Original Article

DOI: 10.7860/JCDR/2018/37535.12354

Public Health Section

Knowledge, Attitude and Practice of Smoking among Pharmacy Students: Findings from a Public University

ABDULKAREEM MOHAMMED AL-SHAMI[1], TAREK MOHAMED ELSAYED[2], RAMADAN MOHAMED ELKALMI[3], SHAZIA QASIM JAMSHED[4], EMAN ALI DYAB[5], MOHAMMAD JAMSHED SIDDIQUI[6], ABDUL RAHMAN MAHMOUD FATA NAHAS[7]

ABSTRACT

Introduction: Smoking causes substantial preventable morbidity, mortality and financial burdens. It is the main risk factor for many diseases and a significant cause of death. Smoking prevalence is high internationally and in Malaysia, especially among males. Smoking cessation is essential to reduce tobacco-related morbidity and mortality.

Aim: To evaluate knowledge, attitude towards and practice of smoking among pharmacy students in the International Islamic University Malaysia (IIUM).

Materials and Methods: A cross-sectional study was conducted using a validated structured self-administered questionnaire among a sample of IIUM pharmacy students (n=251) from November 2012 to December 2012. Descriptive and inferential statistics were used to summarise data and to examine the relationship between variables.

Results: A total of 251 IIUM pharmacy students have participated in the survey. The median age of the participants was 21-23 years; 23.9% of them were males and 76.1% were females. The percentage of current smokers and ex-smokers was 0.4%, 0.8%, respectively. About 43% of the respondents had a good knowledge (score >16), more than half of them had a positive attitude (score >17), and about 38.4% had a good practice (score >11).

Conclusion: Smoking prevalence among pharmacy students in IIUM is very low. However, conducting training and educational programs to improve knowledge, attitudes and practice of pharmacy students is highly recommended to assist their contribution to smoking cessation interventions in the future.

Keywords: Nicotine replacement, Physical and psychological addiction, Tobacco products

INTRODUCTION

Smoking is the principal cause of health deterioration in normal healthy subjects, which can be avoided [1-6]. It is considered as the main risk factor for many fatal diseases such as cardiovascular diseases, chronic respiratory diseases and lung cancer [2,7,8]. Internationally, it is responsible for one death case out of ten among adults [2] and leads to more than four million death cases per year [6,7,9]. If no intervention takes place, this figure will probably reach ten million deaths annually by 2025 [1,2,7,8], with the largest proportion (80%) from developing nations [4,6,8]. People smoke on routine basis and face extreme difficulty if decision to quit was taken [9-11] due to the physical and psychological addiction to nicotine, the main active ingredient in tobacco products [4,11].

In Malaysia, smoking is considered as a normal habit among male adults [12]. The tobacco use prevalence is high particularly among men and adolescents [7,8,11]. A recently published report showed that the prevalence of smoking among Malaysian population aged 15 years and above was approximately 22.8%. 43.0% (4.85 million) of men and 1.4% (143,566) of women, more than half of current smokers (60%), were categorised as heavy smokers (≥15 stick of cigarettes). Approximately, 37.1% were exposed to passive smoking at home. Tobacco control is regulated by the Control for Tobacco Products Regulation (CPTR) 2004. They included prohibition of smoking in smoke free places and underage smoking, ban on tobacco advertising, promotion and sponsorship, in addition to regulating tobacco packaging, labelling, cigarette standard emission and other issues [13].

Smoking cessation is the fundamental way to reduce morbidity and mortality secondary to tobacco use [1,6,11]. Healthcare practitioners can play a vital role to boost smoking cessation among patients [3,14]. A brief and humble counselling conducted during patients' visit may increase the smoking cessation rate [1,15,16]. Compared to other healthcare professionals, pharmacists are in a distinct position to initiate habitual alteration among public towards smoking [17]. This position was linked to many factors. Pharmacists are the most accessible by public, as prior appointment is not required, at no extra cost. Moreover, establishment of long-term trusted relationship with the patient and the availability of enormous pharmacologic smoking cessation options including over-the-counter nicotine replacement formulations available in community pharmacies [1,15,17,18].

