

# MALAYSIAN DIABETES PATIENTS' PERCEPTIONS, ATTITUDES AND PRACTICES IN RELATION TO SELF-CARE AND ENCOUNTERS WITH PRIMARY HEALTH CARE PROVIDERS

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## ABSTRACT

**Introduction:** Studies from many parts of the world have explored factors associated with poor diabetes self-management including Diabetes Self-Management Education (DSME).

**Research Methodology:** This study was conducted among 162 diabetes patients at primary healthcare clinics in Malaysia using semi-structured exit-interviews to explore their perceptions, attitudes and practices in relation to self-care and encounters with primary health care providers.

**Results and Discussion:** Generally, the patients had limited knowledge, lack of motivation and encountered difficulties in diabetes self-management. The DSME was inadequate due to limited time allocated for consultations with doctors, language barriers and the lack of interpersonal and communication skills of HCPs.

**Conclusion:** In view of the positive effects of quality DSME on the health outcomes and quality of life among diabetes patients, it is important for the primary healthcare clinics in Malaysia to strengthen the diabetes services through training in communication of all HCPs, awareness of language difference and task shifting.

**Keywords:** *Primary Healthcare, Diabetes Self-Management Education (DSME)*

## INTRODUCTION

Diabetes is an important public health concern and has been identified as one of four priority Non-Communicable Diseases (NCDs) required for immediate action by the World Health Organization (2016). In 2014, it was estimated that 42.2 million people lived with diabetes and the global prevalence of diabetes had increased twofold from 4.7% in 1980 to 8.5% (WHO, 2016). In Malaysia, the diabetes prevalence in 2015 was 17.5% in adults age 18 year and above, equivalent to an estimated population of 3.5 million for both diagnosed and undiagnosed (Malaysia National Health and Morbidity Survey, 2015).

About 80% of Malaysians diagnosed with diabetes received treatment and care at government healthcare facilities, particularly at the primary health clinics Malaysia National Health and Morbidity, 2015). In principle, comprehensive diabetes care services

including patient education on pharmacotherapy and lifestyle issues are available at most of the primary health clinics (Hussein *et al.*, 2015). However, the quality of care varied depending on the patient load and the availability of the multidisciplinary diabetes teams and services (Ramli and Taher, 2008, Mustapha *et al.*, 2014). In general, the doctors at the primary health clinics bear the full responsibility for diabetes care management including patient education. The task of patient education may be delegated to certified diabetes educators if available, depending on the clinic organisational systems, manpower, and patient load (Mustapha, Yen & Tan, 2017). Generally, nurses play a rather insignificant role in existing diabetes care management and services. Most of them are tasked at screening counters, blood taking rooms, treatment or dressing rooms on a routine basis to perform screening tests or basic clinical procedures (Mustapha, Yen & Tan, 2017).

The National Diabetes Registry Report showed that less than a quarter of diabetes patients in Malaysia achieved the glycaemic target of  $HbA_{1c} < 6.5\%$  in 2012 and the mean  $HbA_{1c}$  was 8.1% (Feisul & Azmi, 2013). Studies by Ali and Jusoff (2009) and Gunggu *et al.* (2016) showed that poor medication adherence or failure to reach glycaemic targets of  $HbA_{1c}$  was attributed to the lack of understanding of the disease, the complexity of treatment and lack of commitment and family support. Many recent studies including systematic reviews have demonstrated that diabetes self-management education (DSME) and support can help to increase adherence and achieve optimal diabetes control (Brunisholz *et al.*, 2014, Jahromi *et al.*, 2015, Siminerio *et al.*, 2014, Steinsbekk *et al.*, 2012, Tang *et al.*, 2012, Tshiananga, 2012). In addition to improving  $HbA_{1c}$  outcomes and reducing risk of onset of diabetes complications (Siminerio *et al.*, 2014, Tshiananga, 2012, Welch *et al.*, 2011, Stratton *et al.*, 2000), DSME also assisted patients to adopt and maintain healthier lifestyles such as a more healthy diet and regular physical activity (Toobert *et al.*, 2011, Tang *et al.*, 2012), decrease diabetes distress (Siminerio *et al.*, 2014) and improve quality of life (Trento *et al.*, 2004).

