

Medical Doctor and Dental Students' Views on Enrolling in Medical Doctor and Dentistry Majors for Their Higher Education Degrees in Cambodia: A Survey Study

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ABSTRACT

The purpose of this study is to explore the views of students taking medical doctor (MD) and dentistry (DD) majors on why they were learning what they were learning and to contextualize how these views would impact their studies. A mixed-methods approach was used in this study. An anonymous Google form was utilized to get quantitative data, while FGDs were used to gather qualitative data. The qualitative data were thematically evaluated, and the quantitative data were analyzed using SPSS. The findings demonstrated the factors that motivated them to enroll in the MD and DD programs and the reasons behind this enrollment. These factors include their interest in future career perspectives, academic performance, life experience, role models, and family direction. However, the results also indicated that university profiles impacted students' decisions about choosing a health science university for these MD and DD majors, which require a long journey to graduate.

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1. INTRODUCTION

The university is key to building career pathways and instilling students' career values. It is, hence, vital to understand the reasons behind students' choices of tertiary majors or programs of study. In particular, why students enroll in the majors of medical doctors (MD) and dentistry (DD) has gained much attention. It is evident that it takes MD students approximately eight years and DD students seven years to complete their programs of study or to graduate with an MD or DD degree. This is not to mention that it takes MD students another three years to obtain a specialized MD qualification. It is then interesting to learn how the students of DD and MD make continued commitments and efforts and show resilience to walk along the journeys until graduation.

Very few studies on why students are taking the MD and DD programs have been undertaken in Southeast Asia, particularly Cambodia. This study, therefore, aimed to discover the contributing factors behind this. Understanding why the MD and DD students are learning what they are learning is crucial in contributing to Cambodia's public healthcare and health economy, given that health is considered a developmental priority. At the same time, much effort has been put into bringing the most reliable healthcare systems to the SEA regions, thus ensuring the well-being of every Khmer [1]. Awareness of these contributing factors also enables us to gain insight into why Cambodia's public health services have not been widely delivered and used by its citizens [1] while simultaneously because human resource development is key to improving the healthcare sector [2]. This study, therefore, came into existence and looked further into why the MD and DD students took the MD and DD programs, taking into account their personal experiences. The study attempted to answer the question: What factors impacted the MD and DD students' choices of their majors?

Theoretical Perspective

Higher education plays a primary role in instilling essential skills and qualifications for personal and professional development and global awareness. Realizing why university students are doing what they are doing is crucial. Particularly, why students are taking programs for their studies has gained much attention from researchers. It is then more contextualized to get to know why MD and DD students were taking the MD and DD majors, given that developing human resources in health sciences underpins the improvement of healthcare in Cambodia [2]. Understanding why the MD and DD students were taking the MD and DD majors informs healthcare professionals, the Ministry of Health (MoH), health policymakers, and other stakeholders about the driving force and motivations of the undergraduate students participants for becoming a part of the healthcare sector. These people will, therefore, be able to make the informed decisions necessary for improving the country's healthcare and contributing to the country's healthcare development. This could address the need to recruit more qualified healthcare professionals [3], [4].

Why MD and DD Majors?

Studies discovered factors contributing to why MD and DD students took medical doctor and dentistry degrees, respectively. First and foremost, families' influence has deepened in students' decision-making on the choices of MD and DD [3], [5], [6]. From a cultural perspective, Cambodian parents play a fundamental role in shaping their kids' career goals, families, and studies. Some parents even choose universities for their children. In addition to this truth, most Cambodian parents and guardians want their children to follow in their footsteps [7], [8]. These parents may own a health center/clinic or health-related business and thus want their kids to carry on this legacy. Therefore, they prefer that their kids take the majors they took or select a major required by their businesses. Similarly, some parents may want their kids to pursue careers or positions. Consequently, parents need to influence their kids' choices of university majors.

Students may choose the MD and DD majors because of their passion, personal commitment, and humanity-related causes. Personal drive and humanity are the reasons why the MD and DD students, and other health science students, were studying what they were studying [3], [4], [9]–[14]. Some wish to help people, while others strive to contribute to providing quality health services. Quality healthcare and well-being are discussed in studies carried out by Wüst and Leko Šimić [5], Nyamwange [15], and Al-Faris et al. [16]. Families also play a crucial role in undergraduate students' considerations in taking medical programs [17].

