Level of Self-Esteem Among Muslim Medical Students and Its Association with Religiosity

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Abstract

Medicine is one of the most difficult study course and profession that faces many psychological challenges. A high level of self-esteem is needed to cope with such challenges, and religiosity is seen as one of the approaches to increase one's self-esteem especially among Muslim physicians. *Aims & Objectives:* This study aims to measure the level of self-esteem among medical students and its association with religiosity. *Methodology:* This online cross-sectional study was conducted among 178 International Islamic University Malaysia (IIUM) Kuantan medical students using validated 10-items IIUM Religiosity Scale (IIUMReIS), and 10-items Rosenberg Self-Esteem Scale (RSES). Descriptive statistics was used to measure the level of self-esteem while chi-square, Mann-Whitney U test, Spearman's correlation, univariate, and multivariate logistic regression were used to explore the association between self-esteem with the predictors. *Results and findings:* More than half of the students (58.5%) have a high level of self-esteem. They scored an average of 35 (IQR = 6) in terms of religiosity. Those with higher religiosity were predicted to have significantly high self-esteem (r = 0.345). Other significant factor includes frequency of supererogatory prayer where daily practice has 0.3 lower odds of having low self-esteem. (95% CI = 0.11, 0.85, p = 0.05) Majority of the students have a high level of self-esteem. Implications suggest the role of religiosity and the impact of supererogatory prayer. Early and consistent strengthening of self-esteem via motivational, spiritual, and religious programs may be advisable.

Keywords: *medical students, self-esteem, mental health, religiosity, prayer.*

1. Introduction

Self-esteem is defined as a favourable or unfavourable attitude about oneself and overall evaluation of one's own thoughts and feelings toward oneself (Rosenberg, 1965). It is an important component to global mental health problems. Self-esteem plays a fundamental role in mental and psychological well-being (Abdel-Khalek, 2016) as well as a critical factor to determine an individual's success in social adjustment (Park & Park, 2019). Additionally, according to Boyd et al. (2014) it is positively related to mental health, social adaptation, and life's quality. Students of healthcare profession regularly face a high level of pressure and are susceptible to mental disorders. Medicine in particular is a challenging academic course that faces many psychological hardships along its course. Studies had shown that medical students faces a high level of stress and anxiety (Yusoff et al., 2010; Moreira de Sousa et al., 2018; Gan & Yuen Ling, 2019) as compared with other academic courses, and high level of self-esteem is needed for students to cope with such psychological demand (A. Abdel-Khalek, 2016; Sa et al., 2019).

Several studies had been conducted in various programmes to investigate the level of self-esteem among students in Malaysia and its associated factors. A study that was conducted in a Malaysian public university reported that the level of self-esteem among students is high (Hong et al., 2015). Another recent study in another Malaysian public university mentioned that the level of self-esteem among undergraduate students was just average (Ahmat et al., 2018). There is also increasing evidence on the association between sociodemographic background and self-esteem (Haq, 2016). Nevertheless, according to Ahmat et al. (2018), no significant difference was observed between the self-esteem level and the demographic variables.

There is also a growing interest in conducting research on religiosity. In Islam, the definition of religiosity is related to the bodily action or human activity (Islam), the mind or understanding of God (Iman), and the spirit or actualisation of virtue and goodness (Ihsan) (Mahudin et al., 2016). Moreover, according to Ellor & McGregor (2011), religiosity indicates the significance of religion in the life of the individual. The linkage between religiosity and self-esteem has been studied over the past decades. Sa'ari & Harun (2018) claimed that in Islamic psycho-spiritual discipline, self-esteem development is a combination of revelation from God sources and empirical from human being's efforts; the benefits can be seen in temporal aspect of one's life and even in eternal life as Islam emphasizes the ultimate goal of life are success and happiness in the hereafter. Nonetheless, the awareness of Muslims into the construct of religiosity itself has remained arguable.

