

ARTICLE INFO

Submitted: 04-03-2020

Accepted: 04-10-2020

Online: 30-12-2020

Mentoring Needs among the Phase 1 Medical Students in the Universiti Sains Malaysia

Mohd Zarawi Mat Nor¹, Jamillah Al-Muhammady Mohammad¹,
Najib Majdi Yaacob²

¹Department of Medical Education, School of Medical Sciences,
Universiti Sains Malaysia, Kelantan, MALAYSIA

²Unit of Biostatistics and Research Methodology, School of Medical
Sciences, Universiti Sains Malaysia, Kelantan, MALAYSIA

To cite this article: Mat Nor MZ, Mohammad JA-M, Yaacob NM. Mentoring needs among the phase 1 medical students in the Universiti Sains Malaysia. *Education in Medicine Journal*. 2020;12(4):9–16. <https://doi.org/10.21315/eimj2020.12.4.2>

To link to this article: <https://doi.org/10.21315/eimj2020.12.4.2>

ABSTRACT

Mentoring programme is an important element for personal and professional development of medical students. In specific, the most important element is mentors must focus on the real issues that the students face during the mentoring process. This study aimed at comparing the prevalence of the mentoring needs and examining the association between characteristics of demography and mentoring needs among the phase 1 medical students from Universiti Sains Malaysia (USM). A cross-sectional study was conducted in June 2017 among the first- and second-year medical students in the School of Medical Sciences, USM. The USM mentoring inventory (USM-MT-i) questionnaire was employed to collect the data. This self-administered questionnaire consists of two domains with 17 items: communication and self-leadership skills (9 items) and learning skill (8 items). Internal consistency reliability (Cronbach's alpha) for each domain were 0.915 and 0.904, respectively. The overall Cronbach's alpha was 0.895. The prevalence of mentoring needs was determined and its association with the year of study was assessed. This study included 208 of medical students comprised 123 and 85 of the first-year and the second-year, respectively. The prevalence of communication and self-leadership skills mentoring needs among the first-year medical students was 26.8% (95% CI: 22.9%, 30.6%) and 18.8% (95% CI: 14.8%, 23.0%) among the second-year medical students. The prevalence of learning skill mentoring need was 77.2% (95% CI: 73.6%, 81.0%) among the first-year and 63.5% (95% CI: 58.5%, 68.6%) among the second-year medical students. There was a significant association between year of study and learning skill mentoring need ($\chi^2(1) = 4.65, P = 0.031$). None of the demographic characteristics (gender, ethnic, entry qualification, origin and scholarship) was significantly associated with the mentoring needs. The data of mentoring needs among the phase 1 of medical training is crucial to provide them an effective mentoring programme.

Keyword: *Mentoring needs, Mentoring inventory, Phase 1 medical students, Medical school*

CORRESPONDING AUTHOR

Mohd Zarawi Mat Nor, Department of Medical Education, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia | Email: zarawi@usm.my

INTRODUCTION

The mentoring process provides means in which students are being mentored by experienced individual who can develop their professional academic skills such as career management, academic medicine knowledge and other relevant skills (1). Therefore, mentoring process consists of a mentor, mentee(s), content, mutual relationship, situations and results. An effective mentoring relationship facilitates the formulation and realisation of students' own vision through an evolution of personal growth and development to produce a competent doctor in clinical reasoning (2, 3). The mentorship benefited the mentees with several important outcomes that include increased career satisfaction, personal advancement; and if it is done effectively, it may promote personal and professional identity development (4, 5). These benefits are also received by the medical students. This is consistent with a study that found 86% of medical trainees need personal and confidential support system at institutional level (6) and it is very clear to understand the real issues that are faced by them. Conversely, unsuccessful mentoring had unfavourable impacts that lead to low academic performance such as language problems, problems in adjustment to live outside home, lack of self-confidence, fear of failure and worrying about the future (6). Therefore, it is very important to ensure the implementation of mentoring programme is well planned considering the contributing factors (e.g., mentoring need from mentees' perspective).