Healthcare practitioners in developing nations, represent a significant mediator in the battle against smoking, because they are esteemed in community as trustworthy sources of health-related information [19]. Pharmacy students are the future community pharmacists. Later, they could play an important role in smoking cessation by giving advice to smokers after receiving proper and specific training on smoking cessation strategies. Therefore, with the interest in health hazards of smoking, this study investigated cigarette smoking among pharmacy students of IIUM. The knowledge, practice and attitude as well as the factors associated with cigarette smoking among pharmacy students are discussed and strategies which need to be implemented to control smoking among them in the future are presented.

MATERIALS AND METHODS

This was a cross-sectional study. For data collection, a validated anonymous structured self-administered questionnaire was used, which was written in English language and consisted of 49 items divided in to four major sections. Section I included 12 items about participants' socio-demographic data such as age, gender, smoking behaviour, etc. Smoking behaviour was categorised into non-smoker, smoker or ex-smoker. A smoker is defined as a person who

is currently smoking while a person who already stopped smoking for at least one year is considered as an ex-smoker. Section II included 12 multiple choice questions about participants' knowledge about tobacco and smoking. The participants were asked to select one out of three options ("yes", "no" or "I don't know"). Section III included 14 items that focused mainly on participants' attitude towards tobacco and smoking. In this section, the participants were requested to show their level of agreement with the statements using three-point Likert scale ("agree", "disagree" or "unsure"). Section IV included eleven items with the same format as section II questions (except the 11th item) and focused on participants' smoking practice. The 11th question was open-ended where the participants were asked to recommend strategies which could help to reduce the prevalence of cigarette smoking among pharmacy students. To validate and evaluate the questionnaire, a pilot study was conducted with the participation of 40 third year pharmacy students. The reliability of the questions was tested using the reliability test.

The study population was pharmacy students in the International Islamic University Malaysia (IIUM) from November 2012 to December 2012. The sample size was estimated based on total number of IIUM pharmacy students, which were 439 students. All registered students of year one, two, three and four in the Kulliyyah of Pharmacy were eligible for study participation. Only students who were absent during data collection or rejected to participate were excluded from the study.

The sample size calculated by Raosoft sample size calculator, to achieve a confidence level more than 95% and margin of error less than 5% when the response distribution is 50%, was 206. The participants were chosen by using simple random sampling technique.

An approval to conduct the study was obtained from the Department of Pharmacy Practice, Kulliyyah of Pharmacy, IIUM, since the study was exempted from approval by the Ethics Committee of IIUM. A total of 330 questionnaire forms were distributed to pharmacy students and collected by the end of the day. The additional questionnaires were included to make up for the drop out of participation. Prior to questionnaire distribution, the nature and the purposes of the study were explained to participants and informed consent was obtained. Of the 330 questionnaires distributed, 280 questionnaires were received; however, 29 of the received questionnaires were excluded because of incompleteness.

STATISTICAL ANALYSIS

Statistical Package for Social Science (SPSS) 18.0 software package (SPSS Inc., Chicago, IL) was used to analyse the data. Descriptive statistics were used to summarise the data. Categorical data are presented as percentages and frequencies. Median split method was applied to categorise respondents as having either poor or good knowledge about smoking and either positive or negative attitude towards it. Inferential statistics were used to examine the relationships between variables. Mann-Whitney test and Kruskal-Wallis test were used to test the difference in knowledge, practice, attitude or total Knowledge, Attitude and Practice (KAP) scores based on respondent demographics when the number of groups are two and more than two, respectively. All statistical tests were two-tailed and maintained a significance level ($\alpha \leq 0.05$) and a confidence interval ≥95%. Answers to open ended questions were compiled, sorted out and post-coded.

RESULTS

The majority of respondents were in the age range of 21-23 years (183, 72.9%), female sex (191, 76.1%), Malay race (248, 98.8%), and single (246, 98%). This reflects the demography of student population in this faculty. Only one student (0.4%) of the respondents was a smoker. Forty nine (19.5%) of the respondents claimed that their brothers were smokers and 33 (13.1%) students claimed that their fathers were smokers. About half of the respondents did not have any family members who are smoking. More details are presented in [Table/Fig-1].

