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## Students' Perception of Problem-based Learning Conducted in Phase1 Medical Program, UCSI University, Malaysia

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### Abstract

Problem-based learning (PBL) has been introduced in the Phase 1 curriculum of Doctor of Medicine programme at Faculty of Medicine & Health Sciences, UCSI University since its inception in 2005. The main objective of this study was to investigate the perception of medical students on problem-based learning sessions. A cross sectional study was conducted on a total of 115 medical students from June 2011 to June 2012. Forty nine (42.6%), 31(27%) and 35(30.4%) medical students from first, second and third years respectively participated in the study. The questionnaire included 23 statements to assess the benefits and disadvantages of PBL and the requirements in PBL sessions. Findings revealed that the majority agreed with statements on benefits - PBL motivates students for self-learning (80.9%), enhances discovery of learning issues (78.3%), provides critical thinking skills (71.3%), improves communication skills (80%) and enhances in obtaining new information (85.2%). Sixty percent (n=69) responded that PBL was time consuming and 84 (73.1%) noted that some students dominate while others are passive in the discussion. Overall positive perception on effectiveness of PBL on students' learning was obtained in 79 (68.7%) of respondents and the highest agreement was observed among the second year students (93.5%).

*Key words:* PBL, medical students

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### Introduction

Problem-based learning (PBL) in medical education began with the Faculty of Medicine at McMaster University, Canada in 1969. Since then, several medical schools worldwide have been implementing PBL in their curriculum. PBL provides significant effectiveness to students in developing critical thinking and problem solving skills as well as life-long learning habits (Amin & Khoo, 2009).

PBL was introduced at the Faculty of Medicine & Health Sciences, UCSI University, since the inception of medical programme in 2005. Although implemented, students' perception on PBL has not been reviewed. Students' perceptions are important in order to improve the teaching-learning strategy used in PBL.

This study was aimed to explore the perception of Phase 1 medical students on implemented PBL sessions and compare perceptions between different academic years.

### Methodology

The study was a cross sectional study in which a total of 115 Phase 1 medical students were recruited. The study group included 49 students from year 1, 31 students from year 2 and 35 students who have recently passed year 2 professional examination before proceeding to clinical year. The study was performed in UCSI University from June 2011 to June 2012.

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Data collection was by a self-administered pretested structured questionnaire, designed based on existing literature (Amin & Khoo, 2009; Barman *et al.*, 2006). The questionnaire included 23 statements assessing the benefits, disadvantages and requirements in PBL. Students' perception was measured by 5-point Likert scale. Data was analyzed by SPSS for windows version 16. The Kruskal-Wallis test was used to test the statistical significance.

## Results

A majority perceived that PBL motivates students for self-learning (80.9%), enhances discovery of learning issues (78.3%), provides critical thinking skills (71.3%), improves communication skills (80%) and that they obtain new information from PBL (85.2%). However, half of the students (50.4%) disagreed with the statement 'PBL is effective

without having a lecture on the same topic'. Nearly half (40.9%) of students agreed that it was easy to memorize the facts after PBL while 22.6% disagreed and 36.5% gave neutral response. When responding to statements on disadvantages of PBL, the majority agreed that PBL was time consuming (60%) and that some students dominate while others are passive in the discussion (73.1%). More than half of the students agreed with the statement assessing the requirements of PBL sessions. Those include adequate allotment of time for each PBL session (73%), adequate learning resources are available from internet (53.9%) and that rooms for group discussion were comfortable (61.8%). However, only 31.3% agreed that enough learning resources are available in the library. An overall positive perception on effectiveness of PBL on students' learning was observed in 79(68.7%) of respondents (Table 1).

*Table 1: Frequency distribution of students' responses on PBL*

| Questionnaires   | SD/ D number (%) | Neutral number (%) | A/SA number (%) |
|--|------------------|--------------------|-----------------|
| Motivates students for self-learning                                 | 7(6%)            | 15(1%)             | 93(80.9%)       |
| Enhances to find out learning issue from the given problems          | 6(5.2%)          | 19(16.5%)          | 90(78.3%)       |
| Allows in-depth understanding of the topics                          | 15(13%)          | 39(34%)            | 61(53%)         |
| Provides problem analyzing skill                                     | 9(7.8%)          | 27(23.5%)          | 79(68.7%)       |
| Provides critical thinking skill                                     | 11(9.6%)         | 22(19.1%)          | 82(71.3%)       |
| Communication skill is improved                                      | 1(0.9%)          | 22(19.1%)          | 92(80%)         |
| Creates voluntary spirit among students                              | 10(8.7%)         | 42(36.5%)          | 63(54.8%)       |
| Enhances the habit of active participation in group                  | 12(10.4%)        | 29(25.2%)          | 74(64.4%)       |
| Easy to memorize the facts after PBL sessions                        | 26(22.6%)        | 42(36.5%)          | 47(40.9%)       |
| Obtain new information from PBL sessions                             | 4(3.5%)          | 13(11.3%)          | 98(85.2%)       |
| Get practice for lifelong learning                                   | 13(11.3%)        | 38(33%)            | 64(55.7%)       |
| PBL is effective without having lecture of same topic                | 58(50.4%)        | 36(31.3%)          | 21(18.3%)       |
| Enhances the practice of co-operative and collaborative learning     | 11(9.6%)         | 31(26.9%)          | 73(63.5%)       |
| Enhance the practice of identifying learning resources               | 7(6.1%)          | 31(26.9%)          | 77(67%)         |
| Have experience of group leadership                                  | 8(6.9%)          | 41(35.7%)          | 66(57.4%)       |
| Takes too much time for preparation of presentation (time consuming) | 17(14.8%)        | 29(25.2%)          | 69(60%)         |
| Some students dominate while others are passive in the discussion    | 9(7.8%)          | 22(19.1%)          | 84(73.1%)       |
| Didactic lectures are more effective than PBL sessions               | 19(16.5%)        | 52(45.2%)          | 44(38.3%)       |
| Time allotted for each PBL session is enough                         | 11(9.6%)         | 20(17.4%)          | 84(73%)         |
| Enough learning resources are available in library                   | 45(39.1%)        | 34(29.6%)          | 36(31.3%)       |
| Enough learning resources are available from internet                | 14(12.2%)        | 39(33.9%)          | 62(53.9%)       |
| Rooms for group discussion are comfortable                           | 25(21.7%)        | 19(16.5%)          | 71(61.8%)       |
| Overall , PBL is effective for student's learning                    | 12(10.4%)        | 24(20.9%)          | 79(68.7%)       |

