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Barrier of Self Care Management on Urban Type 2 Diabetic Patients in Bali I Dewa Putu Gede Putra Yasa¹, VM Endang SP Rahayu¹, I Made Widastra¹, I Ketut Labir¹, Ni Made Wedri¹, Ni Luh Kompyang Sulisnadewi¹ ¹Nursing Department, Polytechnic, Ministry of Health, Denpasar Bali ABSTRACT Successful glycaemic control could be achieved by diabetes self-care management. The purpose of this study was to explore the barrier of diabetes self-care management to type 2 diabetes patients in urban living.

This study used a descriptive phenomenology design. The study was conducted at Mengwi village, Badung regency, Bali, with 20 participants was selected through purposive sampling. The data was collected using the in-depth interview.

The result of the study showed most of the participant was male, the age was ranged between 45-60 years old and have been suffering from diabetes mellitus for 5-12 years. Three factors were found related to being the barrier of diabetes self-care management: lack of knowledge of diabetes management, lack of glycemic control, and complications of diabetes management. From the results, it can be concluded that patients with type 2 diabetes mellitus have been having trouble with doing self-care management.

The type 2 diabetes mellitus patients experienced difficulties in performing diabetes self-care management. Keywords: Barrier, Self-care management, Diabetes Mellitus INTRODUCTION In the last two decades, there has been an increase in the number of diabetic patients worldwide. Changes in human behaviour and lifestyle have resulted in a dramatic increase in the incidence of diabetes in all over the world 1.

According to WHO prediction, there has been increasing number of DM patients in Indonesia from 8.4 million in 2000 to around 21.3 million people by 2030. According to

the International Diabetes Federation, in 2009 the number of people with DM is predicted to increase from 7.0 million in 2009 to 12.0 million by 2030. Despite the prevalence rate difference, both reports show an increase in DM patients by 2-3 fold in 2030^{2,3}.

A poor diabetes mellitus management may lead severe complication⁴. The complications that may occur include diabetic ketoacidosis, hyperglycemia, hyperosmolar, nonketotic coma, hypoglycemia, retinopathy, nephropathy, neuropathy, angina, myocardial infarction, peripheral vascular insufficiency accompanied by intermittent claudication and gangrene of the extremities and cerebral insufficiency and stroke⁵. The incidence of DM patients who had a stroke in America in 2011 amounted to 36.6%. This number has increased from the previous year in 2010 by 35.7%⁶.

A successful glycemic control can be achieved by performing good self-care management.^{7,8} Mathew, et., al,⁹ found some themes about the experience of DM patients carrying out self-care management is implementing self-care DM management make them different from others, difficult to manage diet, and needed social support. The study by Carolan, et., al¹⁰ found that the DM patients' experience in diabetic self-care management which is DM is a hidden disease, a life struggle, working on DM management and support of health resources and services. Research by Onwudiwe, et., al¹¹ stated that the things that affected implementation of self-care management in patients with low incomes were lack of knowledge regarding the target of glycemic control and some given health information were confusing.

MATERIALS AND METHOD This study used descriptive phenomenology design which aimed to determine the barrier in performing DOI Number: 10.5958/0976-5506.2018.00469.2 364 Indian Journal of Public Health Research & Development, May 2018, Vol. 9, No. 5 self-care management in patients with type 2 diabetes mellitus. This research was conducted in Mengwi Village.

The participant criterion in this research was no communication disturbance, age 40-60 years old and have suffered type 2 DM at least 5 years. Ten participants were recruited. Data were collected through in-depth interviews with participants. **RESULTS AND DISCUSSION** The study found three themes. These themes (1) Lack of knowledge about management diabetes mellitus, (2) lack of ability in glycemic control management, (3) Complexity of diabetes mellitus management.

Insufficient knowledge concerning the management of diabetes mellitus. When participants were asked about the obstacles in performing self-care management of Diabetes Mellitus they mostly said that they had less understanding of diabetes mellitus

management. Similar statements were revealed by other participants.

