

# Taibah University

# Journal of Taibah University Medical Sciences





### **Educational Article**

# Students' perceptions about learning pharmacology at a single private institute in Malaysia



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Received 13 September 2014; revised 10 January 2015; accepted 12 January 2015; Available online 11 February 2015

#### الملخص

أهداف البحث: فهم التصور الحالي لطلاب الطب بشأن تعلم علم الأدوية، وأهمية دوره في كل من الممارسة السريرية والبحوث. وقد يفيد هذا الفهم في تحسين التدريس في هذا الفرع من العلوم. أجريت هذه الدراسة لتقييم رأي طلاب الطب نحو علم الأدوية.

طرق البحث: تم اختيار ١٥٠ من طلاب الطب عشوائيا من جامعة العلوم والإدارة، في ماليزيا. عبا الطلاب استبانة ذاتية بنية معرفة وجة نظر هم تجاه تعلم علم الأدوية.

النتانج: كان معظم المشاركين من الطالبات ((0,0))، وكان (0,0) منهم من العرق الملايي، ومن أبوين مهنتهم غير طبية ((0,0) – (0,0)). وكان متوسط النسبة المنوية للاستجابة والموافقة على المشاركة ((0,0) + (0,0) + (0,0) بوهي معتبرة جدا (قيمة (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) + (0,0) +

الاستنتاجات: وصلت هذه الدراسة إلى أن التصور العام للطلاب لتعلم علم الأدوية كان إيجابيا. لكن كشفت الدراسة ضرورة تضافر الجهود لجعل تعلم علم الادوية تجربة مثيرة للاهتمام، وتحديد المجالات ذات الأولوية لهذه التحسينات.

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**الكلمات المفتاحية.** تصور الطلاب; علم الأدوية, المعاهد الخاصة في ماليزيا; تعلم علم الأدوية

#### Abstract

**Objective:** Understanding current perceptions of medical students regarding learning pharmacology and understanding pharmacology's important role in both clinical practice and research may be helpful in improving the teaching of this discipline. This study was conducted to evaluate medical students' opinions toward pharmacology.

**Methods:** One hundred fifty medical students, randomly selected from the Management and Sciences University (MSU) in Malaysia, completed a self-administered questionnaire that inquired concerning their views toward learning pharmacology.

**Results:** The majority (75.3%), of the participants were female and (68%) were Malays whose parents were non-medical professionals (88.7–95.3%). The average percentage of respondents agreeing to participate (47.15  $\pm$  11.69) was highly significant (p < 0.0001) compared with the average percentage of respondents that disagreed (9.97  $\pm$  3.15). The percentage of students that considered pharmacology as a favoured subject and a choice for post-graduate studies was significantly lower (p < 0.05) compared with the percentage that did not, although the students that agreed were less than 30% of the total participants.

Conclusions: The study found that the general perceptions of students regarding the study of pharmacology

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were positive. Nevertheless, the study also exposed the need for concerted efforts to make learning pharmacology an interesting experience and to identify priority areas for such improvements.

**Keywords:** Learning pharmacology; Pharmacology; Private institute in Malaysia; Student perceptions

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#### Introduction

Students' perceptions comprise an assortment of effective methodologies for improvement on teaching basic sciences related to clinical professions, such as pharmacology in health education.<sup>1,2</sup> Educational research has been conducted regarding students' perceptions toward teaching and learning as well as factors that affect their learning in undergraduate programs as far back as the 19th century.<sup>3,4</sup> Most of the studies on students' feedback mostly focused on areas such as learning outcomes, teaching and assessment methodologies, academic staff and educational environment.<sup>5</sup> Student perception is an accepted means of reviewing teaching and evaluation methods and developing teaching methodologies undergraduate programs around the world. 1,2,6,7 Furthermore, student perception is used to identify which teaching strategies students perceive to be the most effective means to facilitate the learning of pharmacology material.8

Student feedback has been considered to be an effective methodology for modification of undergraduate curriculum and making pharmacology more interesting and practicable.<sup>2</sup> Several studies on students' perceptions regarding learning of pharmacology documented students' improvements in performance through improved teaching and learning processes.<sup>9</sup> Student feedback is thus considered an invaluable tool for improving students' performances when suggestions obtained from students are implemented.<sup>10</sup>

Studies regarding students' feedback help to provide several useful inputs for educational improvements. These studies can provide valuable inputs into the curriculum review processes, <sup>11,12</sup> help in forming a learner-centred knowledge-building process, <sup>13</sup> improve on the implementation of recent teaching methods in pharmacology, <sup>14</sup> and in the fundamental or clinical components, <sup>15</sup> as well as enhance the quality of learning environments. <sup>16</sup>

Pharmacology is a crucial subject for medical students who are going to be future medical practitioners. It is therefore important that medical students appreciate pharmacological principles and are able to relate and apply them in the practice of medicine. Traditionally, the teaching of pharmacology in medical schools follows a discipline-based and lecture-based approach with a heavy emphasis on acquiring factual knowledge concerning drugs and does not train the medical students adequately in their therapeutic application. It is therefore pertinent that knowledge of basic pharmacology has remained poor among medical practitioners. Although

the need for improved education in clinical pharmacology is clear, the fact that assessment methodologies in pharmacology for medical students have shown little change during the past several decades suggests that little is known regarding how to accomplish such improvements. <sup>17,18</sup>

At the international medical school Management and Science University, medical students are taught Pharmacology in a block system during their third and fourth semesters of study. Pharmacology instruction takes place through didactic lectures and case-stimulated learning (CSL) sessions. Each semester has three or four lectures per week and students are divided into batches of 16 or 20 for the CSL sessions. Each CSL batch is further subdivided into four groups of four or five students each. The students solve cases using the concepts taught in the class and the information resources available in the school library. Students are taught about essential drugs, the P-drug concept and P-drug selection for specific patients.

The revised curriculum of the Management and Sciences University, to which the school is affiliated, places a strong emphasis on self-directed learning and directed learning. The curriculum emphasises rational prescribing using an evidence-based medicine approach, with the WHO Guide to Good Prescribing as the reference standard.

Understanding current perceptions held by future medical practitioners regarding pharmacology and its role in both research and clinical practice may be helpful for improving teaching on this subject and introducing appropriate changes into the curricula where and when necessary. This research was conducted as a cross-sectional survey to evaluate medical students' attitudes toward pharmacology.

#### **Materials and Methods**

This is a descriptive cross sectional study; random sampling was performed to collect the data from university students. One hundred fifty students from the International Medical School and Faculty of Health and Life Sciences, Management and Science University (MSU), Malaysia, consisting of both genders, were recruited as respondents in this study. Questionnaires were distributed between the 2nd and 31st of July 2012. The questionnaire was designed based on the literature review in this field<sup>14</sup> with modification and distributed to medical students. A short briefing about the aims and objectives of this study was given and after the respondents filled in the questionnaire, the questionnaires were collected. Data collected were analysed using the Statistical Package for Social Sciences (SPSS), Version 18. Frequency was expressed as a percentage. The Pearson Chi-square test was used to evaluate any significant difference between percentage of frequency responses for each question. Analysis of variance (ANOVA) and the post-hoc test were used to analyse the difference in responses among all questions. Tukey's Honestly Significant Difference (HSD) test was used as the post-hoc test. A p value < 0.05 was considered as statistically significant.

#### Results

Socio-demographic data of participants

Students involved in this study were students from International Medical School and Faculty of Health and Life

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