On top of these contributing factors, getting admitted to the MD and DD programs requires academic merit at upper-secondary school and passing scores in the National Entrance Examination (NEE) [18], [19]. In addition to these prerequisites, success in these two programs requires continued persistence, effort, and commitment, given that it takes 8 and 7 years for MD and DD students to complete the programs. It is also interesting to note that it would take MD students another three years to gain a specialized MD title.

2. METHOD

2.1. Research design

This is a mixed-methods study: a qualitative and quantitative study to explore MD and DD students' perceptions of considering these majors of study as their career choice for their higher education degree.

2.2. Research instruments and participants

The study was conducted at six health science universities, including the University of Puthisastra, University of Health Science, Chenla University, International University, Norton University, and Health Science Institute of RCAF, located in Phnom Penh, Cambodia. The quantitative data was drawn from a survey questionnaire adapted from Spearman et al. [20], whereas the qualitative data was generated from the FGD protocol developed by the researchers. This FGD protocol was designed after the researchers consulted a wide range of literature [4], [7]–[10], [21], [22].

The questionnaire consisted of two sections. The first section discussed the respondents' demographic information, such as gender, group age, students' background, and academic major. The second section aimed to determine students' opinions/ factors encouraging them to enroll in health science programs. The focus group discussions (FGD) were used to get more in-depth information about students' perceptions. Each participant took around 15 minutes to complete the online questionnaire (in a Google form format, with a blocked IP address). The participants who completed the survey and agreed to be contacted for the FGD were grouped into 3 to 6 people. Each FGD took up to 60 minutes while running notes were taken during the discussions. An audio recording (via phone) was also done.

2.3. Data collection and analysis

After the research proposal was approved by the University of Puthisastra Research Committee (UPRC), the questionnaire was sent to the targeted students at those six

universities. The online questionnaire consisted of information about the aims of the study. The data were collected using purposive sampling to meet the study's objectives.

This study was conducted in two stages: the first was a quantitative survey, and the second was a qualitative study by FGD. Quantitative survey data were analyzed using SPSS. The qualitative data were analyzed thematically.

2.4. Ethical considerations

According to the study's ethical standards, the data must be kept confidential and utilized solely for the study, and their names were not needed. The data will be destroyed five years after the completion of the study. In short, the ethical issues in this study followed the four standards of ethics described by Goldblatt et al. [23], which consist of (1) avoiding harm to participants, (2) ensuring that participants' consent is provided, (3) respecting participants' privacy, and (4) avoiding disappointment. Participants can withdraw if they feel uncomfortable.

3. RESULTS

The survey was sent to Cambodian health science university students via email and social media posts and distributed online through Google. In total, 69 students took part in the survey. After data cleaning, the final sample included 60 undergraduate and graduate students from various Cambodian health science universities.

3.1. Students' demographic data

Of the 60 participants, 33 were males (55%) and 27 were females (45%). Regarding the respondents' age groups, most students in the student population surveyed were young adults between 17–25, accounting for 57 (95%). This result reveals that most students are fresh-graduated from high school and are directly pursuing an MD or DD major for their HE degree (Table 1).

Table 1. Gender, age group, and working status of MD and DD students (N=60)

Gender and age group	Frequency	Percentage (%)
<i>Gender</i>		
Male	33	55
Female	27	45
<i>Age group</i>		
17–25	57	95
26–30	1	1.67
31–35	2	3.33
36–40	0	0
>40	0	0
<i>Working status</i>		
Working	10	16.67
Non-working	50	83.33

The majority of the respondents identified themselves as being from Phnom Penh city, mainly consisting of 14 (23.33%); this might be because the students who live in

Phnom Penh city were more accessible to health science information and support than the students from the provinces. Those students from the provinces may get little or no information, support, and encouragement regarding health science universities or majors of study, especially MD and DD majors (Table 2).