Basically, of the ten participants, the topic of less understood and less aware of the **management of diabetes mellitus** continuously repeated. This theme is derived from the analysis of several categories of knowledge about eating arrangements, knowledge of physical activity, knowledge of foot care and knowledge of weight management. This is supported by the statement of some participants, namely: "I also do not understand about the size of the meal

how much I must eat and drink What can be eaten and drunk" (P1) "If I have to manage my own meal, I cannot afford it. Because I do not know exactly what foods are allowed, what foods are forbidden. Then how many foods I should eat... I do not understand how to calculate it" (P4) The participant's statement indicates that they are unaware of the dietary arrangements **for patients with diabetes mellitus.**

There are foods that may and may not to be eaten **for patients with diabetes mellitus** which is certainly very much so that the patient's caloric needs still could be fulfilled. Revealed in the interview, participants didn't comprehend the diet **for patients with diabetes** mellitus, although it has been described by health workers. Besides of the knowledge of eating arrangements, it was also revealed that they had no knowledge respecting to physical activity.

The physical activity, in this case, is exercise and other physical movements that produce sweat. This is revealed by some participants by stating that: "Is there any benefit to my illness? I have a disease with blood sugar, is exercise able to lower blood sugar?" (P1) "is there any effect of walking with sugar levels in my body?" (P2) The statement indicates that they were less aware of the benefits of exercise to blood glucose levels **for patients with diabetes mellitus.** Further reveals the knowledge about foot care.

They revealed that they are less aware of foot **care for patients with diabetes mellitus.** This is supported by the participant's statement: "I cannot take care of my feet... I do not understand how" (P1) "I do not know if it should be specially treated" (P3) "I do not understand if the foot should be treated properly" (P5) "...because I do not understand how to take care of my feet, sir.

All I do is take a shower and wash my feet. that's all, sir" (P6) "I also do not know if the feet need to be treated" (P7) Statements about foot care are mostly revealed. There were five participants who revealed that they lacked understanding **of foot care in patients with diabetes mellitus.**

They say that the main obstacle for them not to do the diabetes mellitus foot care for because they do not understand the treatment of the foot. Furthermore, respect to the knowledge of weight management, it was also acknowledged that they barely comprehended the weight management **for patients with diabetes mellitus.**

This was supported by the participant's statement: "I do not know why I have to set my weight... how much weight I should have..." (P1) "I do not understand how to regulate my weight... does it have to be regulated?" (P2) "Is fat the cause of the rising of blood sugar?... I do **Indian Journal of Public Health Research & Development,** May 2018, Vol. 9, No.

5 365 not understand the fat thing" (P3) This result was in accordance with a study by Onwudiwe, et al. 11 that the main obstacle in conducting self-care management **for patients with diabetes mellitus** with low income is the lack of knowledge about the target of blood glucose level and blood pressure. These results indicate that knowledge is a major obstacle for low-income patients with diabetes.

The lack of such knowledge causes them to be incapable of carrying out the **management of diabetes mellitus** independently. Another study by Bruno et al, 12 found that the **limited knowledge and skills** of patients and clinicians in determining the target of glucose, blood pressure and cholesterol. These limitations become an obstacle to achieve the goal **of diabetes mellitus type 2** management.

So the knowledge was also a constraint in achieving the goals. This was in line with the results of the study by Alzubaidi, et al 13, that lack of knowledge about health care affects the comprehensiveness of the treatment of **patients with diabetes mellitus.**

It was **also said that the** lack of such knowledge will affect how patients manage their disease and where they are seeking appropriate services. Research by Jansiraninatarajan 14, found the theme of knowledge level regarding the causes, complications and **management of diabetes mellitus** to be one that contributes to the adherence of blood glucose management. A research by Scha'fer, et al.

15 found that lack of knowledge about diabetes mellitus became an obstacle in developing education **in patients with diabetes mellitus.** This indicates that the knowledge factor becomes very important in developing the patient's capacity so as **to be able to** independently manage the disease. Insufficient ability in glycemic control management is revealed in two categories: the ability to examine the blood glucose itself and the ability to determine glycemic control targets. The inability to examine blood glucose alone is a constraint that arises in in-depth interviews.

Some of these reveal: "I check on own... it's difficult..." (P1) "I cannot check it myself, sir... I do not quite understand how and I'm afraid I do it wrong"(P4) "I check myself, it's hard and requires special skills ..." (P5) "I cannot check my own blood sugar..." (P8) Another obstacle that could be seen was the ability to determine the target of glycemic control.

They were less likely able to determine blood glucose target for patients with diabetes mellitus. Some participants expressed the following: "I do not understand how much blood sugar I should maintain... so is my sugar normal or not, huh... I don't know..." (P1) "I do not understand, blood sugar should be how many, huh? My blood sugar is said to be high and sometimes said to be low ...