However, it should be noted that the outcomes of DSME were associated with the amount of time spent for doctor's consultation, healthcare provider-patient relationships and communication skills. Studies showed that healthcare providers (HCPs) including nurses with better communication skills and the ability to involve patients in decision making were associated with better diabetes self-management (Heisler *et al.*, 2007, Piette *et al.*, 2003, Gabbay *et al.*, 2013, Kang and Gu, 2015, Mulder *et al.*, 2015). Thus, Piette *et al.* (2003) and Ivanov (2016) pointed out that the HCP-patient relationship was the key of effective provider-patient communication as patients would be more willing to discuss with the HCP who had built trust with them.

Despite numerous studies investigating the barriers to diabetes self-care management and adherence to treatment both from the patients' and the HCPs' perspectives in Malaysia (Gunggu *et al.*, 2016, Lee *et al.*, 2012, Ali and Jusoff, 2009, Al-Qazaz *et al.*, 2011), there is lack of research exploring the link between poor adherence and the quality of DSME received by patients especially in the Malaysian context. Therefore, this study explores Malaysian diabetes patients' perceptions, attitudes, and practices in relation to self-

care and encounters with primary HCPs.

## RESEARCH METHODOLOGY

### Study design and sampling

This research was designed as a predominantly qualitative, cross-sectional study. The study was conducted at six purposively selected Ministry of Health's primary healthcare clinics at the states of Kuala Lumpur and Selangor, Malaysia based on the number of registered active diabetes patients (ranging from 1,000 to 1,999 patients; 2,000 to 2,999 patients and  $\geq 3,000$  patients) and the variety and complexity of medical services that they provided. Diabetes patients were consecutively selected from each of the six primary healthcare clinics based on convenience sampling in their order of appearance after consultations with HCPs (either doctor or nurse). Ethics approval was provided by the Medical Research and Ethics Committee (MREC), Ministry of Health Malaysia, reference NMRR-16-449-29909 (IIR), dated 7 April 2016. Data collection was conducted from June, 2016 to March, 2017. Written informed consent was obtained prior to the interviews.

### Data collection

Semi-structured, one-to-one exit interviews were conducted with diabetes patients, in English, Malay or Mandarin, after a consultation or interaction with HCPs. Background information of patients such as socio-demographic characteristics, diabetes history, and complications encountered and management were collected. In addition, their perceptions, attitudes, and practices on self-care and recent encounters with HCPs were explored based on a semi-structured questionnaire guide. All interviews were audio-recorded and transcribed verbatim by research assistants, after which the senior researchers conducted a quality check of the transcriptions.

### Data analysis

The background information of patients such as socio-demographic characteristics, diabetes history of patients including years of living with diabetes, presence of diabetes-related complications and diabetes management were quantified and analysed by IBM SPSS version 21.0. Descriptive data on background information including means and standard deviations for each variable were prepared.

As for the interview transcripts, the data were coded

horizontally (by coding each interview transcript as a stand-alone document and analysing line-by-line) and vertically (by scanning across the data for specific terms) by the researchers using Atlas.ti 7: The Qualitative Data Analysis and Research Software. The codes were categorised and grouped into common themes. The identified codes and themes were further discussed and finalised by the research team. Quotations were extracted and translated into English to exemplify each theme.

## RESULTS

### Patient characteristics

A total of 162 diabetes patients participated in the study (Table). More than half of them were Malays, females, and they had a mean age of  $58.5 \pm 11.6$ . The mean years living with diabetes for all patients was  $8.8 \pm 7.4$ . The majority of the patients stated that they were not sure about the type of diabetes they had (Type 1 or 2) and that they had not encountered any diabetes-related complications. While about two thirds of the patients indicated they were on non-insulin therapy or oral medication(s), one quarter of them were on insulin therapy and 16.1% of them were on both insulin and non-insulin therapies.