Table 2. MD and DD students' enrollment from each province of Cambodia (N=60)

Province/City	Frequency	Percentage (%)
Phnom Penh	14	23.33
Kampong Cham	8	13.33
Takeo	8	13.33
Kandal	6	10.00
Kampot	4	6.67
Tboung Khmum	3	5.00
Kampong Speu	3	5.00
Battambang	3	5.00
Pursat	2	3.33
Kampong Thom	2	3.33
Siem Reap	2	3.33
Banteay Meanchey	2	3.33
Prey Veng	1	1.67
Kampong Chhnang	1	1.67
Sihanoukville	1	1.67

Table 3 shows the respondents from each health science university in Phnom Penh, Cambodia. Participation from the University of Puthisastra (UP) was greater than that of the other sampled universities. It could be inferred that students from UP had better internet accessibility and were more active on social media platforms. We understand that emails are an official means of communication at UP between students and lecturers, students and students, and students and faculty members, requiring that every student frequently check their email inboxes, or they would miss class updates, announcements, or directives from departments/ faculties. However, this study also reveals that 42 (70%) of the enrolments were in MD, and 18 (30%) of the enrolments were in DD majors from all the health science universities (Figure 1).

Table 3. MD and DD students' enrollment in each health science university of Cambodia (N=60)

Health Science University	Frequency	Percentage (%)
University of Puthisastra	45	75
University of Health Science	9	15
International University	3	5
Norton University	2	3.33
Health Science Institute of RCAF	1	1.67
Chenla University	0	0

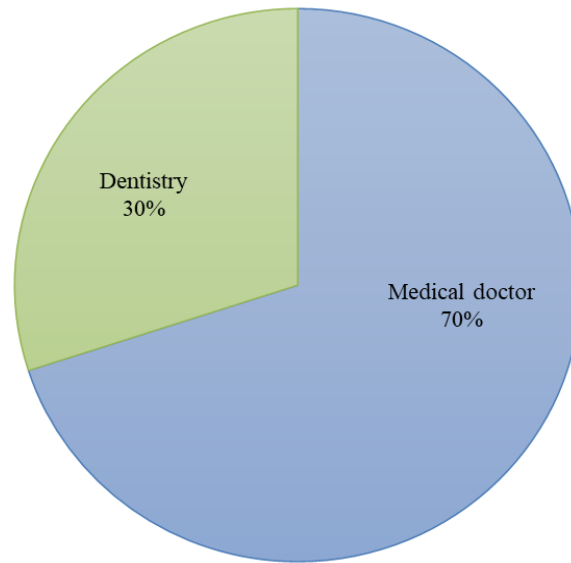


Figure 1. Enrollment in MD and DD majors

3.2. Students' perceptions of enrolled MD and DD majors

3.2.1. Factors motivating students enrolled in MD and DD majors

Table 4 indicates the percentages of students' perceptions of enrolling in health science majors. Comparatively, 30 (50%) of the participants strongly agree that tuition fees played a primary role in their choice of universities and majors. The second most crucial factor impacting undergraduate students' decisions on their MD and DD majors was courses offered by universities, constituting 46.67% (28 participants total). In contrast, the third factor concerns modern technologies integrated into their university campuses, accounting for 38.33% (23 out of the 60 targeted respondents).

Table 4. Factors encouraging students enrolled in MD and DD majors (N=60)

Description	N	%
<i>Strongly agree</i>		
Tuition fees played a large role in my choice of university	30	50
Specialization courses offered are a major reason why I chose my university	28	46.67
It is important for my university to have modern technology available to me	23	38.33
My family played a large role in my choice of university	21	35
The possibility of gaining a scholarship influenced my choice of university	21	35
The location of the university is an important factor for me	19	31.67
Social events/ activities are an important factor of my university experience	18	30
The social status of my university means a lot to me	15	25
Campus size and infrastructure are very important to me	15	25
<i>Agree</i>		
The social status of my university means a lot to me	27	45
The location of the university is an important factor to me	23	38.33
Specialization courses offered are a major reason why I chose my university	22	36.67
It is important for my university to have modern technology available to me	22	36.67
Social events/ activities are an important factor of my university experience	22	36.67
Campus size and infrastructure are very important to me	20	33.33
The possibility of gaining a scholarship influenced my choice of university	18	30

