General practitioners' attitudes towards obesity in Brunei Darussalam

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ABSTRACT

Introduction: This study was undertaken to determine the attitudes of general practitioners (GPs) in Brunei towards obesity and to identify the associated factors with their attitudes. **Materials and Methods:** This is a cross-sectional study of 77 government GPs using a self-administered questionnaire to determine GP agreement or disagreement with statements regarding obesity, obese patient and obesity treatment. The GPs' demographic characteristics and other personal variables were analysed using descriptive statistics while chi-square test was used to analyse the associations between these factors and the attitude items. **Results:** 50.7% to 67.5% of GPs generally recognise obesity as a disease. However, 55.9% to 70.2% have, to a certain extent, negative attitude towards obese patients. At the same time, 10.4% to 36.4% are neutral towards obesity treatment. In addition, longer medical practice duration (p=0.001) and older age (p=0.010) are associated with positive attitude towards treating obesity. GPs with postgraduate qualification have relatively less empathy on obese patients (p=0.026). Interestingly, overweight but not obese, GPs are more uncomfortable when examining obese patients (p=0.018). Finally, Malay GPs are relatively more negative towards obese patients than other ethnicities. (p=0.013). **Conclusion:** The findings indicate the need for further studies to examine current GP clinical practice, the barriers that GPs face in treating obesity and their knowledge as well as competency in weight loss management. Consequently, recommendations and appropriate intervention could be implemented to improve GP attitudes towards obesity, focussing on young or newly graduated Malay GPs.

Keywords: General practitioner, obesity, attitudes, primary care, Brunei Darussalam

INTRODUCTION

Obesity is one of the most challenging global epidemics, and has become a serious public health concern in Brunei Darussalam as the prevalence increases. [1, 2] Worryingly, 12% of obese Bruneian adults in 1997 has increased to 27% in 2009. [3] Correspondingly, 16.5% of overweight and obese school children in 2005 has increased to 26.4% in 2009. [4] For such a small national population of estimated 400,000 [3], these increasing figures are worrying, as obesity is a major risk factor for can-

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cers, cardiovascular diseases and diabetes mellitus, which are the top three leading causes of death in Brunei Darussalam. [4]

General practitioners (GPs) are on the front line of the encounter between healthcare professionals and the obese population, as well as diseases related to obesity. Many studies have recommended GPs as having unique professional characteristics that put them in the best position to prevent and manage obesity. [5-8] However, primary care approach to treating obesity has been reported as inconsistent and uncoordinated. [9-12] Studies have raised concern that GPs were not dealing with obesity seriously by describing GP attitudes towards obese patients as negative. [9-12] GPs were reported to believe that obesity was patients' responsibility and their failure for weight loss was due to personal and patient-related factors like lack of motivation and willpower, and unwillingness for lifestyle changes. [11, 12] Additional studies found that a significant proportion of GPs considered themselves inadequate to manage obese patients. [5, 13, 14]

This study aims to determine GP attitudes towards obesity as a disease, obese patients and obesity treatment and to identify the association, if any, between GPs' demographic and other personal factors and their attitudes.

MATERIALS AND METHODS

Study design: This was an observational and cross-sectional study using a self-administered questionnaire.

Study Population and Sample: The inclusion criteria were practicing government GPs who were registered with Brunei Medical Board (BMB), including army GPs and vocational training scheme (VTS) GP trainees. The foundation year doctors who were on General Practice rotation and those who were not available during the data collection period were excluded. No sampling was done due to a small eligible study population which was estimated as 100 GPs.

Research Instrument: The questionnaire was adopted from a study entitled "*Physicians' attitudes about obesity and their association with competency and specialty: A cross-sectional study"* by Jay *et al.* [15] The author granted permission to use 12 attitude items for the survey, utilising a five-point Likert scale to determine physician agreement or disagreement with statements regarding obesity as a disease, obese patient and obesity treatment. The pre-testing process was done with 10 non-GP doctors. The questionnaire was then piloted on 24 other non-GP doctors, made up of four different groups to ensure inclusion of a wide range of participants namely: 1) obese 2) health-conscious 3) those involved in obesity clinics 4) those who were not involved in obesity clinics.