**Table: Patient characteristics**

|                                   | <b>Total (n = 162)</b> |
|-----------------------------------|------------------------|
| <b>Age</b>                        |                        |
| Mean ( $\pm$ SD)                  | 58.5 ( $\pm$ 11.6)     |
| Median                            | 60.0                   |
| <b>Sex</b>                        |                        |
| Male (%)                          | 71 (43.8)              |
| Female (%)                        | 91 (56.2)              |
| <b>Ethnicity</b>                  |                        |
| Malay (%)                         | 92 (56.8)              |
| Chinese (%)                       | 26 (16.0)              |
| Indian (%)                        | 43 (26.5)              |
| Eurasian (%)                      | 1 (0.6)                |
| <b>Type of diabetes</b>           |                        |
| Type 1                            | 5 (3.1)                |
| Type 2                            | 18 (11.1)              |
| Unsure                            | 139 (85.8)             |
| <b>Years living with diabetes</b> |                        |
| Mean ( $\pm$ SD)                  | 8.8 ( $\pm$ 7.4)       |
| Median                            | 7.5                    |

| <b>Complication</b>                                |            |
|--|------------|
| None   | 129 (79.6) |
| Retinopathy  | 5 (3.1)    |
| Nephropathy  | 8 (4.9)    |
| Heart disease                                      | 5 (3.1)    |
| Stroke   | 3 (1.9)    |
| Diabetic foot/numbness                             | 12 (7.4)   |
| <b>Pharmacological management on diabetes care</b> |            |
| Non-insulin therapy only                           | 95 (58.6)  |
| Insulin therapy only                               | 41 (25.3)  |
| Non-insulin + Insulin therapy                      | 26 (16.1)  |

### Diabetes patients' perceptions, attitudes and practices of self-care

#### Perceptions of diabetes

The study revealed that most diabetes patients were aware of diabetes and perceived it as a disease associated with high sugar levels in blood, and a person who had a family history of diabetes had a higher risk of getting the disease. However, they were unsure about the particular type of diabetes with which they had been diagnosed, and some of them associated it with blood glucose level, risk of complications or the need for insulin therapy.

*"Inherited, not sure about the type, haven't heard about it" (56 years old, Male, Chinese).*

*"If blood sugar level fluctuates means type 1? If it cannot go down, is that type 2?" (56 years old, Male, Malay).*

*"If type 1, means already dangerous? Does it need to be cut off? [Lower limb amputation]" (71 years old, Male, Malay).*

*"Type 1 needs insulin injections?" (51 years old, Female, Malay).*

#### Attitudes toward diabetes

Most diabetes patients described diabetes as an inevitable medical condition, and that most of them couldn't do anything to improve it, while failure to achieve glycaemia target was due to external factors such as desires to eat that were beyond their control. The predominant attitude was that living with some diseases or ill health was normal at old age and diabetes was just part of the illness package.

*"Once you get diabetes, you can't do anything" (61 years old, Male, Malay).*

*"We are old, so sometimes it is a bit difficult for us to control. I know I cannot eat too much or take a certain food such as durian, I still eat, but not so much" (71 years old, Male, Malay).*

*"That the glucose level went up was not my fault [laughing]. Sometimes I over-eat. But not too badly, I think" (56 years old, Female, Malay).*

*"Ah, other than diabetes, I also have high blood pressure and cholesterol. It is a package when you are getting old" (57 years old, Female, Indian).*

On the other hand, there was a small group of diabetes patients perceived that diabetes management was their own responsibility and they were committed to follow HCPs' advice including adjusting their diet and level of physical activity. However, several patients expressed negative emotions or diabetes distress such as denial, stress, frustrations, discouragement, worry and burn-out when their glycaemia targets were not achieved despite various self-management measures that had been taken. It was also found that diabetes distress had led to a lower motivation to accept treatment or follow-up visits.

