

Factors associated with students deciding to study Pharmacy or Medicine at the Faculty of Health Sciences, University of Puthisastra, Cambodia

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Abstract: Most of the students, after being awarded with a high school diploma, have made decision to study at health science academic institutions under various majors particularly including Pharmacy and Medicine. However, the reasons behind this decision remain unclear. This study aimed to investigate the factors which make students decide to study Pharmacy (PM) or Medicine (MM) at Faculty of Health Sciences (FHS), University of Puthisastra (UP). This study was performed *via* structured interviews of 138 high school graduates who submitted their application at FHS. The findings indicated that the enrollment number of male students accounted for 30.4% (n=42, age in years: 19 ± 1.65) and of female students accounted for 69.6% (n=19, age in years: 18 ± 1.28), which was not significantly different in ages ($p > 0.05$). The percentages of students who chose to study PM or MM were 78.26% (n=108) or 21.74% (n=30) respectively. The female students preferred PM (91.70%, n=88) to MM (8.30%, n=8), but the male students preferred MM (52.40%, n=22) to PM (47.60%, n=20) ($p < 0.001$). The students were aware of the UP through their relatives (65.94%, n=91). The students' relatives were the students of UP studying in the majors of Pharmacy (42.22%, n=19), Medicine (17.78%, n=8), Medical Laboratory Technology (MLT) (13.33%, n=6), Nursing (11.11%, n=5), Midwifery (11.11%, n=5), Dentistry (2.22%, n=1) and Information Technology (IT) (2.22%, n=1). The students were aware of UP because of mostly the recommendation by their relatives who are studying at UP in the majors of Pharmacy (39.47%, n=15) and Medicine (18.42%, n=7). The students enrolling for PM or MM made a decision to study at FHS because of "Qualified experimental equipment for practical work" (PM: 53.70%, n=58; MM: 43.33%, n=13). It is concluded that the students decided to study at FHS, UP, because of "Qualified experimental equipment for practical work," and they were recommended to enroll in FHS by "Their relatives studying at UP," in particular the ones who major in "Pharmacy" or "Medicine." This knowledge is a key to formulating effective enrollment strategies in the development of the Faculty of Health Sciences, University of Puthisastra.

Key words: Pharmacy, Medicine, Faculty of Health Sciences, University of Puthisastra

1. Introduction

Schools of Health Sciences aim, academically, at promoting marvelous health human resources. There are, globally, three types of health science education system: (1) non-graduate-entry system; (2) graduate-entry system; and (3) mixed system of non-graduate and graduate entries [1]. Health science education systems in Southeast Asia has been developed from the Western health programs since several centuries ago, and its teaching methodology based upon the approaches in teacher-centered, didactic, discipline-specific and lecture-based [2]. However, the actual skill of health care service applying in the community seems not matched well with what is taught at schools of health sciences. Consequently, the health science curriculum has been reformed as per the community's need in health-illness process [3].

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Health science education system in Cambodia is diverse causing challenges to the health science educators. The schools of health sciences of this country have traditionally been influenced by French colony. In recent years, Cambodian health science schools have gone through manifold improvement, with the implementation of student-centered learning [4]. This reform elevates the number of enrollment for the schools of health sciences as indicated by a high figure of private health-care businesses up to 5,501 institutions licensed by the Ministry of Health of Cambodia [5].

Most of the students, after being awarded with a high school diploma, have made decision to study at health science academic institutions under various majors particularly including Pharmacy and Medicine [6,7]. However, the reasons behind this decision remain unclear. This study is, therefore, to investigate the factors associated with students deciding to study majors of Pharmacy or Medicine at Faculty of Health Sciences, University of Puthisastra, Cambodia.

2. Materials and Methods

2.1. Study design

The survey was designed as the “*Cross-sectional Study*” focused on high school graduates who submitted their application at Faculty of Health Sciences (FHS) of University of Puthisastra (UP).