From the Islamic perspective, religiosity is an important coping mechanism that should be practised among Muslims (Salleh et al., 2015). Studies had shown that the relationship of religiosity is positively significant with self-esteem (Achour et al., 2017; Aghababaei & Tekke, 2018). Therefore, this study aimed to ascertain the level of self-esteem and the level of religiosity among Muslim medical students, to elicit the practices related with religiosity and to determine the association between self-esteem and religiosity.

2. Literature Review

Level of Self-esteem Among Students

A study done across 53 nations of 16,998 participants in an International Sexuality Description Project (ISDP) found that all nations scored above the self-esteem score midpoint, with the mean value of 30.85 (SD=4.82), which showed general positive self-esteem may be culturally universal (Schmitt & Allik, 2005). In a study among dental and medical students in Saudi Arabia, approximately one-fourth of students have low self-esteem (Aboalshamat et al., 2017). Furthermore, Basco & Han (2016) reported that Korean University students have a moderate level of self-esteem. On the other hand, according to Acharya Pandey and Chalise (2017), nearly 78% Nepalese nursing students suffer from low self-esteem. Nursing students in a study done in Spain reported to score 29.55 (SD=4.34) on self-esteem with male students having significantly higher scores than female students (Aradilla-Herrero et al., 2014). Peterson-Graziose et al. (2013) found that 82% of associate graduate nursing students have high self-esteem according to a study in New York. Meanwhile, a study in Iran provided that 75.6% of medical students have moderate levels of self-esteem and 25.6% have high levels of self-esteem (Salarvand et al., 2018).

Malaysia, based on Schmitt and Allik (2005) scored closely above midpoint with 29.83 (SD = 3.42) among the ISDP. In a study done among pharmacy students in Universiti Teknologi MARA (UiTM) Puncak Alam, Malaysia, the level of self-esteem was just average 17.30 (SD = 3.88) with score ranged from 0 to 30 (RSES) (Ahmat et al., 2018). Similarly, Fakaruddin and Tharbe (2018) found that Malaysian public university students have a medium level of self-esteem. The mean score is 18.30 with score ranged from 0 to 30 (RSES). Another study done among undergraduates of faculty of health sciences and faculty of medicine in Universiti Kebangsaan Malaysia (UKM) reported that the mean score for self-esteem scales was 17.44 (SD = 3.44) with score ranged from 0 to 30 (RSES) (Rosli et al., 2012). Sherina et al., (2008) who studied self-esteem among secondary school students in Klang reported that the overall mean self-esteem score was 27.65 (SD = 3.49) with score ranged from 10 to 40 (RSES). Nonetheless, based on classification of self-esteem level stated by García et al. (2019), their level of self-esteem is medium. Mohammadzadeh et al. (2018) stated that 70.6% of respondents among Malaysian adolescents in selected institutions had low self-esteem. The mean self-esteem score was 26.69 (SD = 6.01) with score ranged from 10 to 50 (RSES). On the contrary, based on research done by Hong et al. (2015) it is reported that the level of self-esteem among students in a Malaysian public university is high. The review revealed that most findings are of moderate to high level of self-esteem with only two studies' findings that showed a low level of self-esteem among the students.

Level of Religiosity

Review of religiosity found that studies specific to Muslim were tested with various versions of validated questionnaires and self-reporting scale. 154 Kuwaiti students and 154 American college students participated in a self-reporting scale, "What is your level of religiosity in general?" using an 11-point Likert obtained the mean score of 6.47 (SD = 1.78) and 4.51 (SD = 2.53) respectively (Ahmed Abdel-Khalek & Lester, 2015). Another study by Ahmed (2009) found that the 75.5% of American Muslim youth sampled were categorized as Highly Religious, significantly more than their peers (p=0.0001) using the The Religious Commitment Inventory-10 (RCI-10). A local study,

according to the study done by Mahudin et al. (2016), using 10 items validated IIUMRelS scale, among 315 employees at a local university yielded the mean score of 36.77 (SD = 3.78). As the total point was 40, the mean score showed a considerably high level of religiosity. For local students sample, an older study by Krauss et al. (2005) of 56-items of The Muslim Religiosity-Personality Inventory (MRPI), found that religiosity score for IPTA (public university) youth was consistently higher than the mean. To sum, most studies reviewed found that the sample studied score higher than mean or categorized them as high level of religiosity.