Description	N	%
My family played a large role in my choice of university	17	28.33
Tuition fees played a large role in my choice of university	14	23.33
<i>Neutral</i>		
Social events/ activities are an important factor of my university experience	15	25
My family played a large role in my choice of university	14	23.33
The social status of my university means a lot to me	14	23.33
Campus size and infrastructure are very important to me	13	21.67
The possibility of gaining a scholarship influenced my choice of university	12	20
The location of the university is an important factor to me	11	18.33
Tuition fees played a large role in my choice of university	9	15
<i>Disagree</i>		
I chose my current university because I had friends who are attending	19	31.67
Campus size and infrastructure are very important to me	9	15
<i>Strongly disagree</i>		
I chose my current university because I had friends who are attending	27	45

3.2.2. Theme-based on students' perceptions of being enrolled in MD and DD majors

The findings of the FGD reveal how the students view pursuing a degree in MD and DD. According to the theme-based results, several factors, including students' life experiences, role models, family support, engagement, academic achievement, and career perspectives, were connected to their decision to major in MD or DD. As listed below is an individual response from FGD, respectively.

a. Life's experience

A medical student who was the first respondent claimed that *when she was a child and visited a hospital to receive treatment for her illness, she believed the doctor lacked the expertise necessary to handle the situation successfully*. She, therefore, desires to pursue a career as a professional doctor to use her knowledge to offer Cambodians better healthcare. (Female, G1P1)

Similar to the initial response, another MD student shares her view. *I decided to major in medicine because I want to work as a professional doctor in the future so that I can provide medical care to my family and the Cambodian people*. In my opinion, a doctor is crucial in helping people recover from illnesses and maintain better health. *When I was younger, I used to be sick a lot and go to the hospital in my province to get treated*. However, sometimes, the doctor would not provide her with professional skills to cure her illness until she was sent to the hospital in Phnom Penh City to continue her treatment. (Female, G2P1)

A dental student stated that she chose her degree to become a dentist. *My goal is to assist others in achieving improved dental health*. However, I frequently experience dental issues, so I believe that after earning a degree in dentistry, I will utilize my knowledge to assist others in maintaining better oral health. (Female, G2P5)

b. Role modules

The first interviewee stated that, since her uncle is a doctor, she aspires to follow in his footsteps and pursue a career in healthcare. (G2P1, female)

The other respondent, a dental student, said he chose that degree because he wanted to take over his father's business. Since he was a small child, he has aspired to become the next generation of fully qualified scientific dentists, following in the footsteps of his conventional dentist father. (G2P4, Male)

c. Career perspective

Most respondents stated they want to study an MD or DD major because they hope to run their enterprises, such as clinics and hospitals, and collaborate with the government to improve healthcare for the general public.

The medical doctor students claimed they chose this major because they hoped to open their hospital or clinic to treat residents when they returned home—additionally, working with the national hospital to enhance healthcare offerings to benefit the Cambodian people's health and well-being. (Female, G1P1; Female, G2P1)

However, a student from dentistry provided his perspective on why he chose that degree. He explained that his goal is to become a professional dentist and run his dental clinic, where he would offer oral health services and care so people could smile confidently and maintain better oral health. (Male, G2P4)

d. Academic performance

Not merely wishing to study and sign up for this major, all respondents expressed a similar opinion of this health science degree. To qualify for any of the significant score ranges, they must pass NEE.

In response to a question from a student, *I opted to take the NEE with a dental major since I believe I did well in science courses in upper secondary school. I was successful in this major and received a passing grade.* She said she plans to pursue a post-graduate degree to specialize in dentistry, a discipline in which few Cambodians are presently interested. (Female, G2P5)

Another respondent also mentioned *that I had a good record in those science courses when I studied at an upper-secondary school. She decided to take the NEE and got a passing score for enrolling in this MD major for her HE degree.* (Female, G1P1)

In short, even though you desire to study MD or DD, you might not be able to if your academic performance is not strong enough.

e. Family engagement and support

All respondents agreed that family involvement and support are crucial factors to consider in these vital health science domains as these majors are expensive and take a long time to complete the degree requirements, and they all expressed this opinion.