Data Collection Procedure: The questionnaire was distributed and collected over two weeks in August 2013. The author explained to prospective participants, the detail of the study verbally with written participant information sheet. If they agreed to participate, they signed the consent form, making their choice then of completing either the hardcopy or the online questionnaire. If they chose the hardcopy version, an A4-sized brown envelope containing the questionnaire was given. The participating GPs were required to return the completed questionnaire in the sealed

envelope. If they chose the online version, they were required to provide an active email address. On the same day, the author emailed them a link to the online questionnaire, created using online survey software called *Qualtrics.com.* [16] The participating GPs received up to three reminder email automatically to complete the survey if there was no response after two days. *Qualtrics.com* [17] ensured that all attitude items on the online questionnaire needed to be answered in order to complete it. Confidentiality was protected by blinding the personal identity of the GPs for both versions of the questionnaire and those who decided not to complete the questionnaire after signing the consent form.

The author converted the hardcopy questionnaire into an online version by using *Qualtrics.com* [16] so that all data from both the hardcopy and online questionnaire can be downloaded in the SPSS format. The potential factors documented were categorical factors (gender, ethnicity, identity card (I/C), attempt to lose weight in the last 10 years, qualification and experience in any specialised obesity clinic) and numerical factors (age, body mass index (BMI), medical practice duration). BMI was subdivided into three categories based on World Health Organisation's international classification.[22] The medical practice duration was also subdivided into two groups using the median year as the cut off value. Meanwhile, there are three different types of I/C: yellow (Bruneians), purple (permanent residents) and green (temporary residents). As for the ethnicity, two categories were Malay and others (Chinese, Indians, Caucasians etc.). There were two categories for the qualification namely those with only the basic undergraduate medical degree (MBChB, MBBS, etc.) and those with both undergraduate degree and any postgraduate qualifications (MSc, MRCGP, MRCP, etc.).

Statistical Analysis: The statistical analysis was performed using SPSS 20.0 for windows. GPs' demographic characteristics and other personal variables were analysed and presented using descriptive statistics: mean and standard deviation or frequency and percentage as appropriate. The associations between the factors and the attitude items were analysed using the chi-square test. All required statistical assumptions were checked. The scores of any negatively constructed attitude item were reverse-coded to ensure score uniformity. The five-point Likert scale were dichotomised by combining score 4 and 5 as positive attitude and combining score 1 to 3 as neutral or negative attitudes. The proportions of positive and neutral/negative mean score of each of the 12 attitude items were tested with each factor. All hypothesis tests were based on two-sided tests and a p value less than 0.05 was considered statistically significant.

Ethical Considerations: This study protocol was reviewed and approved by the Ministry of Health's Medical and Health Research and Ethics Committee (MHREC), with official permission from the Director General of Health Services to conduct the study in Brunei primary care.

RESULTS

Out of 90 working government GPs who were approached, 77 responded (85.6%). The demographic characteristics and other personal variables of the GPs are summarised in Table 1. The mean age was 40.5 years (9.59 years),

Table 1: Characteristics of participants (n = 77).

Characteristics	*n* (%)	Mean (SD)[a]
Gender		
Male	35 (46.7)	
Female	40 (53.3)	
Age (Year)		40.5 (9.59)
≤ 40 years	42 (56.8)	
> 40 years	32 (43.2)	
Ethnicity		
Malay	31 (41.3)	
Chinese	3 (4.0)	
Indian	13 (17.3)	
Caucasian	1 (1.3)	
Others	27 (36.0)	
Nationality		
Bruneian	33 (44.6)	
Permanent resident	0 (0.0)	
Temporary resident	41 (55.4)	
BMI (kg/m^2)		26.7 (4.57)
Normal	31 (44.3)	
Overweight	23 (32.9)	
Obese	16 (22.9)	
In the last 10 years, have you tried to lose weight?		
Yes	54 (71.1)	
No	22 (28.9)	
Medical practice period (year)		15.6 (9.74)
≤ 14 years	40 (54.1)	
> 14 years	34 (45.9)	
Qualification		
Undergraduate medical degree only	37 (48.1)	
Extra qualifications	40 (51.9)	
Previous involvement in managing obesity in a specialised obesity clinic		
Yes	8 (10.5)	
No	68 (89.5)	

with slightly more female and majority doctors being Malay ethnicity, followed by Indians and others. The other groups consisted of doctors from the parts of Southeast Asian nations and South Asia, apart from India. Majority had practiced for more than 15 years, but only one in tenth had been involved with specialised obesity clinic. On average, more than half (55.8%) were themselves either overweight or obese, and a majority had attempted to loose weight previously.