Religiosity and Self-esteem

In Australia, Lowe and Harris (2019) found out that there is an association between religiosity and self-esteem. Another study in Pakistan stated that higher religiosity is significantly associated with higher self-esteem (Ghafoor et al., 2018). A. M. Abdel-Khalek and Singh (2014) who studied on religiosity and subjective well-being among Indian university students also reported that self-esteem is one of the predictors of religiosity. There are several researches in Malaysia which provided information about religiosity in relation to self-esteem. (Ahmed Abdel-Khalek & Tekke, 2019) stated that those with higher intrinsic religiosity experienced greater level of self-esteem statistically. Another study found out that religiosity was significantly associated with higher self-esteem scores (Aghababaei & Tekke, 2018). These results are supported by a cross-sectional study carried out among Muslim students studying at Malaysian universities in which there is a significant positive association between religious commitment and self-esteem (Achour et al., 2017). On the contrary, study done by Sakellari et al. (2018) depicted that there is no correlation between self-esteem and spiritual value. This is also supported by AlMatrouk (2016). In overall, 7 out 9 studies reviewed found positive association of religiosity and self-esteem.

Islamic (Supererogatory) Practices

Khan et al. (2019) reviewed 13 findings which support Islamic practices' impact in building the personality of the believer where some rituals are seen encouraging a disciplined lifestyle and some play a part in increasing self-control. The rituals included praying, fasting, and hajj (pilgrimage). Most studies covered the obligatory practices while studies on the supererogatory acts are still limited. Supererogatory acts would need more motivation and devotion for believers to perform them. According to Nawawi (2014) in his The Meadows of the Righteous, *Nawafil* (supererogatory acts of worship) help one to attain the exalted place of being loved by Allah by virtue of which one is endowed with the special help of Allah. The interest in this study was directed towards the supererogatory acts:

Frequency of Reading Quran

According to Z. H. Khan et al. (2018) a study on 100 university students in Pakistan showed that there was positive association between Quranic practice (hearing and listening) with religious orientation and psychological wellbeing in areas such as relationships, self-esteem, purpose and meaning, and optimism. There is a significant positive relationship between Holy Quran recitation and psychological wellbeing among young Muslims (r =.83, p.05) among 100 young Muslims (43 males and 57 females) from Rawalpindi and Islamabad. In comparison to non-frequent reciters, young Muslims who had a higher rate of Holy Quran recitation were psychologically more stable. (Wasif, 2017). Local descriptive study of Malay Muslim in rural areas by Moten & Wok (2019)

found that almost half (46%) of 800 respondents agreed that they read Al Quran often and after every prayers. Throughout the reviews, studies on frequency of reciting holy Quran specific to self-esteem was limited. Other studies primarily focused more on impact of its listening and recitation on physical health.

Frequency of Supererogatory Prayer

Maltby et al. (1999) claimed that greater frequency of personal prayer significantly increases self-esteem. While there are limited findings of Islamic supererogatory prayer and self-esteem, there are several researches that highlighted the distant relationship of both. Achour et al. (2019) found that there is a positive and significant correlation between Islamic prayer and wellbeing (r = 0.197, p = < 0.01). Another study of 800 Malay Muslim in rural areas found that 43.4% performed the supererogatory prayers before and after the obligatory prayers. (Moten & Wok, 2019).