\*SD = Strongly disagree, D = Disagree, A= Agree, SA= Strongly agree

*Table 2: Comparison of the students' responses to the statements by academic year*

| Questionnaires  | Year 1<br>Mean<br>Rank | Year 2<br>Mean<br>Rank | Year 3<br>Mean<br>Rank | $\chi^2$ | p-<br>value |
|---|------------------------|------------------------|------------------------|----------|-------------|
| Motivates students for self-learning                                  | 46.94                  | 67.47                  | 65.10                  | 12.703   | .002        |
| Enhances to find out learning issue from the given problems           | 44.11                  | 69.71                  | 67.07                  | 19.741   | .000        |
| Provides problem analyzing skill                                      | 48.99                  | 67.61                  | 62.10                  | 7.842    | .020        |
| Provides critical thinking skill                                      | 46.39                  | 71.32                  | 62.46                  | 14.116   | .001        |
| Creates voluntary spirit among students                               | 50.44                  | 69.68                  | 58.24                  | 7.22     | .027        |
| Enhances the habit of active participation in group                   | 48.51                  | 61.13                  | 68.51                  | 9.126    | .010        |
| Easy to memorize the facts after PBL sessions                         | 46.50                  | 66.18                  | 66.86                  | 11.034   | .004        |
| Obtain new information from PBL sessions                              | 48.37                  | 64.52                  | 65.71                  | 9.526    | .009        |
| Takes too much time for preparation of presentation. (time consuming) | 69.44                  | 42.37                  | 55.83                  | 13.737   | .001        |
| Didactic lectures are more effective than PBL sessions                | 66.81                  | 54.34                  | 48.91                  | 7.204    | .027        |
| Time allotted for each PBL sessions is enough                         | 51.63                  | 70.69                  | 55.67                  | 8.314    | .016        |
| Enough learning resources are available in library                    | 58.76                  | 71.87                  | 44.66                  | 11.800   | .003        |
| Overall , PBL is effective for student's learning                     | 47.53                  | 73.44                  | 58.99                  | 14.532   | .001        |

Students' responses were compared according to mean rank by academic year. It showed that higher percent of 2nd and 3rd year students gave positive responses to the benefits of PBL than 1st year students. First years reported more frequent agreement with regards to disadvantages of PBL compared to other students. Significant differences by academic year were observed in the statements shown in Table 2. In viewing of overall students' perception on effectiveness of PBL on students' learning, the mean rank of 2nd year students' perception was higher than year 1 and 3, with statistically significant differences between academic year ( $p=0.001$ ) (Table 2).

## Discussion

Out of 115 participants, the majority positively responded to the statements assessing the benefits of PBL. These findings were similar to those previous studies (Barman *et al.*, 2006; Ommar, 2011; Saalu *et al.*, 2010). This study indicates that the School of Medicine has achieved the objectives of conducting PBL as one of the main teaching methods.

Regarding the disadvantages of PBL, more than half of the students responded that PBL is time consuming. This finding is similar to that of a study group in Nigeria (Saalu *et al.*, 2010). Time consumption depends on the duration for searching literature, collecting new information, preparing presentations and the

difficulty of the PBL trigger where students may need more time to study.

A majority agreed that some students dominate while others are passive in the discussion. The level of participation in PBL sessions varied among students. Poor participation of some students could be attributed to four main factors - content knowledge, English proficiency, facilitator's role and students' perception of these roles and social relationships between group members (Imafuku, 2007).

Comparison of the responses by different academic years on the benefits of PBL showed that significantly higher percentage of year 2 and year 3 students gave positive responses compared to year 1 students. Comparison of responses to disadvantages revealed that the mean rank of the responses from year 1 students was higher than that of other students. The reason may be that year 1 students had not adapted to the PBL method at the time of survey, whereas students in year 2 and 3 had experienced many PBL sessions and were mature enough for adult learning with time management.

## Conclusion

The majority of the Phase 1 medical students of UCSI University perceive PBL sessions as effective for their learning and had positive attitude on the benefits of PBL. However, more

than half of the students responded that PBL was time consuming and some students dominated in PBL session while others were passive in the discussion.

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