*"Once you have diabetes, it's not in your control. I exercise, I don't eat rice at night, and I take herbs and health-related products. I was thinking everything was perfect, but it doesn't seem like that. So in spite of that, still it [my blood sugar] can go high. I am really frustrated" (46 years old, Female, Indian).*

*"I don't like it at all. I don't like to come to clinic for check-ups. I think it is just wasting my time. But whether we like it or not, we still have to face it. If the doctor tells me, 'Aunty, you don't need to come to clinic anymore', I think it would be better" (62 years old, Female, Malay).*

### **Practices on self-management**

The majority of the diabetes patients mentioned pharmacological treatment, either non-insulin or insulin therapy, as the only measures to control their blood glucose level. However, it was found that many diabetes patients were fearful and had misconceptions about some aspects of the medications, which might lead to medication non-adherence and uncontrolled diabetes. Most of them perceived that medication adjustment and insulin injection was an indication of the failure of

diabetes control, while some older patients indicated that they rejected the recommendation of insulin therapy due to the lack of confidence and skills in managing insulin injection.

*"How I control my diabetes? Taking medication only...I don't know what else to do, hopefully, it helps" (51 years old, Female, Indian).*

*"The doctor wanted to increase medication today, I definitely don't like that. But if I don't follow the new prescription from the doctor, it can go worse" (46 years old, Female, Indian).*

*"I was recommended insulin therapy, ah...last year, this year also, but I refused. I am scared" (69 years old, Male, Malay).*

*"I don't know how to take insulin. I don't know how to handle the injection pen. The doctor have prescribed me with insulin, but I don't use" (63 years old, Female, Malay).*

The other reasons for non-adherence included the complexity of the dosage and timing of medication regimens, forgetfulness and the experiences of adverse effects such as a headache and hypoglycaemia. Several patients reported that they self-adjusted or stopped the medications without guidance of the HCPs due to the experiences of side effects.

*"We are getting old. Sometimes we are forgetful too. I tend to eat first, and then only remember that I haven't injected insulin. I know the need to inject half an hour before the meal. But family members have already prepared the meals and asked me to eat first...So sometimes I forget and eat before the injection" (60 years old, Male, Malay).*

*"I take oral medication only, I am not using insulin. I have already stopped. Earlier I used it for a short while, then I stopped. It caused me hypo" (44 years old, Female, Malay).*

*"I never forgot to take insulin. But the pill, if sometimes I have a headache, I will stop taking for one day. Or ... half a day, but actually I do take it, just not consistently. Then ... my sugar level suddenly rises" (59 years old, Male, Malay).*

As for the non-pharmacological self-care practices, only a few patients reported that they tried to change their lifestyles, such as reducing food portions,

sweetened beverages or sugar intake, as well as walking more regularly. The majority of them perceived that behaviour changes were difficult, especially in terms of dietary habits because it was related to acquired habits, food preferences and defined time schedules.

*"I always take my breakfast outside the home, but I don't take bread. I take thosai. But sometimes we are really stressed when eating. Like biscuits are also sweet, so we have to choose our biscuits"* (46 years old, Female, Indian).

*"You won't think about it when you over-eat. I looked at the sweet corn porridge. For those who don't like sweet corn, I don't know. But to me, it looked so tasty, so I had eaten too much last night. Even though I knew that I needed to come to the clinic for a check-up today, but what to do?"* (61 years old, Male, Malay).

*"The doctor advised me to eat more frequently with small portions. But how can we keep eating for the whole day? We need to work, so we eat until we feel full. Then we take the medication"* (63 years old, Female, Chinese).

On the other hand, alternative treatments including traditional medicines such as *tunjuklangit*, *belalaigajah* and other supplements including *Pamoga* were reported by seven patients as part of the self-care practices to improve diabetes control. However, most of them were reluctant to tell the HCPs about their use of these traditional medicines. In fact, one of the patients reported that her blood glucose level increased rapidly after taking traditional medicines.

*"I took traditional medication, but I never tell the doctor. I don't know why I didn't tell. Every time I feel like telling, but every time it slips out of my mind"* (63 years old, Female, Malay).