Frequency of Charity

As one of the supererogatory practices, benefitting others remain at the top. Definition per say remains vague as according to Abed Abbas et al. (2020), the use of term of philanthropy and volunteerism is interchangeably used in many Muslim writings and that they found that in relation to Quranic reference, volunteerism is much more general. The literature review adopted both terms and the synonyms. A study by Gimenez-Nadal & Molina (2015) used the Well-Being Module of the American Time Use Survey 2010, found that higher levels of daily happiness was reported for those who devote any time to voluntary activities during the day than those who do not. In another study of 4,048 adults in China showed that the frequency of charitable behaviour was positively associated with greater life satisfaction.(Song et al., 2019) Throughout the review, only one study was found specifically related to Muslim students and self-esteem. It was conducted in Iran universities among volunteers and non-volunteers where it was found out that volunteerism is significantly related to self-esteem level (Andam et al., 2013).

Frequency of Religious Knowledge Seeking

According to Moten & Wok (2019), people are the result of the socialisation process that they have gone through. It is further assumed that people pray because they have been socialised to pray by their parents, friends, and co-workers at work. In their descriptive study, when the respondents were asked who they would consult in cases involving religious matters, 66.5% chose teachers, while the rest preferred to consult prayer leaders or mosque administrators, books, spouses, electronic media, friends, and attend religious services. Markstrom (1999) found that none of the religious involvement (attendance at religious services, participation in a Bible study group, and youth group involvement) were associated with general self-esteem. However, school self-esteem was associated with more frequent religious attendance, involvement in a youth group, and involvement in a Bible study group. On the contrary, another study done among 183 Indonesian Muslim adolescents, revealed a significant relationship between religious involvement and self-esteem (French et al., 2008). Review on regard of this topic is compared with other religion and older literatures due to the limited resources.

Supererogatory fasting

A study conducted among medical students in Iran found that the level of self-esteem increased after 21 days of fasting (P=0.001) (Javanbakht et al., 2010). Another study by Afsaneh and Mitra (2013) demonstrated that the average of subjects' self-esteem before Ramadan was 30.2 ± 4.6 while it increased to 32 ± 3.2 after Ramadan (p<0.01). Almost nil study was found to specify regarding the benefits of supererogatory fasting. However, the literatures reviewed in regards to benefits of intermittent fasting on health by Pakkir Maideen et al. (2017) might indirectly reflect this practice.

3. Methodology

Recruitment

This online cross-sectional study was conducted between July and August 2020 at International Islamic University Malaysia (IIUM) Kuantan. Ethics approval from IIUM Research Ethic Committee was obtained (Ref. No. IREC 2020-065). Proportionate stratified random sampling was used. Sample size was calculated by using the estimation of population mean based on the self-esteem score from literature review yielding the mean of 17.30 (SD = 3.88) (Ahmat et al., 2018), non-response rate considered, needing 200. The sample was stratified according to years of study, where each year had 40 participants. As the ratio of male to female in Kulliyyah of Medicine is roughly 1:2, the participants were further proportionate according to gender, 20 male and 20 female, for each year for better precision and homogenous strata. The name list was randomized by using Excel. Google form link of self-administered questionnaire was sent through WhatsApp application to the selected students who fulfil the criteria which include Malaysian, Muslim and medical student of 2019/2020.

Measures

The questionnaire consisted of three major sections including socio-demographic characteristics, IIUM Religiosity Scale (IIUMReIS) (Mahudin et al., 2016), and Rosenberg Self-Esteem Scale (RSES). Sociodemographic factors included in this study were age, gender, pocket money, household income, year of study, previous secondary school, past medical history, frequency of reading Quran, frequency of supererogatory prayer, frequency of supererogatory fasting, frequency of charity, and religious knowledge seeking. IIUMRelS is a validated new self-reporting tool designed to measure the level of religiosity based on the concepts of islam, iman, and ihsan. It is short and simple to use with 10 underlying items. The answer score used a 4-point likert scale. IIUMReIS range from 10-40. The mean score was calculated and higher score indicated higher religiosity. RSES is a self-report instrument to evaluate the level of self-esteem consisting of 10 underlying items with 5 positive and 5 negative statements. The answer score used a 4 point likert scale. Items 2, 5, 6, 8 and 9 are reverse scored. The scale ranges from 10 to 40, with 40 indicating the highest score possible.

