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## The Consumption of Traditional Medicine by Type 2 Diabetes Mellitus Patients at the Public Health Center of Panjatan in The Regency of Kulon Progo as a Case Study

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### ABSTRACT

**Background:** The consumption of traditional medicine is common in most societies including patients with type 2 diabetes mellitus (T2DM). **Objectives:** The study aimed to determine the factors that cause patients with T2DM in the working area of Panjatan Kulon Progo Health Center to use traditional medicine and their knowledge of diabetes mellitus. **Methods:** This study is a qualitative research with case study approach. The data were obtained through focus group discussion involving 56 patients with T2DM. The data were analyzed by qualitative analysis techniques from Miles and Huberman. **Results:** Factors that influence the motivation of patients with T2DM to use traditional medicine include: (1) they are following advice from friends or relatives who have consumed traditional medicine that is considered successful, or (2) they are not believing in the medical doctor's treatment. The economic and distance factors are not their consideration. The T2DM patients who have consumed traditional medicine but have now stopped have the following reasons: (1) they are asked to stop in consuming traditional medicine by medical doctors; (2) they said that it is not practical how to mix traditional medicine so that they become lazy to consume traditional medicine; or (3) the supply of traditional medicine is easily depleted. In addition, from this study it also known that some T2DM patients understand very well about the disease they suffer, while some others do not have enough knowledge about T2DM. **Conclusion:** The T2DM patients' choices in consuming traditional medicine are due to various factors, i.e. the trust of medical doctors, following advice from friends or relatives as well as sufficient knowledge about the effects of traditional medicine. This study also found that generally, most T2DM patients understand the disease they suffer.

**Keywords:** type 2 diabetes mellitus, modern medicine, traditional medicine, Indonesia

### INTRODUCTION

Diabetes mellitus is a major health problem in the world. The prevalence of diabetes mellitus in the USA in 2010 included almost 27 million people who were suffering from diabetes mellitus (12.3%), whereas in the UK there were 3.6 million people suffering from diabetes mellitus. The prevalence of diabetes has doubled every 20 years in the UK since the end of the Second World

War. Cases of diabetes mellitus also occur in poor countries and developing countries, including Indonesia. Indonesia in 2010 was ninth in the number of people with diabetes mellitus and is predicted to be sixth in 2030<sup>1</sup>.

One of the provinces with a high number of diabetes mellitus sufferers is DI Yogyakarta Province. Diabetes mellitus in Yogyakarta is included in the top ten diseases in

the Puskesmas, which is in fifth place based on the profile data of the DIY province health service in 2013. One of the districts in DI Yogyakarta Province where many people suffer from diabetes mellitus is Kulon Progo Regency. Based on data from the Kulon Progo District Health Office, diabetes mellitus is one of the top ten diseases of all age groups, reaching the sixth place in Kulon Progo Regency.

Type 2 diabetes mellitus (T2DM) is one of the categories of diabetes mellitus in which patients with diabetes have hyperinsulinemia but insulin cannot bring glucose into the tissues due to resistance<sup>2</sup>. Severe insulin resistance is caused by a mutation in the insulin receptors, although rarely causing death<sup>3,4</sup>.

In addition to modern medicine, diabetes mellitus sufferers also use traditional medicine in an effort to cure their disease. Traditional medicine is one of the seventeen kinds of health efforts organized under Law No. 36 of 2009 concerning Health<sup>5</sup>. Traditional medicine in Indonesia has developed since centuries ago which can be seen from historical relics in the form of temple reliefs and ancient writings<sup>6</sup>. In addition, traditional combatants usually use traditional medicine which are better known as herbal medicine. Traditional medicine itself is a mixture of ingredients in the form of plants, animal materials, mineral materials, preparation of ingredients, or a mixture of these ingredients and has been applied from generation to generation according to the norms in the community<sup>7</sup>. Strengthening traditional medicine is done by using medicinal plants in primary health services that have been agreed upon in the world at the World Health Organization (WHO) meeting in Almaata in 1978<sup>8</sup>. Since 1991 until now, the WHO has made guideline regulations in research on the efficacy and safety of traditional medicine as an international standard.

