Knowledge, attitudes, perceptions and medicine compliance of patients with hyperlipidaemia attending a primary care clinic

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INTRODUCTION

In Brunei Darussalam, cardiovascular diseases have resulted in one of the top cause of death in recent years [1], and hyperlipidaemia is known to be a major risk factor. Having a general knowledge about risk factors and treatments for a disease correlates with active participation in treatment [2]; hence achieving treatment goals. In addition, knowledge was advocated as an important prerequisite to good compliance to medical therapy as supported by a study conducted on the influence of knowledge of osteoporosis and treatment adherence. [3] The objectives of this study were to assess the knowledge, attitude and perceptions of hyperlipidaemia patients in a primary care clinic; to determine the association between sociodemographic characteristics, knowledge and attitudes towards hyperlipidaemia and lipid-lowering medication and lastly to determine the association between knowledge and awareness of their lipid level and their attitudes towards lipid-lowering medication.

MATERIALS AND METHODS

Study Design, Population and Sample: This cross-sectional study was conducted from September 2013 to February 2014. The target population was all hyperlipidaemia patients registered in Berakas 'A' Health Centre. The source population was patients with hyperlipidaemia attending this clinic during the study period. Patients diagnosed with hyperlipidaemia aged 18 and above without disability were included in this study. They were personally approached by the investigator while waiting to see the doctor for their appointments during the recruitment period. A total of 160 patients were approached but only 130 gave consent to participate in this study.

A self-administered questionnaire was adapted from existing questionnaires [4,5] and developed to address study objectives. The questionnaire was translated to Malay language through back-to-back translation method and was available to respondents bilingually. It was initially pre-tested in 20 hyperlipidaemia patients in Berakas 'A' Health Centre and was modified accordingly.

Data analysis: Data was analysed using IBM SPSS Statistics version 20.0. Chi-square test was used to identify the association between knowledge level and sociodemographic characteristics; the association between knowledge level and medicine compliance; the awareness of lipid level and their medicine compliance. Two-sided t-test was used for all hypothesis tests and $p<0.050$ was taken as statistically significant.

ETHICAL APPROVAL: Ethical approval was obtained from the Ministry of Health Research and Ethics Committee (MHREC) and Ethics Committee of

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RESULTS

The sociodemographic characteristics are outlined in Table 1. Table 2 shows respondents' knowledge on hyperlipidaemia. Overall, 85.4% (111/130) stated that they knew the meaning of cholesterol but when asked for its definition, 36% (40/111) of the answers were less specific. Most defined cholesterol as 'from seafood' or 'from beef and curry'. A few (5%) defined that 'cholesterol comes from very sweet food'.

Table 3 shows the respondents' knowledge level, attitude and perceptions towards hyperlipidaemia and its management. 59.2% (77/130) stated that they had tried or were trying to reduce their blood lipid level. Of this, 22.1% (17/77) did so through exercising, 41.6% (32/77) by diet control and the remaining tried both. Of the 48 patients (36.9%) who responded when asked about symptoms experienced with hyperlipidaemia, many related this to neck stiffness and dizziness, with few relating it to headache, breathlessness and limbs stiffness.

Table 4 shows the association between respondents' sociodemographic characteristics and hyperlipidaemia knowledge level, attitude towards hyperlipidaemia and attitude towards lipid-lowering medication. Only age groups showed significant association with knowledge level (p=0.016), attitude towards hyperlipidaemia (p=0.019) and lipid-lowering medication (p=0.025).

Table 1: Demographics of subjects.