In the context of the School of Medical Sciences, Universiti Sains Malaysia (USM), the mentoring programme was implemented since its first intake in 1990. In 2007, the mentoring programme was reviewed to become peer-mentoring programme (7), in which senior students were appointed as mentors to a group of students (6, 8, 9). In 2011, the peer mentoring was ceased due to inevitable reason particularly related to the curriculum change. Apart from that, it has

a limitation. For instance, mentees found it is hard to understand expectations of mentor as information shared was not clear with them due to difference personalities (10). Thus, the faculty-student mentoring becomes the main mentoring practice until now. The mentor responsibilities are to arrange meetings with the mentees at least twice per semester, to discuss any topics with mentees related to academic, personal and social matters, and to inform the mentees' examination results. Faculty members who volunteer to become mentors are trained through a "training of the trainer" workshop. The workshop focuses on the foundation and basics of guidance and counselling skills that are appropriate for becoming an effective mentor.

The workshop was conducted by a group of professional trainers which include a psychiatrist, psychologist, counsellor and medical educationists. However, since the inception of faculty-student mentoring programme in USM, there is a limited evidence to support its needs from mentees' perspective. For that reason, this study was carried out to address the prevalence of mentoring needs in the medical school from the perspective of medical students as mentees. The current data has shown that the medical students need soft skills, academic skills and social support from their mentor. All these can be realised through students' development programmes including mentoring service (11). More worrying, psychological problems such as stress, depression and anxiety (12) are significant during the medical training.

Although many medical students suffered from those problems, not all of them are keen to share their problems honestly due to attitude and lacking tool in alerting them. This has led to a situation where medical students are continuously suffering the problems which are actually can be avoided earlier. Therefore, a comprehensive data or information which concerned the need of mentoring activities for specific areas need to be highlighted. Besides that, series of prevention programme based on the

authenticity information can be managed properly. It cannot be denied that there are a few comparable programmes of mentoring and coaching services which are currently being offered, yet in the ambiguity atmosphere and if provided, it has planned based on assumptions of personal experiences of the mentors or person-in-charge in students' affair division itself. Consequently, the effectiveness of mentoring relationship is always questioned by the mentors and mentees itself. Considering these scenarios, the present study which is to assess the prevalence of mentoring needs among the phase 1 medical students is very timely.

MATERIALS AND METHODS

A cross-sectional study was conducted in June 2017 among the phase 1 (first- and second-year) medical students in the School of Medical Sciences, USM to assess the prevalence of mentoring needs of the participants. An inclusion criteria includes all registered medical undergraduate students in the pre-clinical years.

The sample size was determined using a formula, $n = (Z / \Delta)^2 PQ (13)$. With a 95% level of confidence, a 5% margin of error and a proportion of 0.5, the calculated sample size was 482. Finite population correction was applied (population size was 124), and the number of participants required for this study was 94. By taking into consideration of 20% non-response rate, the required sample size was 118 for both first- and second-year medical students, respectively. Eligible participants were recruited via convenience sampling method.

The USM-Mentoring Inventory (USM-MT-i) was designed after considering local cultures and values. It consists of two domains (communication and self-leadership skills, and learning skill) and 17 items with the whole Cronbach's alpha reliability value was 0.895. Participants were requested to rate each statement that

describes their need of mentoring using a 5-point Likert scale (1 = extremely not needed, 2 = not needed, 3 = less needed, 4 = needed and 5 = extremely needed). For communication and self-leadership skills, the possible score ranges from 9 to 45, and for learning skill, the possible score ranges from 8 to 40.

The USM-MT-i was utilised to collect the data. Prior to answering the questionnaire, respondents were briefed about a background of the study such as research objectives and time given. Informed consent was requested from the potential respondents. Data was gathered by guided self-administered questionnaire. Ethical approval has been obtained from the School of Medical Sciences and Human Research Ethics Committee, USM (USM/JPEM/25040152).

Data entry and analysis were conducted using IBM SPSS version 24. Demographic characteristics of all participants were presented according to groups as frequency and percentage. For each participant, score for communication and self-leadership skills was categorised into two groups with 9 to 35 marks as "mentoring need was not needed", and 36 to 45 marks as "mentoring need was needed". For learning skill score, it was categorised into "mentoring need was not needed" if the score obtained ranges from 8 to 31, and "mentoring need was needed" if the score obtained ranges from 32 to 45. For both groups of medical students, proportion of students requiring mentoring need was calculated and it was reported with its 95% of confidence interval, adjusted for finite population correction. Association between mentoring needs and year of study were assessed using χ^2 test with a two-sided alpha of 0.05 as the level of significance.