2.2. Study area

The study was conducted in FHS, UP, located in Sangkat Boeung Raing, Khan Daun Penh, Phnom Penh city, Cambodia. There are three departments under FHS: (1) Department of Pharmacy; and (2) Department of Medicine. FHS mainly aims to produce highly capable graduates with strong skills and knowledge in health care and pharmacological industries [8].

2.3. Sampling design

The “*Accidental Sampling Method*” was applied in this study as all the students, who were present at the admission office for submitting an application, was subjected to an interview.

2.4. Data collection

The “*Structured Questionnaire*” was constructed and concentrated in three major topic areas as follows: (1) awareness of UP; (2) respondents’ relatives studying in UP; and (3) reasons behind the respondents’ decision in studying at UP. The data was collected from 26th September till 04th October 2016. Six interviewers administered the questionnaire at the site; 138 high school graduates were considered as respondents to questionnaires. Subsequent to the retrieval of the questionnaire, the data was tabulated, processed and manipulated in Microsoft Excel 2016 to be used for data analysis.

2.5. Data analysis

Subsequent to the entry of the data, the analysis performed by using IBM SPSS Statistic 22 was applied. The program Microsoft Excel 2016 was used to transform the outputs of analysis into graphs or tables. The statistical techniques used in the interpretation of the analysis included frequency counts, arithmetic means, percentages, cross tabulation, Pearson chi-square test and independent sample t-test.

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3. Results and Discussion

3.1. Gender and age of students

In total of 1,935 operating schools of health sciences, there is, on average, one health science school for every 3.3 million persons in the world in which Asia, with the largest population (about 3.9 billion people), has the most health science school (n=860) [9]. This is reflected by the rise of the number of baccalaureates in accordance with, proportionately, the increase of the number of health science school applicants [10]. In this study, the number of the enrollment of female students was higher than those of male students; however, the age between male and female students was not significantly different ($t_{63.545} = 1.097, p > 0.05$).

Table 1. Percentages and mean ages of male and female students upon the time of enrollment.

Applicants by gender	Counts	Percentages	Means in years of age	SDs
Male students	42	30.43%	19	1.65
Female students	96	69.57%	18	1.28

Note: Means of ages between male and female are not significantly different ($t_{63.545} = 1.097, p > 0.05$).

3.2. Majoring in pharmacy or medicine

Upon the submission of application forms, 78.3% (n=108) and 21.7% (n=30) of the students majored in Pharmacy (PM) and Medicine (MM) respectively (Figure 1). The PM was the most popular to the students, comparing with the MM. The similar finding has been reported by Keshishian [11] stating that the enrollment number of pharmacy major being higher than that of medicine major was due to the better chance of being accepted in pharmacy than medicine, in which their motivation basically was “want many career opportunities” and “love helping others.”

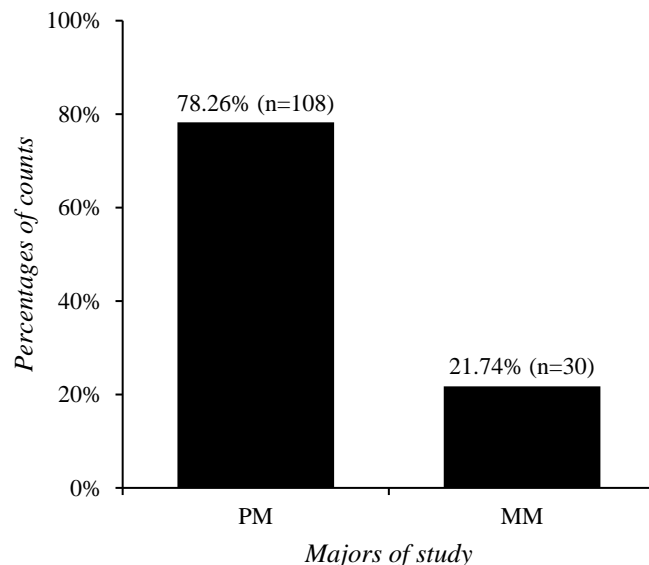


Figure 1. Percentages of students who enrolled for Pharmacy Major (PM) or Medicine Major (MM).