Statistical analysis

For data entry and analysis, Statistical Package for Social Sciences Program (SPSS) version 24.0 was used. Descriptive analysis (i.e., frequency, percentage, median and interquartile range) was employed to explore the distribution of sociodemographic characteristics of respondents, and to measure the level of self-esteem and level of religiosity among medical students. Chi-square, Mann-Whitney U test, Spearman's correlation, univariate and multivariate logistic regression were used to explore the association between self-esteem with the predictors P-value of less than 0.05 was set as statistically significant. 95% Confidence interval (CI) was used.

4. Results

A total of 178 medical students participated in this study, with the response rate of 89%. In average, the respondents' age was 23 years (IQR = 3), 92 (52.3%) were female, and 80.1% had no past medical illness. Almost half of the respondents 46% were from the T20 category of household income with the median monthly household income of RM 8,000 (IQR=6225). Respondents previously attended public (94.9%), regular academics (62.5%), and boarding secondary schools (55.1%). The majority of them read the Quran daily (71.6%), perform supererogatory prayer weekly (43.8%), do religious knowledge-seeking weekly (38.6%), contribute in charity monthly (44.9%) and more than half practice supererogatory fasting.

The respondents' self-esteem score was 28 (IQR = 9.75). By using the cut-off point of 25, level of self-esteem is classified into two: low level (10 - 25) and high level (25 – 40) (Isomaa et al., 2013). More than half of the respondents 103 (58.5%) had a score of more than 25. The rest of the respondents 73 (41.5%) scored less than 25 indicative of low self-esteem. The level of religiosity measured was in average of 35 (IQR = 6). In relation with self-esteem, the variables that were significant were frequency of supererogatory prayer, supererogatory fasting and frequency of charity. Further analysis via logistic regression models revealed that frequency of supererogatory prayer was significantly associated with self-esteem. Those who voluntarily pray daily were 30% less likely to have low self-esteem compared to those who are less frequent (95% CI = 0.11, 0.85). Subsequently, weekly supererogatory prayer decreased the risk of low self-esteem as much as 24% and only 5% if practised monthly. (95% CI = (0.08, 0.71) and (95% CI = (0.01, 0.31). Self-esteem has a significant positive correlation with religiosity. (R = 0.345)

Table 1: Sociodemographic characteristics of IIUM Kuantan medical students (n=178)

Sociodemographic characteristics	Median (IQR)
Age	23 (3)
Pocket money (RM)	450 (279)
Household income (RM)	8000 (6225)
	n (%)
Gender	
Male	84 (47.7)
Female	92 (52.3)
Year of study	
Year 1	32 (18.2)
Year 2	36 (20.5)
Year 3	30 (17.0)
Year 4	39 (22.2)
Year 5	39 (22.2)
Household income	
B40 (<RM 3,852)	44 (25.0)
M40 (RM 3,852 - RM 8,319)	51 (29.0)
T20 (>RM 8,319)	81 (46.0)
Previous secondary school	
Type	
public	167 (94.9)
private	9 (5.1)
Mainstream	
Regular academic	110 (62.5)
Religious	65 (36.9)
Others (technical, vocational, etc)	1 (0.6)
Residency	

Boarding	97 (55.1)
Daily	79 (44.9)
Past medical history	
Yes	35 (19.9)
No	141 (80.1)
Frequency of reading Quran	
None	1 (0.6)
Daily	126 (71.6)
Weekly	39 (22.2)
Monthly	10 (5.7)
Frequency of supererogatory prayer	
None	12 (6.8)
Daily	38 (21.6)
Weekly	77 (43.8)
Monthly	49 (27.8)
Supererogatory fasting	
Yes	102 (58.0)
No	74 (42.0)
Frequency of charity	
None	11 (6.3)
Daily	10 (5.7)
Weekly	76 (43.2)
Monthly	79 (44.9)
Frequency of religious knowledge-seeking	
None	11 (6.3)
Daily	32 (18.2)
Weekly	68 (38.6)
Monthly	65 (36.9)