Age	
≥ 45	34 (26.2)
46-60	62 (47.7)
>60	34 (26.2)
Gender	
Male	55 (42.3)
Female	75 (57.7)
Educational level	
Did not attend school	14 (10.8)
Finished primary school	20 (15.4)
Finished middle school	30 (23.1)
Finished high school	55 (42.3)
Finished university	11 (8.5)
Occupational status	
Employed	69 (53.1)
Retired	38 (29.2)
Housewives	23 (17.7)

DISCUSSION

Results indicated that respondents were familiar about hyperlipidaemia and knew that diet and exercise were important to manage the condition. It was interesting to note that some respondents associated hyperlipidaemia with neck stiffness while others related it to symptoms such as dizziness and limb stiffness. This finding is consistent with the study by Buckert *et al*. [5]

Our study findings showed 71.5% believed that hyperlipidaemia can cause hypertension when in fact, these two conditions usually co-exist. Most patients may have these two conditions diagnosed at the same time or one after another. This result supported the findings a study by Oke *et a*l. on hypertensive patients which showed most respondents (65.2%) claimed that high lipid diet could increase blood pressure. [6]

There was a significant association between age group 46 to 60 and knowledge level presumably because they were diagnosed with hyper-

Table 2: Respondents' knowledge about hyperlipidaemia.

	'Yes' n(%)	'Not sure' n (%)	'No' n(%)
Familiar with the term cholesterol	111 (85.4)	13 (10.0)	6 (4.6)
High cholesterol level can result in high blood pressure	93 (71.5)	30 (23.1)	7 (5.4)
High cholesterol level can increase risk of getting stroke	114 (87.7)	14 (10.8)	2 (1.5)
High cholesterol level can increase risk of having heart attack	115 (88.5)	13 (10.0)	2 (1.5)
Stress can influence blood cholesterol level	54 (41.5)	55 (42.3)	21 (16.2)
Smoking cigarette can increase blood cholesterol level	61 (46.9)	51 (39.2)	18 (13.8)
Level of physical activity can influence blood cholesterol level	111 (85.4)	15 (11.5)	4 (3.1)
Choice of food can influence my blood cholesterol level	121 (93.1)	9 (6.9)	0 (0.0)
High cholesterol condition can be hereditary	39 (30.0)	45 (34.6)	46 (35.4)

Table 3: Respondents' knowledge level, attitudes and perceptions towards hyperlipidaemia and its management.

Variables	n (%)
Knowledge (number of correct answers)	
≥ 8	36 (27.7)
5-7	61 (46.9)
<5	33 (25.4)
Attitudes	
Hyperlipidaemia is a concerning health condition	
Very serious concern	54 (41.5)
Somewhat concern	56 (43.1)
Not concern at all	20 (15.4)
Hypolipidaemia medication manages hyperlipidaemia	
Very important	83 (63.8)
Somewhat important	45 (34.6)
Not important at all	2 (1.5)
Perceptions	
Had/are trying to reduce lipid level via exercise, diet or both	
Totally agree and agree	77 (59.2)
Neutral	40 (30.8)
Totally disagree and disagree	13 (10.0)
Hyperlipidaemia can be cured	
Totally agree and agree	85 (65.4)
Neutral	25 (19.2)
Totally disagree and disagree	20 (15.4)
Hyperlipidaemia is principally caused by age	
Totally agree and agree	60 (46.2)
Neutral	44 (33.8)
Totally disagree and disagree	26 (20.0)
Symptoms of hyperlipidaemia	
Yes	48 (36.9)
Not sure	20 (15.4)
No	62 (47.7)

lipidaemia for some time and thus may have more knowledge. As for age group >60, the low knowledge level might be due to lack of interest in knowing. A significant association was found between age group ≤45 and their concern towards hyperlipidaemia based on the assumption that they were more worried about the complications.

Our study findings suggested that limited knowledge on hyperlipidaemia represented barriers to medicine compliance. This finding is consistent a study that assessed patients with coronary heart disease, which showed that better medicine compliance resulted from better knowledge on disease's risk factors. [7]

It was surprising that respondents' positive attitudes towards importance of taking medication were not significantly associated with medicine compliance. Medicine non-compliance could be due to other factors such as forgetfulness [8] and physician-patient relationship. [9]

There was a significant association between awareness of lipid level and medicine compliance. However, blood lipid levels were not known by most (70.8%) respondents presumably because they did not feel the importance to know or they were not informed. Thus, patients' lipid levels should be informed to keep them empowered about their risk profile and possibly motivate them in behaviour change as suggested by Guibert *et al.* [10]

Our study was limited by the use of a self-administered questionnaire with a possible risk of response bias; respondents' self-reporting, particularly on medicine compliance. Furthermore, we sampled only one clinic. Future qualitative studies can be improved by conducting interviews with hyperlipidaemia patients to explore their knowledge and possible misconceptions, attitude, perceptions and medicine compliance. Measurements of other variables such as co-morbidities and duration of being diagnosed with hyperlipidaemia could be included to explore the association with attitudes and perceptions.