*"I took belalaigajah. I just wanted to try. But it doesn't work. After taking that drink and I came and check at the clinic, my glucose level had gone up sharply, reaching 22mmol/L"* (57 years old, Female, Malay).

### **Diabetes patients' perceptions of encounters with primary health care providers**

#### **Encounters with doctors**

The majority of the patients reported that the doctor spent about ten minutes or less for each consultation. Generally, it was found that time constraint and the lack

of communication skills influenced the patient-doctor relationship and limited patient engagement. Most frequently, the doctors were reported to do most of the talking, while patients had limited opportunities to raise their concerns or had to be selective in raising their queries or seeking information regarding diabetes care. The doctors would use scare tactics, giving instruction or telling patients what to do instead of giving the opportunity to patients to make an informed decision. Most patients felt that their concerns were not addressed and that they were hardly involved in decision-making. A patient even indicated that she refused to share her thoughts as she felt the doctor didn't listen nor understand her problems.

*"Sometimes I actually don't know what to say. We can't simply say anything unless it is a counselling session. Many people are waiting outside for their turn, so I can only be selective to what I want to ask"* (46 years old, Female, Indian patient, and Malay doctor).

*"The doctor gave me additional 2 units for insulin injection. I told her I didn't want, I want 14 units only. She said she wants me to try to add another 2 units. So what to do, I just follow"* (56 years old, Female, Indian patient, and Malay doctor).

*"This doctor likes to tell us what we are supposed to do. The way he speaks, he sometimes likes to scare people also"* (65 years old, Male, Chinese patient, and Indian doctor).

*"No, I am lazy to tell him about my problem. He talked too long and too much"* (64 years old, Female, Malay patient and Malay doctor).

In addition to limited patient engagement, the study also found that the consultations were affected by language problems and the use of medical jargon. Some patients stated that they found it difficult to understand the messages or information on diabetes care provided by the doctor, especially if they didn't understand Malay or English or the doctor used too many medical terms.

*"Good, good, but he says a lot of things, which I don't understand"* (61 years old, Female, Chinese patient, and Indian doctor).

*"But the words that the doctor said, I don't understand. I didn't ask her either; I felt it was unnecessary. I don't understand English"* (66 years old, Male, Malay patient and Malay doctor).

With regards to the content of the consultation, the patients indicated that doctors were mostly focused on reviewing the screening results, examination, diagnosis and treatment. It was found that either a minimum patient education was given, or if it was provided it might not tally with patients' situation, lifestyles, habits or preferences that made it difficult for patients to adopt or adjust accordingly.

*"Just now she checked, she asked, and then she said there was a need to do eye check this year. Then she said my heart is OK, blood pressure OK, Ah...I think that's all. No further explanation"* (53 years old, Male, Indian patient, and Malay doctor).

*"I just communicate according to my current situation and answered to certain things that the doctor asked such as medication...and then general things like...exercise. But she won't go that much into details. She won't know"* (46 years old, Female, Indian patient, and Malay doctor).

*"He told me to eat water spinach, but my body can't take it. It's like catching a cold. He doesn't even know that. I was too lazy to tell him. He said just take green vegetables, rice is twice a day or once ... lunch only, dinner take bread or chapatti but we are Malays, we seldom eat chapati. I am lazy to tell him all these things. I shut up. He does not know our food"* (64 years old, Female, Malay patient and Malay doctor – who the patient mistook to be Indian).

Most patients expected the doctor to spend more time to build rapport, explain the disease, screening results and diabetes-suitable diet in detail with simple language.

*"Give a lot of explanation about the disease, at what stage. To start to communicate and build rapport"* (63 years old, Female, Malay patient, and Malay doctor).

*"Spend longer time means the doctor is concerned about the patient, right?"* (40 years old, Female, Malay patient, and Indian doctor).

*"One of the things is, the doctor always gives advice. She did give advice, but I don't understand completely. If she could make it simpler so that I could understand"* (62 years old, Female, Malay patient and Indian doctor).