RESULTS

A total of 208 pre-clinical year medical students participated in this study (response rate of 83.9%). They were 123 and 85 of the first-year and the second-year medical

students, respectively. Both groups had more female compared to male students with majority of them were Malay. Majority of the participants were from urban area and not received scholarship during their study. Most of them having matriculation as the entry qualification (Table 1). Result shows that the prevalence of communication and self-leadership skills mentoring needs among

the first-year medical students was 26.8% (95% CI: 22.9%, 30.6%) and 18.8% (95% CI: 14.8%, 23.0%) among the second-year medical students. The prevalence of learning skill mentoring needs among the first-year medical students was 77.2% (95% CI: 73.6%, 81.0%) and second-year medical students was 63.5% (95% CI: 58.5%, 68.6%) (Table 2).

Table 1: Profile of study participants, $n = 208$

Variables	First year n (%)	Second year n (%)	Total n (%)
Gender			
Male	34 (27.6)	29 (34.1)	63 (30.0)
Female	89 (72.4)	56 (65.9)	145 (70.0)
Ethnic			
Malay	100 (81.3)	50 (58.8)	150 (72.0)
Chinese	9 (7.3)	15 (17.6)	24 (11.5)
Indian	9 (7.3)	17 (20.0)	26 (12.5)
Others	2 (1.6)	2 (2.4)	4 (2.0)
Missing*	3 (2.4)	1 (1.2)	4 (2.0)
Entry qualification			
HSC	4 (3.3)	1 (1.2)	5 (3.0)
Matriculation	54 (43.9)	43 (50.6)	97 (46.0)
Science foundation programme	42 (34.1)	26 (30.6)	68 (34.0)
Others	20 (16.1)	15 (17.1)	35 (17.0)
Origin			
Urban	90 (73.2)	64 (75.3)	154 (74.0)
Rural	29 (23.6)	24 (24.7)	54 (26.0)
Scholarship			
Yes	48 (39.0)	42 (49.4)	90 (43.3)
No	75 (61.0)	43 (50.6)	118 (56.7)

Note: *Participant(s) did not answer the question; HSC: Higher school certificate.

Table 2: Association between mentoring needs and year of the study ($n = 208$)

Domain	First-year n (%)		Second-year n (%)		χ^2 stat (df)	P-value
	Not needed	Needed	Not needed	Needed		
Communication and self-leadership skills	90 (73.2)	33 (26.8)	69 (81.2)	16 (18.8)	1.79 (1)	0.181
Learning skill	28 (22.8)	95 (77.2)	31 (36.5)	54 (63.5)	4.65 (1)	0.031

The prevalence of mentoring needs among the first-year medical students was found to be higher than the second-year in both of mentoring skill, which were 33 (26.8%) and 95 (77.2%) compared to 16 (18.8%) and 54 (63.5%). There was no significant association between year of study with communication and self-leadership skills mentoring needs ($\chi^2(1) = 1.79, P = 0.181$) and a significant association between year of study and learning skill mentoring needs ($\chi^2(1) = 4.65, P = 0.031$) (Table 2).

The assessment of association between demographic characteristics and mentoring needs revealed that entry qualification was significantly associated with the communication and self-leadership skills mentoring needs ($P < 0.001$), and ethnicity was significantly associated with the learning skill mentoring needs ($P = 0.003$) (Table 3 and 4).

Table 3: Association between demographics characteristics with communication and self-leadership skills mentoring needs ($n = 208$)

Demographic characteristics	Communication and self-leadership skills mentoring needs, n (%)		χ^2 stat (df)	P -value
	Not needed	Needed		
Gender				
Male	39 (61.9)	29 (34.1)	1.66 (1)	0.198 ^a
Female	110 (75.9)	56 (65.9)		
Ethnic				
Malay	114 (76.0)	36 (24.0)	-	0.057 ^b
Chinese	18 (75.0)	6 (25.0)		
Indian	23 (88.5)	3 (11.5)		
Others	1 (25.0)	3 (75.0)		
Missing*	3 (75.0)	1 (25.0)		
Entry qualification				
HSC	3 (60.0)	29 (40.0)	-	<0.001 ^b
Matriculation	73 (75.3)	24 (24.7)		
Science foundation programme	49 (72.1)	18 (26.5)		
Others	22 (62.9)	4 (11.8)		
Missing*	2 (66.7)	1 (33.3)		
Origin				
Urban	119 (77.3)	35 (22.7)	0.58 (1)	0.448 ^a
Rural	36 (72.0)	14 (28.0)		
Missing*	4 (100.0)	0 (0.0)		
Scholarship				
Yes	74 (82.2)	16 (17.8)	2.94 (1)	0.860 ^a
No	85 (72.0)	33 (28.0)		

Notes: ^a χ^2 test; ^bFisher exact test; HSC: Higher school certificate; *Participant(s) did not answer the question.