Kulon Progo Regency is one of the districts in DI Yogyakarta Province where many people suffer from diabetes mellitus. In addition to modern medicine, people with diabetes mellitus in Kulon Progo Regency also use traditional medicine, both as a supplement and as a basic treatment. This study was conducted with the aim of knowing the motivation of T2DM patients in using traditional medicine and knowing the level of knowledge of T2DM patients regarding diabetes mellitus in general.

## RESEARCH METHODS

This study is a qualitative research with case study approach. The main target of this study is T2DM patients at the Public Health Center of Panjatan in Regency of Kulon Progo working area. This study was conducted in the Public Health Center of Panjatan I and Public Health Center of Panjatan II (PP), County of Panjatan, Regency of Kulon Progo in February-March 2017 with the informant variables, namely diabetes mellitus patients who seek treatment at the health center but still use traditional medicines diagnosed with less than 10 years and people with diabetes mellitus who seek treatment at the health center but still use traditional medicines diagnosed 10 years or more. The inclusion criteria are T2DM patient in PP work area and willing to be the participant in this study,

while exclusion criteria are diabetes mellitus patient less than 18 years old.

The study data were obtained through observation of the public health centers and Focus Group Discussion (FGD) activities conducted on 56 patients with diabetes mellitus where 26 patients are from Public Health Center of Panjatan I and 30 other patients are from Public Health Center of Panjatan II. The FGD process was recorded using a tape recorder; the atmosphere of the FGD was described in writing by an observer. The FGD activities were done in conjunction with Prolanis activities at the Puskesmas so that the time spent doing FGD was limited. FGD results data were analyzed using qualitative data analysis techniques from Miles and Huberman which included four steps: data collection, data reduction, data presentation, and inferences. In this study the results of the recording of the FGD were transcribed by the researchers and the results of the transcripts were read and analyzed separately by three coders, then grouped into the themes and sub-themes that emerged. After coding was done by the three coders who were second-level students of the Medical Faculty of Family Medicine and had almost the same level of knowledge about traditional medicine and had experience in coding. The coding results were discussed three times to achieve saturation. Presentation of results data was made in the form of a matrix or chart. This approach was done to facilitate conclusions from the field by comparing the suitability of statements from research subjects with the meaning contained in the basic concepts in the study.

## RESULTS AND DISCUSSION

Based on FGD results data which have been done in this study, the following findings were found:

## 1. The motivation of patients using traditional medicine until now.

Table 1. Motivation of patients using traditional medicine until now

No	Subtheme	Quotation	Amount appears
1	Join friends or relatives who have already used traditional medicine and according to them succeed	<i>"... I used to drink red betel. I used to be amputated, and routine to the public health center, and drink red betel, so I do not become amputated ..."</i> <i>"Yes, I never once, because it is given by friends and always drink the insulin leaves, so this will more quickly lower glucose levels"</i>	23
2	Do not believe in doctor's treatment	<i>"... but I believe by the doctor, yes, I use a prescription and now still the same, that is using red betel as much as 3 sheets. If I do not do that, yes how else, I am old, but the soul is still like that, such as eating irregularly, so we can not only consume medicines, but there must be a side drink."</i> <i>"Drink herbs fit acute relapse disease, hence the need to drink herbs that tasted bitter."</i>	2
3	Feel there is the effect of traditional medicine on the lower blood glucose level	<i>"If I ever consume cucumbers, my glucose is high, I grate it, I continue to drink that water after I squeeze and drink. The result is down."</i> <i>"I once consumed (traditional medicine), hmm ... but I do not know the name of the medicine, my nephew who resides in Jakarta if returning here always bring it, I am given the medicine and I am told to drink ... I feel there is a change in my body, i.e. my glucose level has gone down."</i>	14
4	The fear of kidneys is damaged if taking long-term chemical medicines	<i>"... Is it true that people suffering from diabetes mellitus should take chemical medicines on a regular basis, fear the effects of kidney damage, so try herbal remedies, we must find a safe solution for not taking medicines that adversely affect the kidneys?"</i>	1