Table 2: Distribution of self-esteem among IIUM Kuantan medical students

Scale (n=178)	Median (IQR)
RSES	28 (9.75)
Classification	**n(%)**
Low (<25)	73 (41.5)
High (≥25)	103 (58.5)

Table 3: Relation of sociodemographic characteristic with level of self-esteem among IIUM Kuantan medical students

Sociodemographic factor (n=178)	N	Level of self-esteem		Statistical test	P-value
		Low	**High**		
		Median (IQR)	**Median (IQR)**		
Age*	176	23 (3)	23 (3)	3623.5	0.677
Pocket money (RM)*	176	500 (300)	400 (200)	3206.5	0.093
Household income (RM)*	176	8000 (6750)	8000 (6000)	3530.5	0.490
		n, (%)	**n, (%)**		
Gender**					
Male	84	34 (40.5)	50 (59.5)	0.066	0.797
Female	92	39 (42.4)	53 (57.6)		

Year of study**				4.206	0.379
Year 1	32	10 (31.3)	22 (68.8)		
Year 2	36	18 (50.0)	18 (50.0)		
Year 3	30	14 (46.7)	16 (53.3)		
Year 4	39	13 (33.3)	26 (66.7)		
Year 5	39	18 (46.2)	21 (53.8)		
Household income**				0.688	0.709
B40 (<RM 3,852)	44	20 (45.5)	24 (54.5)		
M40 (RM 3,852 - RM 8,319)	51	22 (43.1)	29 (56.9)		
T20 (>RM 8,319)	81	31 (38.3)	50 (61.7)		
Previous secondary school Type**				1.449	0.229
public	167	71 (42.5)	96 (57.5)		
private	9	2 (22.2)	7 (77.8)		
Mainstream**				4.482	0.106
Regular academic	110	52 (47.3)	58 (52.7)		
Religious	65	21 (32.3)	44 (67.7)		
Others(technical, vocational, etc)	1	0 (0)	1 (100)		
Residency**				0.989	0.320
Boarding	97	37 (38.1)	60 (61.9)		
Daily	79	36 (45.6)	43 (54.4)		
Past medical history**				0.931	0.335
Yes	35	12 (34.3)	23 (65.7)		
No	141	61 (43.3)	80 (56.7)		
Frequency of reading Quran**				6.019	0.111
None					
Daily	1	1 (100)	0 (0)		
Weekly	126	47 (37.3)	79 (62.7)		
Monthly	39	18 (46.2)	21 (53.8)		
	10	7 (70.0)	3 (30.0)		
Frequency of supererogatory prayer**				20.188	**<0.001**
None	12	10 (83.3)	2 (16.7)		
Daily	38	6 (15.8)	32 (84.2)		
Weekly	77	33 (42.9)	44 (57.1)		
Monthly	49	24 (49.0)	25 (51.0)		
Supererogatory fasting**				5.129	**0.024**
Yes	102	35 (34.3)	67 (65.7)		
No	74	38 (51.4)	36 (48.6)		
Frequency of charity**				9.921	**0.019**
None	11	7 (63.6)	4 (36.4)		
Daily	10	2 (20.0)	8 (80.0)		
Weekly	76	24 (31.6)	52 (68.4)		
Monthly	79	40 (50.6)	39 (49.4)		
Frequency of religious knowledge seeking**				1.510	0.680
None	11	6 (54.5)	5 (45.5)		
Daily	32	11 (34.4)	21 (65.6)		
Weekly	68	28 (41.2)	40 (58.8)		
Monthly	65	28 (43.1)	37 (56.9)		

*Mann-Whitney U

**Chi-square

Table 4: Predictors of level of self-esteem among Medical IIUM Kuantan medical students according to unadjusted and adjusted linear regression models