Table 4: Association between demographics characteristics with learning skill mentoring needs ($n = 208$)

Demographic characteristics	Learning skill mentoring needs, n (%)		χ^2 stat (df)	P-value
	Not needed	Needed		
Gender				
Male	24 (38.1)	39 (61.9)	0.11 (1)	0.913 ^a
Female	35 (24.1)	59 (28.4)		
Ethnic				
Malay	35 (23.3)	115 (76.7)	-	0.003 ^b
Chinese	14 (58.3)	10 (41.7)		
Indian	9 (34.6)	17 (65.4)		
Others	0 (0)	4 (100)		
Missing*	1 (25)	3 (75)		
Entry Qualification				
HSC	2 (40.0)	3 (60.0)	-	0.400 ^b
Matriculation	24 (24.7)	73 (75.3)		
Science foundation programme	19 (27.9)	49 (72.1)		
Others	13 (37.1)	22 (62.9)		
Missing*	1 (33.3)	2 (66.7)		
Origin				
Urban	44 (28.6)	110 (71.4)	0.04 (1)	0.847 ^a
Rural	15 (30.0)	35 (70.0)		
Missing*	0 (0.0)	4 (100.0)		
Scholarship				
Yes	28 (31.1)	62 (68.9)	0.59 (1)	0.443 ^a
No	31 (26.3)	87 (73.7)		

Notes: ^a χ^2 test; ^bFisher exact test; HSC: Higher school certificate; *Participant(s) did not answer the question.

DISCUSSION

Generally, the present study addressed the significant of mentoring in the early phase of the whole journey of medical training. The findings of respondents' study background were aligned with the variety of ethnic, origin, entry qualifications and gender (14). Thus, these features were actually considered as representative of the Malaysian medical students' characteristics (15).

The first-year medical students have more demand on mentoring for both domains: communication and self-leadership skills, and learning skill compared to the second-year medical students. This is not surprising as the first-year medical students is relative new, thus, they need more guide on the issues that are related to their life (16). Transition into higher education has been identified as one of the most stressful periods for learners (17). Thus, inviting them in a such mentoring programme is very crucial in order to help them with their personal and professional development.

Conversely, the second-year medical students already have some experience on how to make self-adjustment with the new environment after one year stay at the university. However, the second-year medical students still need guidance on the same aspects such as the need of continuous guidance from their mentor (15). Consistent with the high challenges in academic matters, competence in examination was the prevalent need of the phase 1 of medical students. This is because scoring high marks in the series of examinations are crucial in order to complete their medical training successfully. Moreover, scoring high marks in short essay question and single best answer are not an easy task for all medical students. This is because the aims of assessments are to explore the students' high order thinking skills, support clinical reasoning and at the same time have a solid foundation of knowledge (2, 4, 15). Thus, understanding the students' challenges in academic will facilitate their learning performance (18).

CONCLUSION

The prevalence of mentoring need was high amongst the early phase of the medical students in the both aspects: communication and self-leadership skills, and learning skill. These areas must be prioritised in the activities calendar so that such group of medical students consuming sufficient space to extend their potential. To make it a reality, all lecturers, mentors and parties that are related to the medical students' academic development must be aggressive to promote activities which are able to cultivate students' knowledge and skills on both aspects. Thus, a specific unit which is acted as a student's development centre is strongly recommended in order to provide an excellence service to the students. Apart from that, it is suggested that a similar study should be done on the clinical year students to compare the result.