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3.3. Relationship between gender and majoring decision

To ascertain the relationship between gender and majoring decision, the cross tabulation between gender and majoring decision was analyzed. The female students preferred PM (91.70%, n=88) to MM (8.30%, n=8), but the male students preferred MM (52.40%, n=22) to PM (47.60%, n=20) ($\chi^{2(1)} = 33.32, p < 0.001$) (Figure 2). Chen, et al. [12] reported that first year enrollments, at Sub-Saharan African health science schools, ranged from 2 to 1800 among which 81% was the health science applicants. This strongly accords with proven assumption concluded by Mullan, et al. [13]. On top of these, a study unveiled that the female first authorship increased significantly from 27% in 1994 to 37% in 2014 which is an indicator affirming the elevation of the number of health science students [14].

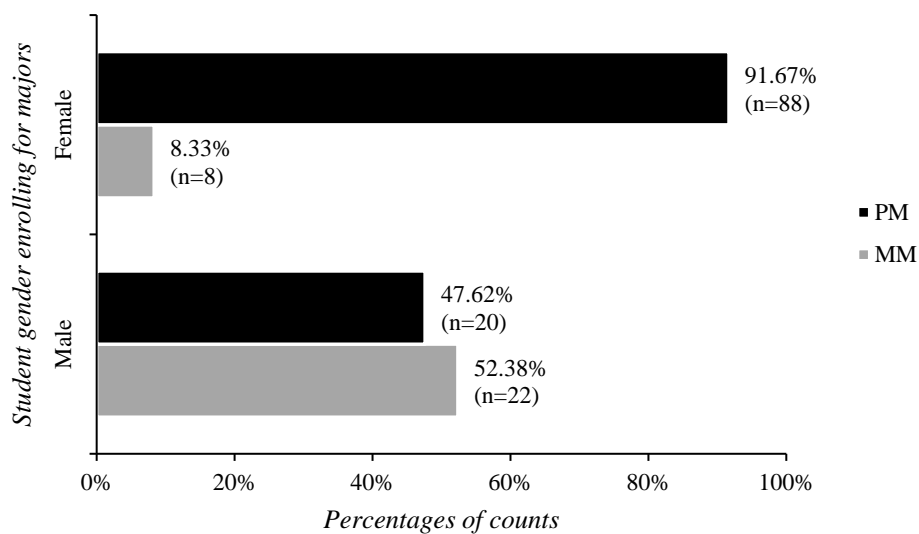


Figure 2. Percentages of student gender who enrolling for Pharmacy Major (PM) or (Medicine Major (MM). There is statistically significant association between gender and majoring decision ($\chi^{2(1)} = 33.32, p < 0.001$).

3.4. Awareness of UP by sources of information

The awareness of UP by students was analyzed as to ascertain sources of information through which students came to know about UP. Of six sources, the source of “Relatives (65.94%, n=91)” was the highest; the sources of “Facebook (14.49%, n=20)” and “Friends (13.04%, n=18)” were comparable, and the sources of “Website (2.17%, n=3),” “Television (0.72%, n=1)” and “Others (3.62%, n=5)” were the lowest in percentages (Figure 3). Urban residents fundamentally rely on combination platforms of information sources via a range of digital activities including internet searches, twitter, blogs and websites of TV and newspapers [15]. Mitchell et al. [16] also reported that the pathways to news used by American adults were “Television (27%)” and “Online (50%).”