Variables (n=178)	B	SE	Wald	Crude OR (95%CI)	aOR (95%CI)	P-value
Frequency of supererogatory prayer						
None (reference)						
Daily	-1.17	0.52	5.14	0.25 (0.09, 0.67)	0.31 (0.11, 0.85)	**0.02‡**
Weekly	-1.42	0.55	6.66	0.20 (0.07, 0.55)	0.24 (0.08, 0.71)	**0.01‡**
Monthly	-3.00	0.94	10.14	0.04 (0.01, 0.22)	0.05 (0.01, 0.31)	**<0.01‡**
Supererogatory fasting						
Yes (reference)						
No	-0.47	0.35	1.84	0.50 (0.27, 0.91)	0.62 (0.32, 1.23)	0.18
Frequency of charity						
None (reference)						
Daily	-0.23	0.87	0.07	0.54 (0.11, 2.75)	0.80 (0.15, 4.37)	0.80
Weekly	-1.12	0.86	1.68	0.24 (0.05, 1.22)	0.33 (0.06, 1.77)	0.19
Monthly	-0.98	1.09	0.80	0.14 (0.02, 1.03)	0.38 (0.04, 3.22)	0.37

‡P-value <0.05 is significant aOR= adjusted odd ratio
Nagelkerke $r^2 = 0.214$

Table 5: Correlation between religiosity and self-esteem

	R (95% CI)	P value
Self-esteem	0.345	**<0.001**

* Spearman's Correlation

5. Discussion

The analysed results showed that the average self-esteem score was 28 (IQR = 9.75) out of the total score of 40, which is lower when compared globally 30.85 (SD = 4.82), and generally in Malaysia 29.83 (SD = 3.42) (Schmitt & Allik, 2005) but higher when compared locally in Selangor at 27.65 (SD = 3.49) (Sherina et al., 2008)

Among the students, 58.5% scored more than 25 points which was classified as medium to high level of self-esteem (Ahmat et al., 2018; Basco & Han, 2016; Fakaruddin & Tharbe, 2018; Hong et al., 2015; Peterson-Graziose et al., 2013; Rosli et al., 2012; Salarvand et al., 2018). It differed from several studies who reported low levels of self-esteem (Acharya Pandey & Chalise, 2017; Mohammadzadeh et al., 2018) These results may be due to the differences in socioeconomic backgrounds.

In terms of religiosity level, the students' average score was 35 (IQR = 6) out of 40, which is considered high. This finding may reflect the literature claimed by Krauss et al. (2005) that the reason public institutions' students has higher religiosity may be because religious education is a compulsory subject for all the Muslim students in Malaysian public schools, and therefore, higher levels of education imply a higher potential for synthesizing religious knowledge. Another study that used the same scale (IIUMRelS) which was conducted among employees had a slightly higher religiosity

mean score of 36.77 (SD = 3.78). This may be due to the differences in sample age range which were older participants, thus probability of more religious beliefs.

The relationship of self-esteem and sociodemographic factors such as gender, age, year of study, household income, pocket money, past medical history and previous secondary school showed no significant association with self-esteem. In relation to age, the finding was similar to two studies which showed that there was no significant difference between the self-esteem level and the age (Ahmat et al., 2018) and (Mohammadzadeh et al., 2018). Regarding gender difference, it was consistent with the studies done by Ahmat et al. (2018) and Rosli et al. (2012) among undergraduate students of Universiti Kebangsaan Malaysia in which there was no significant differences observed between gender and self-esteem. The result of the year of study was also consistent with the findings from Ahmat et al. (2018). This was also supported by a study done by Basco and Han (2016) in which there was no difference in the level of self-esteem between freshmen, sophomores, juniors and seniors. In Iran, a study among nursing students also showed no significant difference of self-esteem scores in different years of study (Ghezelbash et al., 2015). Similarly in terms of household income, it was in comparison to a study by Sarı et al. (2018) who found that family monthly income is not associated with self-esteem score. Pocket money showed no significant association in contrast to a study (Haq, 2016), who found that there is positive relationship between self-esteem and monthly pocket money. Previous secondary schools showed no significant association consistent to a study conducted in Belgium of vocational/technical and public schools' type revealing no significant association between school type and self-esteem (Van Houtte, 2005) as well as a study done in Turkey with similar findings (Sarı et al., 2018). Likewise, in terms of past medical history, the finding differed to previous studies that showed significant association of medical history (mental health) in relation to self-esteem (Aboalshamat et al., 2017; Mohammadzadeh et al., 2018; Yaacob et al., 2009). Seigel et al. (1990) also supported this in terms of significant association between chronic illness and self-esteem. These findings may differ from the result obtained due to the limitations of self-report response.