### Encounters with nurses

Most patients indicated that the nurse normally took less than five minutes to check their blood pressure, weight (and height when required), and blood sugar at

the screening counter. Despite most nurses were friendly, there was lack of communication, interaction, and rapport between nurses and patients during the screening session. Several patients reported that some nurses provided brief interpretation on the screening results. However, the majority of the patients said that most nurses would refer them to the doctors.

*"No question, only tell me where to go next! They always....the nurses here....they always tell you to talk to the doctor"* (60 years old, Male, Chinese patient, and Malay nurse).

*"She took my blood pressure 2-3 times. I asked why and she said that my blood pressure was high. Then I asked her whether it was due to the new medication prescribed by the doctor last month. She didn't say anything and just asked me to check with the doctor"* (75 years old, Male, Malay patient, and Malay nurse).

However, when patients were asked about their expectations to the nurses, most of them stated that they were satisfied with their services and they perceived that the nurses had met their job roles. They stated that they understood that the nurses wouldn't be able to provide details information due to the time constraints and patient load. While some patients indicated they wished to have some advice from nurses, the majority of the patients expected the doctors to provide such services. Nonetheless, the patients also felt that the nurses should be trained if they were expected to advise patients.

*"If she wants to give advice, it takes a long time and many people are waiting. So she just needs to do what she has to do. She is only required to take information and pass it to the doctor. She is not a doctor; she doesn't need to give advice. It is not her field"* (60 years old, Male, Malay patient, and Malay nurse).

*"With the modern technology, they should read more. The Ministry of Health has provided them with latest guidelines, so they should read. Not only for doctors, but nurses also, because they are closer to the patients. And they need to attend more training before they can give advice"* (58 years old, Male, Malay patient, and Malay nurse).

### DISCUSSION

This study showed that there was lack of knowledge of the biomedical aspects of diabetes among most of the diabetes patients though they had been living with diabetes for an average of 8.8 years. This was consistent

with other earlier studies conducted in Malaysia (Al-Qazaz *et al.*, 2011, Ali & Jusoff, 2009). Nearly all patients stated that they were unsure about of the type of diabetes they had, and most of them perceived diabetes to be caused by inheritance and to be part of the normal aging process. Although studies conducted in Malaysia (Ali & Jusoff, 2009) and Singapore (Lee *et al.*, 2017) reported that older patients or patients living longer with diabetes had better understanding and control of the disease compared to younger or newly diagnosed patients, it was not observed in this study.

The lack of sufficient understanding about diabetes might explain why the majority of the patients perceived diabetes as an inevitable medical condition and had low motivation and commitment to diabetes self-management. While a small group of the diabetes patients reported that they tried to improve diabetes control through healthier lifestyles, most of them only passively followed the prescribed medication and perceived healthy lifestyle changes such as diet change and exercise as challenges. Studies conducted in Malaysia (Al-Qazaz *et al.*, 2011, Ali & Jusoff, 2009) as well as other countries such as Ghana (Kugbey *et al.*, 2017) and Nigeria (Adejoh, 2014) reported that inadequate diabetes knowledge and passive attitudes would lead to difficulty with self-management, particularly the ability to adopt a healthy lifestyle. A study from Ireland by Collins *et al.*, (2009) stated that “passive follower” or “non-conformist” patients had more difficulties in adhering to prescribed self-care regimes and achieving their glycaemia target compared to the “proactive” patients.

While most of the patients indicated medication as the only strategy that they adopted for diabetes management, non adherence with medication was commonly reported. The fear and rejection of insulin, the complexity of the dosage and timing of medical regimen, forgetfulness, and experiences of adverse effects were found as the factors associated with non-adherence to medical treatment. In addition, the use of traditional medicine as an alternative means of improving diabetes management was also a concern as the anti-diabetic and toxicological effects of these traditional plants or medicines were yet to be scientifically explored (Sekar *et al.*, 2014). The reported barriers to medication adherence and use of alternative treatment were also addressed in earlier studies conducted in Malaysia as concerns that might lead to poor diabetic control and diabetes-related complications (Ali & Jusoff, 2009, Al-Qazaz *et al.*, 2011,

Lee *et al.*, 2012, Low *et al.*, 2016).

