optimism. Such students are more confident in their problem-solving and academic capabilities. Medical students with higher psychological well-being perceive that their future will be bright. These students expect good things to happen in their lives, demonstrating greater confidence, resilience, and motivation when facing academic challenges. In the presence of such psychological well-being, a positive mindset is cultivated that enhances

the sense of self-belief, competence, and control among students. When psychological well-being is high among students, stronger self-efficacy develops. Students are better able to approach academic difficulties with assurance and determination in their academic abilities.

Additionally, the psychological well-being of students is reflected in finding happiness and enjoying life in daily activities, strengthening self-efficacy through the ability to handle academic stress. A sense of fun and enjoyment reduces emotional exhaustion and anxiety, allowing students to handle demanding tasks with confidence and calmness. Psychological well-being is very important to sustain and build self-efficacy among medical students, as it holds great importance in the context of medical education. Medical students who exhibit stronger well-being have the ability to maintain focus and regulate emotions, helping them manage stress. Thus, the significant relationship among these factors leads to improved academic performance, emotional balance, and learning outcomes.

The results also confirms that mobile learning has positive impact on self-efficacy. Same results were presented in the study of Mahato et al. (2023) in literature. The results highlight the importance of online learning in the present digital era for medical students. Mobile learning enables students to retrieve study materials in a flexible manner. It improves their confidence to manage the demands of learning effectively. The results show that mobile learning is useful for students and leads to the development of a stronger belief in their ability to retain and understand medical concepts. As a result of this ability, students can achieve a higher level of self-efficacy, as they have more control over their academic progress through the personalized and flexible features of mobile learning.

Additionally, the efficiency of students is achieved through mobile learning, as it allows them to complete assigned tasks effectively and quickly. They have the ability to take quizzes, review clinical cases, and watch lectures using their mobile devices. It develops a sense of achievement among students, strengthening self-efficacy. Students can monitor their learning process on a regular basis through mobile learning. It reinforces their ability to handle academic challenges through effort and persistence. Likewise, students become convinced through mobile learning, which empowers them to take full responsibility for their learning, thereby enhancing academic self-efficacy.

Mobile learning serves as a very powerful tool to improve the learning of medical students, as it enables them to manage workload pressures and time effectively by using mobile devices. Students can use these devices to perform their academic tasks independently and efficiently. Therefore, mobile learning develops a sense of academic control and mastery, which

is a key component of self-efficacy. Thus, the integration of mobile learning in medical education enhances the academic performance of students, helping them handle pressure with confidence.

The findings revealed that the curriculum of medical students does not significantly affect self-efficacy. This finding indicates that while the curriculum is relevant to learning outcomes such as developing research-oriented, professional, and competent doctors it does not build confidence in their academic abilities. Although the medical curriculum integrates diverse content and emphasizes various assessment tools, these elements alone are insufficient to develop self-efficacy, as they lack personal mastery experiences and active engagement.

The self-efficacy of medical students, reflected in their beliefs about managing academic performance and exam-related challenges, primarily depends on their experiences of success rather than on the curriculum designed by academic experts. Although faculty members regularly provide feedback and ensure alignment with course objectives, students still lack academic confidence and control because they do not perceive a direct connection between their learning progress and academic mastery. Thus, the lack of opportunities for practical application and experiential learning explains the insignificant effect of the curriculum on self-efficacy. These findings are in contrast to the results of Kubrusly et al. (2024) in past.

Statistical results signify the mediation of self-efficacy on the path of psychological well-being and PHB. These results are similar to the results mentioned by the studies of Luo et al. (2023) in past. These findings shed light on the importance of confidence and self-belief (self-efficacy) as a bridge between psychological well-being and positive health-related actions of students. This result shows that a higher level of psychological well-being increases the probability of engaging students in activities to promote health. It is because students believe in their ability to do it effectively. When medical students maintain a positive emotional state, enjoy life, and have a positive perception regarding their future, they can easily manage their health-related issues. Such students also attend their regular checkups, engage in physical activity, and maintain a balanced diet. Therefore, motivation and emotional stability are fostered through high psychological well-being that enhances self-efficacy, translating into preventive health behavior.

The findings also assured mediating effect of self-efficacy between mobile learning and preventive health behaviors. The self-efficacy of students is higher who perceive mobile learning as convenient, efficient, and useful. It is because mobile learning empowers them to control decision-making and the learning process. Students gain easy access to self-monitoring tools and health-related knowledge using mobile learning.

It improves their ability to move towards preventive health behavior. As a result of this enhanced self-efficacy, students get involved in healthy activities on a regular basis. Thus, mobile learning promotes preventive health behaviors indirectly through self-efficacy.

Limitations and Directions

This research has a few limitations similar to many other studies. This research used a quantitative research methodology for data collection. Future studies may use a mixed methodology for a more in-depth response from the respondents. Moreover, this study gathered data from medical students in order to assess preventive health behavior factors. It is proposed to collect data from other fields of students in order to measure the impact of different factors on their health. Additionally, this study used Smart PLS 3 for the analysis of collected data, whereas the latest version of Smart PLS is available in the market in the form of Smart PLS 4. It is recommended to use Smart PLS 4 for the analysis in upcoming studies.

This study analyzed discriminant validity at the measurement model stage of analysis. It is proposed to include cross-loading as well for the analysis of discriminant validity. In this study, self-efficacy is treated as a mediating variable. Future studies are recommended to use it as a moderator in their frameworks. Also, R square values of this study are around 50%, showing there is a need for more and different exogenous variables to improve R square, so more variables should be added.

Theoretical and Managerial Implications

This research adds to the theoretical body of knowledge by studying self-efficacy, preventive health behavior, PWB, curriculum, and MH in a single framework. On most past occasions, these variables were rarely studied together. This research also bridges the gap in limited research analyzing the impact of mobile devices on the preventive health behavior of medical students. This research also shows an insignificant positive effect of curriculum on self-efficacy. It reflects different opinions of medical students that add to the development of self-efficacy. In terms of managerial contribution, this research highlights the importance of mobile learning and psychological well-being for students to indulge them toward preventive actions. It also highlights the importance of parents' involvement in the healthy life of their children. Policymakers of the health sector can use these findings to develop strategies for the health management of medical students.

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