REFERENCES

1. Kennett P, Lomas T. Making meaning through mentoring: mentors finding fulfilment at work through self-determination and self-reflection. *International Journal of Evidence Based Coaching and Mentoring*. 2015;13(2):29–44.
2. Zaidi NLB, Grob KL, Monrad SM, Kurtz JB, Tai A, Ahmed AZ, et al. Pushing critical thinking skills with multiple-choice questions: does Bloom's taxonomy work? *Acad Med*. 2018;93(6):856–9. <https://doi.org/10.1097/ACM.0000000000002087>
3. Gokhale A, MaChina K. Guided online group discussion enhances student critical thinking skills. *International Journal on E-Learning: Corporate, Government, Healthcare and Higher Education*. 2018;17:157–73.
4. Coates WC. Being a mentor: what's in it for me? *Acad Emerg Med*. 2012;19(1):92–7. <https://doi.org/10.1111/j.1553-2712.2011.01258.x>
5. Erickson LD, McDonald S, Elder GH. Informal mentors and education: complementary or compensatory resources? *Sociology of Education*. 2009;82(4):344–67. <https://doi.org/10.1177/003804070908200403>
6. Cheah WL, Hazmi H, Ching BJH, Jia YC, Mohd Nazif NNN, Mohd Kamil SN. Peer mentoring among undergraduate medical students: experience from Universiti Malaysia Sarawak. *Education in Medicine Journal*. 2015;7(1):45–54. <https://doi.org/10.5959/eimj.v7i1.331>
7. Mohammad JAM, Abdul Rahim AF, Mat Nor MZ, Ahmad R, Yusoff MSB. Supportive mentoring behaviours in a public medical school. *International Journal of Mentoring and Coaching in Education*. 2019;8(2):102–19. <https://doi.org/10.1108/IJMCE-12-2017-0079>

8. Yusoff MSB, Abdul Rahim AF, Rahman Noor A, Yaacob NA, Mohd Hussin ZA. Evaluation of medical students' perception towards the BigSib programme in the School of Medical Sciences, USM. *Education in Medicine Journal*. 2010;2(1):2–11. <https://doi.org/10.5959/eimj.2.1.2010.or1>
9. Yusoff MSB, Rahim AFA, Noor AR, Yaacob NA, Hussin ZAM. The BigSib students' peer group mentoring programme. *Med Educ*. 2009;43(11):1106. <https://doi.org/10.1111/j.1365-2923.2009.03459.x>
10. Leidenfrost B, Strassnig B, Schabmann A, Spiel C, Carbon CC. Peer mentoring styles and their contribution to academic success among mentees: a person-oriented study in higher education. *Mentoring and Tutoring*. 2011;19(3):347–64. <https://doi.org/10.1080/13611267.2011.597122>
11. Brown S. Is counselling necessary? Making the decision to have an abortion. A qualitative interview study. *Eur J Contracept Reprod Health Care*. 2013;18(1):44–8. <https://doi.org/10.3109/13625187.2012.750290>
12. Hamaideh SH. Stressors and reactions to stressors among university students. *Int J Soc Psychiatry*. 2011;57(1):69–80. <https://doi.org/10.1177/0020764009348442>
13. Daniel WW. *Biostatistics: a foundation for analysis in the health sciences*. Biometrics. US: Wiley; 1995. <https://doi.org/10.2307/2533362>
14. Sai A, Furusawa T, Othman MY, Tomojiri D, Wan Zaini WFZ, Tan CSY, et al. Sociocultural factors affecting drive for muscularity among male college students in Malaysia. *Heliyon*. 2020;6(7):e04414. <https://doi.org/10.1016/j.heliyon.2020.e04414>
15. Mat Nor ZM, Yusoff SBM, Abdul Rahim FA. Characteristics of mentoring programmes in the early phase of medical training at the Universiti Sains, Malaysia. *Journal of Taibah University Medical Sciences*. 2017;12(4):343–8. <https://doi.org/10.1016/j.jtumed.2017.01.003>
16. Sambunjak D, Straus SE, Marušić A. Mentoring in academic medicine: a systematic review. *JAMA*. 2006;296(9):1103–15. <https://doi.org/10.1001/jama.296.9.1103>
17. Akinla O, Hagan P, Atiomu W. A systematic review of the literature describing the outcomes of near-peer mentoring programs for first year medical students. *BMC Med Educ*. 2018;18(1):98. <https://doi.org/10.1186/s12909-018-1195-1>
18. Chonkar SP, Ha TC, Chu SSH, Ng AX, Lim MLS, Ee TX, et al. The predominant learning approaches of medical students. *BMC Med Educ*. 2018;18(1):17. <https://doi.org/10.1186/s12909-018-1122-5>