GPs tended to have negative attitudes to patients with obesity but majority believe that obese patient can achieve normal weight Table 2 summarises GPs' attitudes towards obesity.

Out of all associations tested between 12 attitude items (Table 2) and nine factors, 13 significant associations were revealed. These significant associations are reported in Table 3.

DISCUSSION

In terms of attitudes towards obesity as a disease, less than half of the GPs believe that obese patients are well aware of the health risks of obesity (Item 1). In a similar study by Foster *et al.* [14], 48.5% were in agreement with this statement, a similar result to this study's finding of 42.9%. This attitude highlights the fact that more GPs (50.7%) believe that more efforts are needed to increase patient awareness, which echoes other studies' findings whereby 95% of American GPs [14], 90% of Australian GPs [18] and 73.5% of Israeli GPs [13] believed that it was necessary to educate patients on the health risks of obesity. Furthermore, only 9.1% of GPs agree that obesity is primarily caused by behavioural factors (Item 6). This is an important positive attitude because previous studies by Mercer *et al.* [11] and Epstein *et al.* [12] revealed that GPs believed that behavioural factors like lack of motivation and willpower were the main causes of obesity. This means that the majority of GPs in this study recognise obesity as a complex condition which is not only influenced by behavioural factors, but also by genetic and environmental factors which requires a multi-

Table 2: General Practitioners' attitudes towards obesity.

Attitude items	Mean score	1- Strongly disagree	2-Disagree	3-Neutral	4-Agree	5-Strongly agree	1 and 2	4 and 5
	Mean (SD)[a]	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	%	%
1. I feel that most obese patients are well aware of the health risks of obesity	2.9 (1.20)	8 (10.4)	31 (40.3)	5 (6.5)	28 (36.4)	5 (6.5)	50.7	42.9
2. I believe that most obese patients could reach a normal weight (for height) if they were motivated to do so	3.9 (0.85)	-	8 (10.4)	7 (9.1)	46 (59.7)	16 (20.8)	10.4	80.5
3. I have negative reactions towards the appearance of obese patients	3.5 (0.91)	2 (2.6)	8 (10.4)	24 (31.2)	35 (45.5)	8 (10.4)	13.0	55.9
4. I feel uncomfortable when examining an obese patient	3.8 (0.94)	-	11 (14.3)	12 (15.6)	38 (49.4)	16 (20.8)	14.3	70.2
5. I do empathise with an obese patient	3.6 (0.86)	3 (3.9)	4 (5.2)	17 (22.1)	47 (61.0)	6 (7.8)	9.1	68.8
6. Obesity is primarily caused by behavioural factors	2.3 (0.80)	7 (9.1)	45 (58.4)	18 (23.4)	6 (7.8)	1 (1.3)	67.5	9.1
7. Treating obese patients is very frustrating	3.0 (1.18)	11 (14.3)	17 (22.1)	16 (20.8)	29 (37.7)	4 (5.2)	36.4	42.9
8. I believe that the current obesity management is not adequate in helping patients to achieve targeted weight loss	2.2 (0.94)	18 (23.4)	33 (42.9)	19 (24.7)	6 (7.8)	1 (1.3)	66.3	9.1
9. I manage to help obese patients in achieving targeted weight loss	3.1 (0.92)	2 (2.6)	21 (27.3)	28 (36.4)	23 (29.9)	3 (3.9)	29.9	33.8
10. The best role for a general practitioner in weight management is to provide referral rather than treatment	3.6 (1.09)	1 (1.3)	18 (23.4)	8 (10.4)	35 (45.5)	15 (19.5)	24.7	65.0
11. I am still happy to manage obese patients who have not reduced their weight despite optimal management	3.4 (0.98)	1 (1.3)	1 (23.4)	14 (18.2)	38 (49.4)	6 (7.8)	24.7	57.2
12. I feel qualified to treat obese patients	3.1 (0.95)	3 (3.9)	20 (26.0)	26 (33.8)	25 (32.5)	3 (3.9)	29.9	36.4

disciplinary management. Therefore, it can be concluded that GPs in Brunei Darussalam recognise and consider obesity as a disease.