Characteristic	Number (N)	Percentage (%)	Characteristic	Number (N)	Percentage (%)
Age			**Marital status**		
≤20	57	22.7	Single	246	98.0
21-23	183	72.9	Married	5	2.0
≥24	11	4.4	Divorced	0	0.0
Gender			**Close friend smoker**		
Male	60	23.9	No	199	79.5
Female	191	76.1	Yes	52	20.5
Ethnicity			**Family smoker**		
Malay	248	98.8	Yes	100	39.8
Chinese	0	0.0	No	128	51
Indian	1	0.4	Not sure	1	0.4
Other	2	0.8	Missing	22	8.8
Source of funding			**Smoking behaviour**		
Parents	38	15.0	Smoker	1	0.4
Sponsorship	213	85.0	Ex-smoker	2	0.8
			Non-smoker	248	98.8

[Table/Fig-1]: Demographic characteristic of respondents.

As shown in [Table/Fig-2], the median knowledge score was 16. The respondents with knowledge score of ≤16 were classified as having poor knowledge, while those with knowledge score of >16 were classified as having good knowledge [Table/Fig-3]. There was a significant difference in smoking knowledge level based on study year (p=0.001). Second year students showed the highest proportion of students with poor smoking knowledge (47, 73.4%), while fourth year students showed the highest proportion with good smoking knowledge (35, 56.2%) compared to students from other study years. More female respondents have good knowledge (88, 46.1%) compared to male respondents (20, 33.3%). However, the difference is not statistically significant (p=0.250).

Variables	N	Minimum	Maximum	Mean	SD	Median
Total Knowledge score	251	12	20	16.23	1.16	16
Total Attitude score	251	14	25	17.51	1.66	17
Total Practice score	251	10	17	11.24	1.44	11
Total KAP	251	36	52	44.93	2.88	45

[Table/Fig-2]: Descriptive statistics of knowledge, attitude and practice scores towards smoking.

Variable	Knowledge on Smoking				Total	
	Poor (≤16)		Good (>16)			
	N	%	N	%	N	%
Level of study						
Year 1	32	53.3	28	46.7	60	23.9
Year 2	47	73.4	17	26.6	64	25.5
Year 3	35	55.6	28	44.4	63	25.1
Year 4	29	43.8	35	56.2	64	25.5
Total	143	57.0	108	43.0	251	100.0
p-value=0.001*						
Gender						
Male	40	66.7	20	33.3	60	23.9
Female	103	53.9	88	46.1	191	76.1
Total	143	57.0	108	43.0	251	100.0
p-value=0.250†						

[Table/Fig-3]: Relationship between smoking knowledge score. with the level of study and gender.
*Kruskal-Wallis test; †Mann-Whitney Test

Students have been categorised as having either positive or negative attitude based on the median of the attitude score (≤17 or >17, respectively) [Table/Fig-4]. There is no statistically significant difference between the study year and attitude towards smoking (p=0.644). First year students showed the most positive attitude (37, 61.7%) compared to students from other years. In contrast, more than half of second year students showed negative attitude (33, 51.6%) towards smoking. The evaluation of attitude towards smoking showed a statistically significant difference between genders (p=0.047), as females showed more positive attitude (113, 59.2%) compared to males (27, 45.0%).

Characteristic	Attitude on smoking				Total	
	Positive (≤17)		Negative (>17)			
	N	%	N	%	N	%
Level of study						
Year 1	37	61.7	23	38.3	60	23.9
Year 2	31	48.4	33	51.6	64	25.5
Year 3	35	55.6	28	44.4	63	25.1
Year 4	37	57.9	27	42.1	64	25.5
Total	140	55.8	111	44.2	251	100.0
p=0.644						
Gender						
Male	27	45.0	33	55.0	60	23.9
Female	113	59.2	78	40.8	191	76.1
Total	140	55.8	111	44.2	251	100.0
p=0.047†						

[Table/Fig-4]: Relationship between attitude score with level of study and gender.
*Kruskal-Wallis test; †Mann-Whitney test

Based on the median of smoking practice score, students were categorised as either having poor or good practice (≤11 or >11, respectively) [Table/Fig-2]. There was no significant difference in smoking practice based on level of study or gender (p=0.544, p=0.071, respectively) [Table/Fig-5]. Fourth year students showed the highest percentage with poor smoking practice (44, 68.8%), while third year students showed the highest percentage with good smoking practice (27, 42.9%), compared to other years of study. A higher percentage of students with good smoking practice was observed among males (28, 46.7%) compared to females (68, 35.6%).