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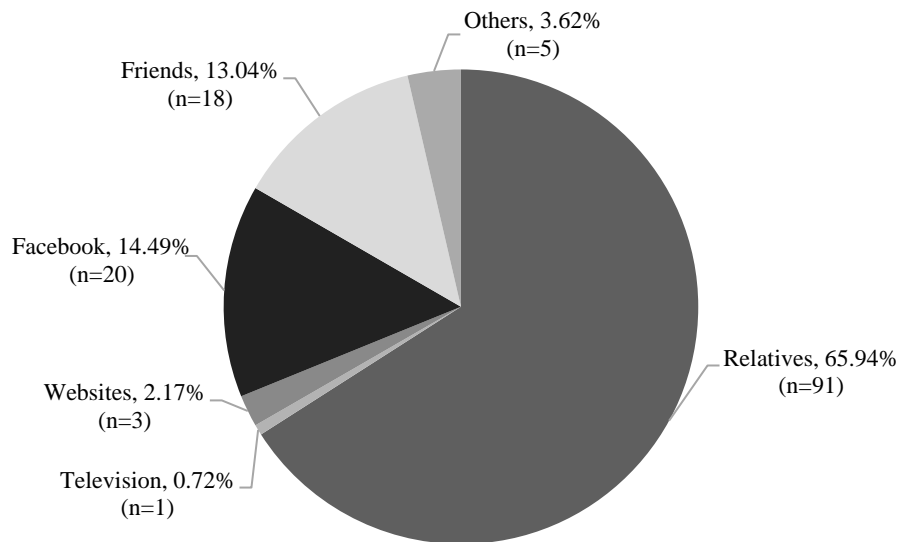


Figure 3. Percentages of sources of information through which the students were aware of UP.

3.5. Majors of relatives studying at UP

As the students were informed of the UP by their relatives, further analysis of relatives studying in UP was proceeded. It was found that the students had relatives studying at UP with different majors. The Pharmacy major (42.22%, n=19) was the highest, followed by the majors of Medicine (17.78%, n=8) and Medicine Laboratory Technology (MLT) (13.33%, n=6). The majors of Nursing (11.11%, n=5) and Midwifery (11.11%, n=5) were comparable with the majors MLT. The Dentistry (2.22%, n=1) and Information Technology (IT) (2.22%, n=1) majors were the lowest (Figure 4). This finding concurs with Roekel [17] reporting that the community and family members play a vital role in assuring high-quality education for their young people.

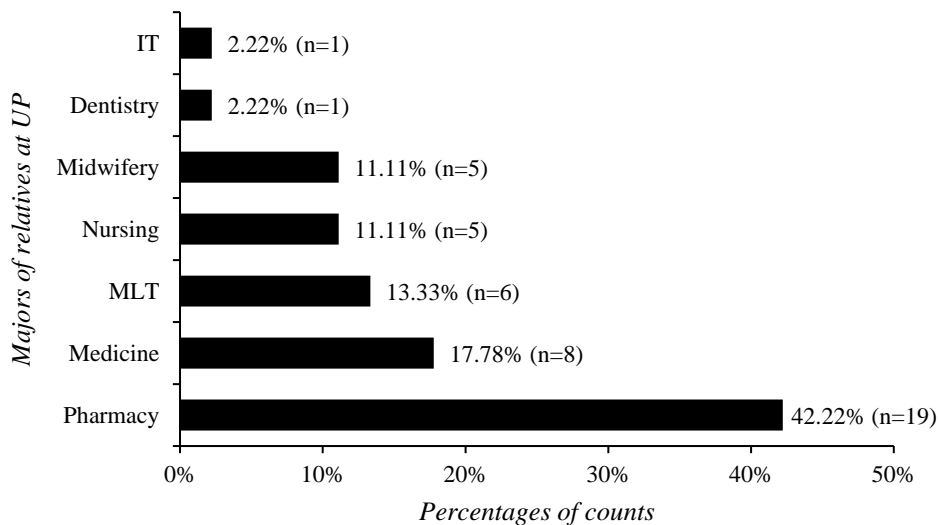


Figure 4. Percentages of majors of relatives studying at UP.

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3.6. Students recommended to study at UP by their relatives

Based upon the findings of the “*awareness of UP by sources of information,*” “*relatives studying at UP*” and “*majors of relatives studying at UP,*” the cross tabulation between them is needed to be analyzed in order to verify the link between variables. The result showed that the students were aware of UP because of mostly the recommendation by their relatives who are studying at UP in the major of Pharmacy (39.47%, n=15), following by the Medicine (18.42%, n=7), MLT (15.79%, n=6), Nursing (13.16%, n=5) and Midwifery (10.53%, n=4) majors. The recommendation by IT major (2.63%, n=1) was the lowest (Table 2). This is similar with the report of Schnell et al. [18] describing that the family relatives involved crucially with the educational pathways of their young generation.