The causes of the short-comings identified in terms of perceptions, attitudes and practices are many and complex, including individual as well as structural factors. However, high-quality DSME is an essential key to assist patient to understand the disease, adapt to life transitions, overcome barriers, have better adherence and reduce the risks of complications (Powers *et al.*, 2015). Overall, this study found that most of the patients had received a minimal level of DSME and support due to the limited time allocated to interaction or consultation with the HCPs. At most time, the doctor’s consultation was mainly focused on medication adherence and barely touched on the other aspects of self-management that were tailored to the needs and background of diabetes patients. These findings were consistent with our view in Malaysia by Ramli & Taher (2008) as well as a qualitative study conducted in USA (Kruse *et al.*, 2013), which indicated that doctors devoted most of the consultation time to quantitative measures such as blood sugar test results and glycaemia targets, compared to other self-management activities. The lack of discussion of the patients’ social context, needs, priorities and barriers to self-management activities such as diet and exercise could contribute to poor self-management and non-adherence.

The present study found that there was a lack of patient-centred communication skills among HCPs in terms of relationship building, identifying and responding to patients’ concerns and involving patients in decision making. Communication tended to be clinician-centred, with doctors dominating the conversation by using directive speech and scare tactics. The lack of a patient-centred approach identified in this study was similar to the findings of a qualitative study conducted in Germany, which indicated that it could affect the quality, effectiveness and outcomes of DSME (Hudelson *et al.*, 2013). Studies conducted in USA (Heisler *et al.*, 2007, Piette *et al.*, 2003, Gabbay *et al.*, 2013, Kruse *et al.*, 2013) and South Korea (Kang & Gu, 2015) showed that patient-centred communication style or motivational interviewing that focused on patients’ priorities, obstacles to self-management and strategies for overcoming obstacles and involving patients in decision making would improve the HCP-patient relationship, patient satisfaction, trust, attitude, confidence and lead to better self-management outcomes.

Language problem and the use of medical jargon by

HCPs were also identified by as barriers for the patients to obtain quality DSME, particularly for older patients, who were not well-versed in Malay or English and not accompanied by anyone during the consultation. Studies conducted in Germany (Hudelson *et al.*, 2013), Singapore (Zheng *et al.*, 2012) and USA (Chaufan *et al.*, 2013) reported that diabetes patients who were not proficient in the language and mores of the dominant culture encountered greater challenges in accessing the DSME and a higher risk of diabetes related complications. In contrast, studies by Toobert *et al.* (2011) and Tang *et al.* (2012) showed that DSME and support that was culturally adapted would have more positive and enduring effects on lifestyle intervention.

In order to increase the quality of DSME, it is critical to review the existing system at primary healthcare clinics in Malaysia. The patient-centered care needs to be strengthened through a team-based approach, training in effective communication and patient engagement skills. Language barriers in DSME need to be addressed and provision of interpreters should be taken into consideration when necessary. In light of the time and human resources constraints, task-shifting of DSME from doctors to nurses has been shown to be a viable option as many studies have shown that nurse-led DSME can improve glycaemia control and reduce cardiovascular risk factors among older people (Tshiananga, 2012, Gabbay *et al.*, 2013, Mulder *et al.*, 2015). Nurses can be trained and given a more significant role to communicate with the patients. If these DSME shortcomings are addressed, it is likely to have a positive impact far beyond diabetes per se.

## CONCLUSION

Overall, the study found that Malaysian diabetes patients need more knowledge about the biomedical aspects of diabetes and self-management tools to better cope with diabetes. Most patients lacked motivation to actively engage in lifestyle changes dim proves their self-care management skills. The explanations for this are multifaceted, and it is important to look at the individual as well as structural reasons and not just blame individual groups. The study showed that DSME is an important area of improvement, in terms of time allocation, HCPs communication skills and choice of language. A concerted effort to address these issues within the Malaysian primary health care services is likely to significantly improve both diabetes care and

national public health services more generally.

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