Even though the aforementioned are the main factors that motivate them to enroll in MD or DD majors, I will undoubtedly not be able to enroll in this major if I do not receive engagement and support from my family due to the expensive school fees, daily expenses, and extremely hard work that needs to pay off for this major. (All FGD participants)

A medical doctor student has mentioned that *my father gave me an engagement so I could pursue this major. My father was instrumental in convincing me to choose this subject, even though he doesn't work in the health sciences profession. He gave me his full attention and encouragement, both financially and emotionally.* (Female, G1P1)

3.2.3. Students' perception of issues and challenges in enrolling for MD and DD majors

As previously noted, students must pass the NEE before enrolling in health science majors. All respondents agreed that they needed to put much preparation into the NEE. More than this, students from the provinces, in particular, have remarked that the problems and difficulties are primarily due to the lack of inspiration from upper-secondary schools about these MD and DD majors, health science university options, and limited information about them. The second problem arises from the student's motivation, academic performance, and the restricted number of seats available at HE for these health science degrees. Some respondents remarked that passing the NEE for their MD or DD study major took several years. However, MD and DD majors have difficulty studying since all their assessments are challenging and require much effort and memorization to pass. The fact that they must attend both coursework and training in the hospital or clinic simultaneously has made it difficult for them to concentrate on the course content and affected their academic performance.

4. DISCUSSION

This study reveals the MD and DD students' views on why they consider enrolling in these majors for their HE degrees. Several factors motivated them to enroll in these two degrees, including the student's interest in future career perspectives, life experience, role models, academic performance, university reputation and credibility, and support and encouragement from their family. This study's results confirmed those of previous studies, which described the student's view of enrolling in an MD major for the undergraduate program due to encouragement from a family member [6], [24], [25]. The other studies also mentioned that this factor influences all related health science students to pursue their HE degree [5] and continue to become MD or DD specialists in the field [4], [26]. The

other motivational factor that impacted their decision to major in the MD or DD major was a life experience and desire to help people achieve better health and well-being, as Cambodia will need a lot more healthcare professionals to provide healthcare services and maintain quality of life [3], [4], [25]. The study by Gietzelt [9] in Sydney found that DD students' perception of enrolling in this major is that they want to help people receive and achieve better oral health with a confident smile. Our result indicates that those enrolling in MD and DD deserve to have clinics and hospitals and work with the government sector to improve healthcare services [5], [15]. Similarly, studies in Saudi Arabia by Al-Faris and Kalantan [16] and in China by Yang et al. [22] and Wu et al. [24] described the MD student's choice of MD major for an HE degree because they deserve to become healthcare professionals and provide better healthcare services to patients.

Of course, these two major events took them a long way; therefore, the university's reputation and credibility, including specialization courses, location, and campus size, were also factors for them to consider before deciding to study [24], [26], [27]. Moreover, these two majors of study required good academic performance in the science courses from upper-secondary school to pass a NEE and the ability to continue these majors effectively from the first year until graduation [18], [19], [24], [25]. However, the above results mentioned that besides the factors that influence and motivate students' decisions in MD and DD majors, there are also factors related to the availability of information regarding MD and DD majors, scholarship opportunities, and universities that have offered this major since upper-secondary school, which can help students a lot to prepare themselves for this major of study [18], [19], [28]. This study indicated that role models also played a virtual role in motivating students to keep motivated and try their best to fulfill this degree to reach their future career dreams [27], [29].

Last but not least, in Asia, especially in Cambodian cultural perspectives, the parent significantly impacts students' decisions when considering and enrolling in a major for their HE. Many of them plan for their child's major at university and future career, which will follow in their footsteps by starting their businesses or running healthcare facilities [7], [8], [22]. This factor may provide students with full support and encouragement, both financially and emotionally, for those who enroll in an MD or DD major [6], [24], [25], [29]. This will impact their interests, commitments, and persistence to complete these programs.

5. CONCLUSION

In conclusion, the findings suggested that students' interests in career perspective and academic performance were the main motivational factors for enrolling in MD and DD majors. The other supporting factors to keep them motivated on this challenging and lengthy journey until graduation include family support, encouragement, and role models. The university profile also plays an essential role in students' decision-making when enrolling in these MD and DD majors because these two majors require students to take a long journey to graduate.

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