Table 2. Percentages of students recommended by their relatives of each major to study at UP.

Students recommended by their relatives of each major	Percentages of counts
Studying at UP by relatives majoring in Pharmacy	39.47% (n=15)
Studying at UP by relatives majoring in Medicine	18.42% (n=7)
Studying at UP by relatives majoring in MLT	15.79% (n=6)
Studying at UP by relatives majoring in Nursing	13.16% (n=5)
Studying at UP by relatives majoring in Midwifery	10.53% (n=4)
Studying at UP by relatives majoring in IT	2.63% (n=1)
Total	100% (N=38)

3.7. Factors encouraging students to study at FHS

Reasons behind students’ decision in studying at FHS were analyzed in order to verify the factors triggering students to study at FHS. Good management of educational system in medical school affects the students’ perceptions under the context of university quality, thus playing as a reason based upon which the students decide to study at the university [19]. This finding showed that the students enrolling for PM or MM made a decision to study at FHS because of “*Qualified experimental equipment for practical work*” (PM: 53.70%, n=58; MM: 43.33%, n=13) (Figure 5). Comparable finding which is studied by Jaschinski and De Villiers [20] revealed that the qualified skill training at the health science school reflected the eagerness of students to the university.

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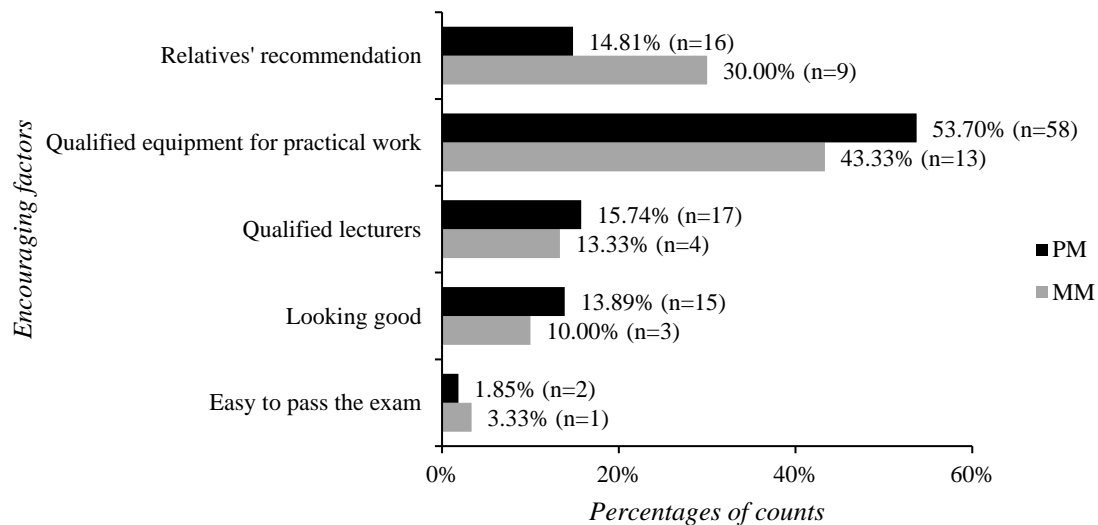


Figure 5. Percentages of the factors encouraging students to study at FHS.

4. Conclusion

Collectively, the findings altogether demonstrate the major factors influencing students to study at FHS, UP, concluded that the students decided to study at FHS, UP, because of “*Qualified experimental equipment for practical work,*” and they were recommended to enroll in FHS by “*Their relatives studying at UP,*” in particular the ones who major in “*Pharmacy*” or “*Medicine.*” This knowledge is a key to formulating effective enrollment strategies in the development of the Faculty of Health Sciences, University of Puthisastra.

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