With regards to attitudes towards obese patients, 80.5% of GPs are positive in believing that most obese patients can reach a normal weight, provided that they are motivated to do so (Item 2). Despite this belief, many studies concluded that GPs believed that treating obesity was the responsibility of patients and their failure to lose weight was due low motivation. [11, 12] However, the danger of this belief is that GPs may use personal and patient-related factors as excuses for not trying their best to help them lose more weight. As demonstrated by Galuska *et al.* [18] and Heath *et al.* [19], less than half of obese patients were advised by their GPs to lose weight. In terms of interaction with obese patients, the mean scores for Items 3 and 4 are 3.5 and 3.8 respectively, which can be translated as neutral and weak positive attitudes. However, Epling *et al.* used the same attitude items and generated lower mean scores of 2.8 and 1.77 respectively for Items 3 and 4. [20] In comparison, Foster *et al.* revealed smaller percentage of GPs who agreed with both Items 3 (55.9% vs. 37.4%) and 4 (70.2% vs. 9.1%). [14] In other words, when compared with previous studies, GPs in this study have more negative reaction towards the appear-

Table 3: Variables with significant associations.

Variables	*n*	Neutral /(- ve)	(+ ve)	X^{2} [a]	*df*[a]	*P* [a]
		n (%)	*n* (%)			
Age vs. Item 2[b]						
≤ 40 yrs old	42	5 (11.9)	37 (88.1)	4.21	1	0.040
> 40 yrs old	32	10 (31.3)	22 (68.8)			
Age vs. Item 9[b]						
≤ 40 yrs old	42	33 (78.6)	9 (21.4)	6.63	1	0.010
> 40 yrs old	32	16 (50.0)	16 (50.0)			
Ethnicity vs. Item 3[b]						
Malay	31	19 (61.3)	12 (38.7)	6.18	1	0.013
Others	46	15 (32.6)	31 (67.4)			
Ethnicity vs. Item 7[b]						
Malay	31	23 (74.2)	8 (25.8)	6.16	1	0.013
Others	46	21 (45.7)	25 (54.3)			
Ethnicity vs. Item 9[b]						
Malay	31	28 (90.3)	3 (9.7)	13.46	1	0.001
Others	46	23 (50.0)	23 (50.0)			
Identity Card (I/C) vs. Item 3[b]						
Bruneian	33	20 (60.6)	13 (39.4)	6.18	1	0.013
Temporary resident	41	13 (31.7)	28 (68.3)			
Identity Card (I/C) vs. Item 7[b]						
Bruneian	33	25 (75.8)	8 (24.2)	8.76	1	0.003
Temporary resident	41	17 (41.5)	24 (58.5)			
Identity Card (I/C) vs. Item 9[b]						
Bruneian	33	30 (90.9)	3 (9.1)	14.81	1	0.001
Temporary resident	41	20 (48.8)	21 (51.2)			
BMI vs. Item 4[b]						
Normal	31	6 (19.4)	25 (80.6)			
Overweight	23	12 (52.2)	11 (47.8)	8.02	2	0.018
Obese	16	3 (18.8)	13 (81.3)			
Qualification vs. Item 5[b]						
Under graduate	37	7 (18.9)	30 (81.1)	4.98	1	0.026
Postgraduate qualification	40	17 (42.5)	23 (57.5)			
Practice duration vs. Item 7[b]						
≤ 14 years	40	28 (70.0)	12 (30.0)	5.06	1	0.025
> 14 years	34	15 (44.1)	19 (55.9)			
Practice duration vs. Item 9[b]						
≤ 14 years	40	33 (82.5)	7 (17.5)	10.32	1	0.001
> 14 years	34	16 (47.1)	18 (52.9)			
Practice duration vs. Item 11[b]						
≤ 14 years	40	21 (52.5)	19 (47.5)	4.02	1	0.045
> 14 years	34	10 (29.4)	24 (70.6)			

ance of obese patients and they feel more uncomfortable when examining an obese patient. This study further found that GPs in Brunei Darussalam have less empathy for obese patients (Item 5) in comparison with two other similar studies. 80.2% and 92% of GPs from studies by Foster *et al.* [14] and Melanie *et al.* [15] respectively empathised for obese patients as compared with only 68.8% from our study. The result of comparisons between this study and previous studies showed that GPs in Brunei Darussalam have more negative attitude towards obese patients.