## 2. The motivation of patients who have used traditional medicine, but now stopped.

Table 2. Motivation of patients who have used traditional medicine, but now stopped

No	Subtheme	Quotation	Amount appears
1	Requested to stop by the doctor	<i>"I used to drink once it is immediately consul by the doctor, and I am not allowed to consume the medicine, so I stopped consuming."</i>	1
2	Lazy to use, because it is not practically mix	<i>"I've tried insulin leaves, whatever I've ever consumed, but have to bother to boil every day so it does not continue so."</i> <i>"Never tried to boil and drink, but why to bother every day boil, so I stop and just take medication from the public health center, and now there are more comfortable."</i>	2
3	The raw materials dilute the medicine	<i>"Duvet skin has been consumed, and I've been bored for a long time because it's hard to find it, so I stopped consuming."</i> <i>"I feel there is a change that is my glucose level down. Now I do not consume anymore, because it is up."</i>	2
4	There is no traditional medicine effect on decreased blood glucose level	<i>"... if after drinking herbal medicine there should be a change, but there is no effect no change, just the same can only taste bitter."</i> <i>"Never, no effect is high above 500, yes I stopped consuming. Treat here only."</i>	3
5	The disease has healed	<i>"Honey bitter, drinking already 4 bottles. Now it's no longer drinking because the wound is healed. I used to cut my legs."</i>	3

## 3. The motivation of patients who do not use traditional medicine.

Table 3. Motivation of patients who did not use traditional medicine

No	Subtheme	Quotation	Amount appears
1	Fear of medicine side effects	<i>"No problem, I am afraid of side effects."</i> <i>"This experience, now many agents that herbal medicine called chlorophyll, if drunk will be healed, so he became a member, he warned not to take herbal medicine, it can cause terrible poisoning, that is up to 30 cm intestinal seizures due to poisoning, the intestine should be cut, but the right leg next swollen, therefore ..."</i>	8
2	Trust full of doctor's treatment	<i>"Because you already believe the same medicine from the doctor."</i> <i>"Never, my problem since here is given advice by doctors to take medication metformin is enough, only if high glucose 3 times a day if it is normal 2 times a day"</i> <i>"I time before glucose like to drink but after this glucose never drinks, the problem has been taking medication from the public health center, on the basis of after taking medicines never drink another. It used to be when my body is delicious twice a day sometimes once, but if the body is not good, I drink 2 times 3 times every day ..."</i>	16

## 4. Patient knowledge about traditional medicine.

Table 4. Patients' knowledge of traditional medicine

No	Subtheme	Quotation	Amount appears
1	Side effects	<i>"I never find out the side effects of herbal medicine... According to a good friend yes I agreed."</i>	17
2	How to mix	<i>"How to mix I can get from a friend."</i> <i>"I just think about it. Ordinary 4 cups of water continue to be boiled down to about 1 glass of water."</i>	2

## 5. Origin of traditional medicine.

Table 5. Origin of traditional medicine

No	Subtheme	Quotation	Amount appears
1	Buy at pharmacies or agents	<i>"Medicines gracias buy at pharmacies ..."</i> <i>"For diabetes, I use mangosteen peels, I happen to be a gracias agent, buy in pharmacies can also ..."</i>	7
2	Obtained from relatives and neighbors or taking in the garden	<i>"I get betel leaves from neighbors, many neighbors who plant."</i>	13

## 6. General patient knowledge of type 2 diabetes mellitus disease.

Table 6. General patient knowledge of T2DM disease

No	Subtheme	Quotation	Amount appears
1	Do not understand about type 2 diabetes mellitus disease		24
2	The idea of type 2 diabetes mellitus disease	<i>"Glucose diseases are caused either by heredity, diet."</i> <i>"Drinking medicines should be routine, later if not later glucose uncontrolled it appears complications."</i> <i>"Yes, must take regular medicine and a routine blood check."</i> <i>"Characteristic of frequent urine, hunger continues, thirst continues."</i> <i>"Can cause heart disease, kidney, and blindness."</i> <i>"Drinking medicines should be routine let stable glucose."</i> <i>"Need to be diligent exercise."</i>	10

## 7. How to take traditional medicine.

Table 7. How to take traditional medicine

No	Subtheme	Quotation	Amount appears
1	Along with oral hypoglycemic medicines	<i>"Yes together."</i>	19
2	Taking traditional medicine alternately with medicine from the doctor	<i>"I drink today routine medicine, tomorrow herbal medicine, next day regular medicine ..."</i>	1

Based on the above findings it can be explained some points as follows.