Characteristic	Practice on Smoking				Total	
	Poor (≤11)		Good (>11)			
	N	%	N	%	N	%
Level of study						
Year 1	39	63.9	22	36.1	61	24.3
Year 2	36	57.1	27	42.9	63	25.1
Year 3	36	57.1	27	42.9	63	25.1
Year 4	44	68.8	20	31.2	64	25.5
Total	155	61.8	96	38.2	251	100.0
p-value=0.544*						
Gender						
Male	32	53.3	28	46.7	60	23.9
Female	123	64.4	68	35.6	191	76.1
Total	155	61.68	96	38.2	251	100.0
p-value=0.071†						

[Table/Fig-5]: Relationship between level of study, gender and smoking practice score.
*Kruskal-Wallis; †Mann-Whitney Test

Based on the cumulative score of KAP, students were categorised as either having poor or good KAP (≤45 or >45, respectively) [Table/Fig-2]. There was no difference in KAP score based on the level of study or gender (p=0.327 and p=0.120, respectively) [Table/Fig-6]. Third year students showed the highest percentage of students with good KAP (30, 47.6%). A higher percentage of students with good KAP was observed among male (29, 48.4%) compared to female students (75, 39.3%).

Characteristic	Total KAP on smoking				Total	
	Poor (≤45)		Good (>45)			
	N	%	N	%	N	%
Level of study						
Year 1	36	60.1	24	39.9	60	23.9
Year 2	43	67.3	21	32.7	64	25.5
Year 3	33	52.4	30	47.6	63	25.1
Year 4	35	54.7	29	45.3	64	25.5
Total	147	58.6	104	41.4	251	100.0
p=0.327*						
Gender						
Male	31	51.6	29	48.4	60	23.9
Female	116	60.7	75	39.3	191	76.1
Total	147	58.6	104	41.4	251	100.0
p-value=0.120†						

[Table/Fig-6]: Relationship between level of study, gender and total KAP score.
*Kruskal-Wallis; †Mann-Whitney Test

DISCUSSION

This study revealed that only 0.4% of IIUM pharmacy students are smokers. Other studies on smoking among medical students showed higher smoking prevalence (5.07% in Lao People's Democratic Republic [20], 25.8% in Lebanon [21] and 17.6% in Saudi Arabia [22]). Similarly, smoking prevalence among young adults in Pakistan was reported to be 23% [2]. According to Azhar A et al., smoking prevalence among medical students is expected to be low because they have a greater chance of exposure to awareness programs and greater knowledge regarding the risk of smoking [19]. The reported low smoking prevalence among IIUM students is probably due to the policy strictly banning smoking in IIUM campus. With regards to gender, the smoking prevalence among males was higher than females, although overall prevalence among study sample were low compared to previous scholars studies, as majority of the sample were females. Similar trend was reported in previous studies [23-25]. This may be attributed to the social norms [24]. More than one third of participants reported that at least one of their siblings were smokers, while less than quarter of the participants has a close friend who is smoking. This is an important factor that should be considered because smoking status among family members and peers, more likely, will encourage them to become smokers in the future, which was reported by few previous studies [2,26,27].

Less than half of respondents appeared to have a good knowledge about smoking. They knew that nicotine is the main component of cigarettes, which reacts with body receptors and leads to addiction and development of diseases such as cancers and fetal developmental abnormalities [11]. Majority of the fourth year students had good knowledge compared to other students. This probably is due to the knowledge acquired through previous study years. Zhu t et al., reported that increasing the level of knowledge about smoking may provide awareness to those students about smoking hazards, where students that have medical education have a great impact towards reducing cigarette smoking compared to those who do not have any medical education [24].

On the other hand, more than half of the participants had positive attitude towards anti-smoking behaviour. Female participant's had a higher percentage of students with positive attitude towards anti-smoking compared to male student. Several studies had documented no female smokers at all, while others revealed a significantly lower smoking prevalence among female students [28].

Study participants were noticed to have poor practice regarding establishing a new initiative towards smoking prevention, smoking free policy and smoking cessation programs. Therefore, to promote smoking cessation among pharmacy students in IIUM, it is suggested to conduct smoking cessation training programs and provide counselling sessions to the smokers. Awareness would be changed by health education methods using individual interview, group discussion and from anti-smoking campaign at the university. Furthermore, the presence of smoking ban policy is not enough to erradicate smoking. Hence, the level of students' compliance with the smoking policy in the campus should be monitored to achieve complete tobacco control. Moreover, the price of cigarettes pack should be increased as the current price is still reasonable for students.