In summary, although our patients were relatively knowledgeable and displayed positive attitudes and perceptions to management of hyperlipidaemia, it is important to continuously address these issues for better health outcomes. Given the association between knowledge level and medicine compliance, healthcare providers should be encourage to design tailored strategies to improve patients' knowledge and medicine compliance which in turn may maximise the benefits of treatment.

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Table 4: Association between sociodemographic characteristics and knowledge level, attitude towards hyperlipidaemia and attitude towards lipid-lowering medication.

Variables	n	Knowledge level					Attitude towards hyperlipidaemia						Attitude towards lipid lowering medication					
		≥ 8 n (%)	5-7 n (%)	<5 n (%)	X^2 statistic[a] (*df*)	*p* value	Very serious concern n (%)	Somewhat concern n (%)	Not concern at all n (%)	X^2 statistic[a] (*df*)	*p* value	Very Important n (%)	Somewhat important n (%)	Not Important n (%)	X^2 statistic[a] (*df*)	*p* value
Gender																
Male	55	17 (27.3)	27 (49.1)	12 (23.6)	0.22 (2)	0.897	19 (34.5)	25 (45.5)	11 (20.0)	9 (12.0)	0.277	30 (54.5)	24 (43.6)	1 (1.8)	3.57 (1)	0.059
Female	75	21 (28.0)	34 (45.3)	20 (26.7)			35 (46.7)	31 (41.3)	9 (12.0)			53 (70.7)	21 (28.0)	1 (1.3)		
Age																
≤45	34	8 (23.5)	10 (29.4)	16 (47.1)	12.12 (4)	0.016	18 (52.9)	16 (47.1)	0 (0.0)	11.77 (4)	0.019	24 (70.6)	10 (29.4)	0 (0.0)	6.05 (2)	0.049
46-60	62	17 (27.4)	34 (54.8)	11 (17.7)			24 (38.7)	28 (45.2)	10 (16.1)			33 (53.2)	27 (43.5)	2 (3.2)		
>60	34	11 (32.4)	17 (50.0)	6 (17.6)			12 (35.3)	12 (35.3)	10 (29.4)			26 (76.5)	10 (29.4)	0 (0.0)		
Education Level																
No formal schooling	34	9 (26.5)	18 (52.9)	7 (20.6)	2.95 (4)	0.566	13 (38.2)	14 (41.2)	7 (20.6)	6.25 (4)	0.181	26 (76.5)	8 (23.5)	0 (0.0)	4.18 (2)	0.123
Finished middle school	30	7 (23.3)	12 (40.0)	11 (36.7)			17 (56.7)	8 (26.7)	5 (16.7)			20 (66.7)	9 (30.0)	1 (3.3)		
Finished high school and university	66	20 (30.3)	31 (47.0)	15 (22.7)			24 (36.4)	34 (51.5)	8 (12.1)			37 (56.1)	28 (42.4)	1 (1.5)		
Occupation Status																
Employed	69	18 (26.1)	31 (44.9)	20 (29.0)	3.73 (4)	0.444	29 (42.0)	34 (49.3)	6 (8.7)	8.45 (4)	0.076	43 (62.3)	25 (36.2)	25 (36.2)	1.26 (2)	0.532
Retired	38	14 (36.8)	17 (44.7)	7 (18.4)			14 (36.8)	13 (34.2)	11 (28.9)			43 (62.3)	14 (36.8)	14 (36.8)		
Housewives	23	4 (17.4)	13 (56.5)	6 (26.1)			11 (47.8)	9 (39.1)	3 (13.0)			17 (73.9)	6 (26.1)	6 (26.1)		

Note: [a] Chi Square test

and stimulating suggestions in this study.

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