Apart from frequency of supererogatory prayer, self-esteem was not associated significantly with other islamic practices i.e., supererogatory fasting, frequency of charity, frequency of religious knowledge seeking and frequency of reading Quran. Results revealed that frequency of supererogatory prayer was significantly associated with self-esteem. Those who voluntarily pray daily were 30% less likely to have low self-esteem compared to those who are less frequent (95% CI = 0.11, 0.85, p = 0.02). In this study, it was found that 70% of students pray daily supererogatory prayer, which may contribute to this study's high level of self-esteem. This finding corresponds to a previous study which found that greater frequency of personal prayer shared a significant positive association with self-esteem (Maltby et al., 1999). In another study, there was a positive and significant correlation between Islamic prayer and wellbeing (Achour et al., 2019)

With regards to other Islamic practices, the findings of frequency of reading Quran, frequency of charity, frequency of religious knowledge seeking, and supererogatory fasting were not significantly associated with religiosity in this study, which is opposite with previous studies which reported significant association with self-esteem. (Andam et al., 2013; French et al., 2008; Javanbakht et al., 2010; Z. H. Khan et al., 2018). However, a study by Markstrom (1999) showed that none of the religious involvement (attendance at religious services, participation in a Bible study group, and youth group involvement) were associated with general self-esteem. Most of these references have

discrepancies in terms of definition and difference in religion which is unavoidable due to limited resources.

Primarily in this study, it was found that religiosity correlates significantly with self-esteem. (R = 0.345). This positive correlation inferred that the higher the religiosity of the student, the higher the self-esteem. This is consistent with studies done in Australia, Pakistan and India which found significant association of religiosity and self-esteem. (Abdel-Khalek & Singh, 2014; Francis et al., 2019; Ghafoor et al., 2018). Similar findings were reported locally including a study done by Ahmed Abdel-Khalek & Tekke (2019) stating that those with higher intrinsic religiosity experienced greater levels of self-esteem. This is further supported by previous studies (Achour et al., 2017; Aghababaei & Tekke, 2018). In contrast to Sakellari et al. (2018) and AlMatrouk (2016) where they reported that no correlation was significantly found between religiosity and self-esteem.

6. Conclusion

This study revealed that overall, 6 in every 10 students had high levels of self-esteem. The religiosity score of the students was high at 35 points (IQR = 6). Frequent supererogatory prayer significantly contributes to a higher level of self-esteem. Self-esteem has a significant positive correlation with religiosity, reflecting the role of religion as a part of character strength and as a mechanism to improve self-esteem.

From Muslim medical student aspect, it is advisable that educational and training programmes should include religious and spiritual aspects for instance, 5-minute short empowering speech or Tazkirah. Buddy systems can be applied between students for one-to-one encouragement and motivation in terms of Islamic supererogatory practices checklist. Study circles can be upgraded to sharing spiritual, religious knowledge and discussing books or high self-esteem, influential medical figure like Ibnu Sina. Reflection upon the spiritual benefits of supererogatory prayers tradition, historical, scientific, and Islamic perspective may help the students to apply this practice in their life.

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