LIMITATION

The findings of this study should be interpreted with caution as they are only related to the IIUM pharmacy students and cannot be generalised to other colleges in Malaysia. The data were collected by using self-administered survey, which may be limited by respondent bias. The smoking is considered as socially unacceptable action, as a result under-reporting could not be ruled out.

CONCLUSION

Smoking prevalence among IIUM pharmacy students was very low as majority was female participants, which might be considered a limitation of the current study. Also, the majority of students showed positive attitude towards smoking and good smoking practice. However, most of them had a poor smoking knowledge. This can be improved by targeted training and educational programs. Starting counselling sessions with smokers could also change their attitude towards smoking and help them to quit.

Funding: This study was funded in part by Research Initiative Grant Scheme [RIGS 17-005-0580] from International Islamic University Malaysia (IIUM).

ACKNOWLEDGEMENTS

The authors are greatly thankful to the third year students group who participated in conducting this research project.

REFERENCES

[1] El Hajj MS, Al Nakeeb RR. Smoking cessation counseling in Qatar: community pharmacists' attitudes, role perceptions and practices. International Journal of Clinical Pharmacy. 2012;34(4):667-76.
[2] Ahmed R, Rizwan-ur-Rashid MP, Ahmed SW. Prevalence of cigarette smoking among young adults in Pakistan. J Pak Med Assoc. 2008;58(11):597-601.
[3] Awopeju OF, Erhabor G, Awosusi B, Awopeju O, Adewole O, Irabor I. Smoking prevalence and attitudes regarding its control among health professional students in South Western Nigeria. Annals of Medical and Health Sciences Research. 2013;3(3):355-60.
[4] Swe KMM, Bhardwaj A. Knowledge and practice of first year medical students about smoking. International Journal of Collaborative Research on Internal Medicine & Public Health. 2012;4(5):785-95.
[5] Fried JL, Reid BC, DeVore LE. A comparison of health professions student attitudes regarding tobacco curricula and interventionist roles. Journal of Dental Education. 2004;68(3):370-77.
[6] Wilson LM, Avila Tang E, Chander G, Hutton HE, Odelola OA, Elf JL, et al. Impact of tobacco control interventions on smoking initiation, cessation, and prevalence: a systematic review. Journal of Environmental and Public Health. 2012;2012:961724.
[7] Al-Naggar RA, Jawad AA, Bobryshev YV. Prevalence of cigarette smoking and associated factors among secondary school teachers in malaysia. Asian Pacific Journal of Cancer Prevention. 2012;13(11):5539-43.
[8] Al-Naggar RA, Al-Dubai SAR, Al-Naggar TH, Chen R, Al-Jashamy K. Prevalence and associated factors of smoking among Malaysian university students. Asian Pac J Cancer Prev. 2011;12:619-24.
[9] Sharif L, Abeer Q, Alkafajei A. Knowledge, attitude and practice of university students towards smoking in Irbid, Jordan. Journal of Public Health and Epidemiology. 2013;5(1):29-36.
[10] Lim K, Sumarni M, Kee C, Christopher V, Noruiza Hana M, Lim K, et al. Prevalence and factors associated with smoking among form four students in Petaling District, Selangor, Malaysia. Trop Biomed. 2010;27(3):394-403.
[11] Ministry of Health Malaysia, Clinical practice guidelines on treatment of tobacco use and dependence. 2003;2003.
[12] Lim K, Amal N, Hanjeet K, Mashod M, Wan Rozita W, Sumarni M, Hadzrik N. Prevalence and factors related to smoking among secondary school students in Kota Tinggi District, Johor, Malaysia. Trop Biomed. 2006;23(1):75-84.
[13] Institute for Public Health (IPH), National health and morbidity survey 2015-Report on smoking status among Malaysian adults. 2015;01-48.
[14] Sinclair HK, Bond CM, Lennox AS, Silcock J, Winfield AJ, Donnan PT. Training pharmacists and pharmacy assistants in the stage of change model of smoking cessation: a randomised controlled trial in Scotland. Tobacco Control. 1998;7(3):253-61.