In terms of attitudes towards obesity treatment, slightly more GPs (42.9% vs. 36.4%) reported treating obese patients very frustrating (Item 7). Despite 66.3% of GPs believing that current obesity management is adequate in helping patients to achieve targeted weight loss (Item 8), 65.0% agreed that the GPs' role is to refer rather than treating obesity themselves (Item 10). In comparison to two other studies using Item 10, only 8% of 646 Australian GPs [21] and 12% of 250 American [15] GPs agreed with this same perceived role of GPs. This may be because of the limited management options available in Brunei primary care. Correspondingly, the study was equivocal in its findings with regards to GPs' feelings that they are qualified to treat obese patients (Item 12), and that they have been successful in helping obese patients in achieving targeted weight loss (Item 9). Interestingly, 57.2% of GPs would still be happy to manage obese patients who have failed to achieve weight loss despite optimal management in the primary care (Item 11). This could be because GPs may have more success in controlling obese patients' blood pressure, cholesterol levels and blood

sugar levels. It can be concluded from these findings that GPs have neutral attitudes towards obesity treatment. This could be explained by barriers that restrict their success in delivering optimal care to obese patient like short consultation time as found by Al-Ghawi *et al.* [7]

In terms of the relation between GPs' demographic characteristics and their attitudes, this study found that GPs who have been practising medicine for more than 14 years have more positive attitude towards obesity, in association with Item 7 (p=0.025) and 9 (p=0.001). These findings are supported by Al-Jeheidli *et al.* [23] who found that 24.6% of GPs with more than 15 years of experience never had any difficulties with obese patients, as compared to only 3.4% of doctors with five years of experience. Cade and O'Connell ranked experience as the most important contributor to knowledge related to managing obesity, more important than medical school training and postgraduate courses. [24] It can be concluded that experience in terms of medical practice duration improves GP attitudes and confidence in obesity treatment. Correspondingly, this study found that older GPs have more confidence in helping obese patients to achieve targeted weight loss (Item 9, p=0.010). Older GPs have more years in medical practice and are therefore more experienced, more knowledgeable and have more confidence in managing obesity. In addition, this study found that more qualified GPs have less empathy, which is consistent with the findings of Epling *et al.* [20]

Interestingly, out study found that GPs who had normal and obese BMI felt more comfortable examining obese patients as compared to overweight GPs (Item 4, p=0.018). This could be explained by the fact that there were only a small number of obese GPs (n=16) in this study. Ethnicity and status of identity card have similar significant associations with three attitude Items 3, 7 and 9. Malay GPs tended to have more negative reactions towards the appearance of obese patients (Item 3, p=0.013), greater feelings of frustration when treating them (Item 7, p=0.013) and had less success in helping patients to lose weight (Item 9, p=0.001). Perhaps the Malay GPs were more open and honest when answering the survey.

The findings of this study may have several implications for GPs and the policy makers for primary care. Firstly, the study may encourage GPs to reassess their own attitudes towards obese patients and encourage them to be more positive towards obese patients. Secondly, the findings may highlight some opportunities for interventions to improve GP attitudes. Perhaps, some of the barriers to weight management could be overcome, allowing more freedom for GPs to explore other available management options, like pharmacotherapy and direct involvement in specialist obesity clinics in the primary care setting, in collaboration with hospital specialists. GPs may benefit from greater education and training as knowledge and experience may change GP attitudes towards obesity for the better. Further studies to examine current GP clinical practice, the barriers that GPs face in treating obesity and their knowledge as well as competency in weight loss management, will be needed to provide greater implications in order to improve the delivery of optimal weight management in primary care in Brunei Darussalam.

The limitations of this study include a relatively small sample size (private GPs not included) and perhaps, some GPs may not have responded the truth in answering the questionnaire. On the other hand, the response rate could be considered good for this nature of study.

In conclusion, this study found that GPs generally recognise obesity as a disease. However, they have, to a certain extent, a negative attitude towards obese patients. At the same time, their attitude towards obesity treatment was neither positive nor negative. Longer medical practice duration and older age are associated with positive attitude towards managing obesity. However, GPs with postgraduate qualifications had relatively less empathy towards obese patients than those without postgraduate qualifications. Interestingly, overweight but not obese GPs were more uncomfortable when examining obese patients. Finally, Malay GPs are relatively more negative towards obese patients than other ethnicities.

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