I do not understand" (P3) "I not how fit me... my knowing, my blood sugar is already high" (P5) Inability to managing glycemic control becomes an obstacle to patient compliance. Determination of fasting blood glucose target is highly important in achieving the diabetes mellitus management level. This is in accordance with Perkeni 2 which says that patients should monitor target of diabetes mellitus control in order to be able to assess the success rate of its management.

The results of this study were supported by Onwudiwe11, which found that inability to determine the target of blood glucose and blood pressure became an obstacle in performing self-care for patients with diabetes mellitus. DM patients independently determine their blood glucose and blood pressure targets according to their current health condition.

Another supporting study by Liliana 16 who found also that glycemic control is one of obstacles in performing self-care management. It is also said that ability to determine blood glucose levels both high and low become important in management of diabetes mellitus. Research by Sarah 17 found that the barrier related to diabetes care became one of themes that emerged in obstacles experienced by a pregnant woman with diabetes mellitus. According to Perkeni2, the control criteria are based on the results of examination of glucose levels, HbA1C levels, and lipid profiles.

A well-controlled definition of DM is when blood glucose levels, lipid levels, and 366 Indian Journal of Public Health Research & Development, May 2018, Vol. 9, No. 5 HbA1C meet expected levels, as well as nutritional status and blood pressure, conform to the prescribed target. So the determination of the targets is the determinant factor for the successful DM management. Participants revealed their difficulties in setting lifestyle.

They said it was difficult, complicated, and other phrases that contain the fact that it was

so complex. The most common difficulties revealed were the schedule setting, the amount and type of food to be consumed. It was supported by the following participant expressions: "To the is and sir... It is said that the quantity should be measured... well... that's the difficulties, sir" (P5) "I it difficult arrange meal choosing the food to eat as well" (P6) "I cannot set up my meal, sir... because it is complicated... this one is allowed, that one is not allowed" (P10) Disclosure of other constraints by participants was the regulation of body weight. Weight was difficult to control because often feel hungry.

This statement was expressed by some participants: "...and managing body weight is complicated, sir..." (P1) "Because of eating too much due to hungry, my body like sir... can my I'm fat, aren't I?" Another disclosure was the regulation of blood glucose levels. They complained about the high blood glucose levels. It was very difficult **to regulate blood glucose levels** to achieve the desired target.

This statement was expressed by the participants: "So, my normal not? don't (P2) "My blood sugar sometimes goes up sometimes go down... and that makes me confused to control it" (P6) This complexity was one of the obstacles that patient was unable to manage the DM independently. Another study by Carolan, 10 found that one of the themes, which was the life struggle to treat diabetes in **patients with type 2 diabetes mellitus**.

It was revealed that how difficult the struggle in managing diabetes mellitus. It was illustrated that the difficulty of self-managing and requires full concentration to set meal schedules and choose the food. The study by Liliana 16,18 found a difficulty in regulating diet for type **2 diabetes mellitus patients** including difficulty in regulating the quantity, quality and type of food; the confounder in controlling their selves in confronting the problem of eating. It was also found some physical activity constraints.

The limitation **of this research was** location of interview which was concentrated in one place, because of difficulty of locating the participant's home. This **may have an impact on the** flexibility and openness of participants when answering a researcher's question. Age range of participants between 40-60 years **which may have an impact on** generalizations, allowing the emergence of various opinions or statements from younger participants associated with barriers in self- management.

CONCLUSION Based on **the findings of this** study, **it can be concluded that** found three themes related to the barrier in performing self-care **management of diabetes mellitus** in **patients with type 2 diabetes** as follows 1. Lack of knowledge about management of diabetes mellitus, 2. Lack of ability in glycemic control management, 3. Complexity in diabetes mellitus countermeasures.

It is expected for the next researcher to determine the location of the interview was agreed by both parties in advance so that participants more freely in answering the questions of researchers. The participants' stipulation is expected to be more equitable in terms of residence, age and occupation, as this will impact on the opinions of the participants.

Conflict of Interest: None Ethical Clearance: Ethical clearance by Polytechnic, Ministry of Health, Denpasar Bali Source Funding: Source funding from Indonesia Ministry of Health *Indian Journal of Public Health Research & Development*, May 2018, Vol. 9, No. 5 367
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