[15] Brewster JM, Ashley MJ, Laurier C, Dioso R, Victor JC, Ferrence R, et al. On the front line of smoking cessation: pharmacists' practices and self-perception. Canadian Pharmacists Journal/Revue des Pharmaciens du Canada. 2005;138(3):32-38.
[16] Waheedi M, Al-Tmimy AM, Enlund H. Preparedness for the smoking cessation role among health sciences students in Kuwait. Medical Principles and Practice. 2011;20(3):237-43.
[17] Vitale F. Professional intervention for smoking cessation: the contribution of the pharmacist. European journal of public health, 2000;10(suppl_3):21-24. doi: 10.1093/eurpub/10.suppl_3.21.
[18] Ashley MJ, Victor JC, Brewster J. Pharmacists' attitudes, role perceptions and interventions regarding smoking cessation: Findings from four Canadian provinces. Chronic Diseases and Injuries in Canada. 2007;28(1-2):20-28.
[19] Azhar A, Alsayed N. Prevalence of smoking among female medical students in Saudai Arabia. Asian Pacific Journal of Cancer Prevention. 2012;13(9):4245-48.
[20] Sychareun V, Hansana V, Choummanivong M, Nathavong S, Chaleunvong K, Durham J. Cross-sectional survey: smoking among medical, pharmacy, dental and nursing students, University of Health Sciences, Lao PDR. BMJ Open. 2013;3(8):e003042.
[21] Chidiac A, Tamim H, Kanso M, Tfayli A. Smoking among Lebanese medical students: Prevalence and attitudes. Annals of Thoracic Medicine. 2016;11(3):183-90.
[22] Al-Kaabba AF, Saeed AA, Abdalla AM, Hassan HA, Mustafa AA. Prevalence and associated factors of cigarette smoking among medical students at King Fahad Medical City in Riyadh of Saudi Arabia. Journal of Family and Community Medicine. 2011;18(1):8.
[23] Owonaro P, Eniojukan J. Cigarette smoking practices, perceptions and awareness of government policies among pharmacy students in Niger Delta University in South-South Nigeria. UK Journal of Pharmaceutical and Biosciences. 2015;3(5):20-29.
[24] Zhu T, Feng B, Wong S, Choi W, Zhu S-H. A comparison of smoking behaviours among medical and other college students in China. Health Promotion International. 2004;19(2):189-96.
[25] Mandil A, BinSaeed A, Ahmad S, Al-Dabbagh R, Alsaadi M, Khan M. Smoking among university students: A gender analysis. Journal of Infection and Public Health. 2010;3(4):179-87.
[26] Phengsavanh A, Sychareun V, Hansana V, Phommachnah MS, Prasisombath K, Velasco MG. Smoking behaviour and tobacco control among medical doctors in Lao PDR. 2008.
[27] Elamin OEO, Elamin SEO, Dafalla BAA, El-Amin ME, Elsiddig AA. Cigarette smoking among medical students in The National Ribat University, Sudan. Sudanese Journal of Paediatrics. 2013;13(2):45-51.
[28] Smith DR, Leggat PA. An international review of tobacco smoking among medical students. Journal of Postgraduate Medicine. 2007;53(1):55.

PARTICULARS OF CONTRIBUTORS:
1. Assistant Professor, Department of Pharmacy Practice, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.
2. Assistant Professor, Department of Pharmacy Practice, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.
3. Assistant Professor, Department of Pharmacy Practice, University Teknologi MARA, Punchak Alam, Selangor, Malaysia.
4. Assistant Professor, Department of Pharmacy Practice, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.
5. Lecturer, Department of Pharmaceutical Sciences, Tripoli University, Tripoli, Libya.
6. Assistant Professor, Department of Pharmaceutical Chemistry, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.
7. Assistant Professor, Department of Pharmacy Practice, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Abdul Rahman Mahmoud Fata Nahas,
Jalan, Sultan Hj Ahmad Shah-25200-Kulliyyah of Pharmacy, International Islamic University Malaysia (IIUM),
Kuantan, Pahang, Malaysia.
E-mail: abd_mfn@hotmail.com

FINANCIAL OR OTHER COMPETING INTERESTS: As mentioned above.

Date of Submission: **Jun 20, 2018**
Date of Peer Review: **Jul 18, 2018**
Date of Acceptance: **Sep 20, 2018**
Date of Publishing: **Dec 01, 2018**