### 1. The motivation of T2DM patients in using traditional medicine

The motivation of T2DM patients in Public Health Center of Panjatan I and Public Health Center of Panjatan II areas in Regency of Kulon Progo to use traditional medicine includes among others: (1) join friends or relatives who have used traditional medicine that is considered successful, or (2) do not believe in medical treatment. The results of this study are consistent with research conducted in Jakarta, Yogyakarta, and Surabaya on diabetes mellitus patients' perception of traditional medicine. Most respondents sought traditional treatment on the advice of friends or family. The reasons they seek traditional treatment are, because of cheaper prices, services closer to their homes, feel more comfortable with traditional medicine, fear of the side effects of modern medicine, and the effectiveness of lower modern medicine<sup>6</sup>.

Successful experiences experienced by friends or relatives in the treatment of T2DM with traditional medicine also encourage T2DM patients to use traditional medicine for the treatment of the disease suffered. The results are confirmed by Kumar et al. who found that in 2006, about 71% of patients consciously use traditional medicine. Sources of information on traditional medicine are from friends (36.4%) and neighbors (25%). This decision is certainly accompanied by the hope that the success of healing experienced by friends or relatives can also happen to them. This finding is consistent with the opinions of Pudyastuti and Supardi et al. (in Jauhari et al.) which state that the use of traditional medicine is due to a belief in the efficacy of traditional medicine<sup>7,8</sup>.

Looking at the two backgrounds of patient motivation to treat T2DM using traditional medicine above, it can be seen that economic factors and distance are not their consideration. Costs are not considered, as almost all of them get financing from insurance (community health insurance, health insurance of civil servants, or regional health insurance). So also, with the distance, if they actually see that distance is an important consideration then they certainly will not rely on traditional medicine considering there are two public health centers in Panjatan so that the distance between home and the community health center is relatively affordable.

The reason for the use of traditional medicine tends to be multi-factorial but may be related to the perception of the

severity of illness, symptoms, and understanding of the disease. In addition, treatment knowledge, availability, and acceptability, in the case of conventional and alternative approaches, tend to influence patient decisions. For example, patients may believe that conventional diabetes mellitus medicines are beneficial in the management of diabetes mellitus, so there is less need for other therapies. Conversely, chronic conditions that provide pain may be poorly understood by the patient and conventional treatment cannot reduce pain so patients will think to seek additional treatment<sup>9</sup>.

Meanwhile, the reason for patients who have used traditional medicine but now stopped is caused by several things, namely: (1) asked to stop by the doctor, (2) lazy to use, because it is not practical how to mix, or (3) raw materials dilute medicines. Patients who consult physicians and physicians with a variety of medical considerations require that patients discontinue use of traditional medicine to be an important factor encouraging T2DM patients to discontinue use of traditional medicine. It is possible for physicians to recommend discontinuation of traditional medicinal uses due to side effects that may be caused by the medicines used, or inappropriate use of traditional medicines by the patient, whether ingredients, dosage, time, or mode of use. This is in line with the opinions of Hussin and Zhang who suggest that side effects of traditional medicine may occur because there are interactions among medicinal plants, misuse, and improper use of doses and duration of use. In the event of the inappropriateness of the use of such traditional medicine by the patient surely the doctor has to remind or recommend the cessation of the use of traditional medicine<sup>10,11</sup>.

Based on the FGD findings above, it can be seen that not all T2DM patients use traditional medicine. Patients who do not use traditional medicine are generally caused by two factors, namely: (1) fear of side effects of drugs and (2) full confidence in the doctor's treatment. Most patients use traditional medicine in hopes of helping their recovery but most users are disappointed. Few patients believe that traditional medicine is free of side effects<sup>12</sup>.

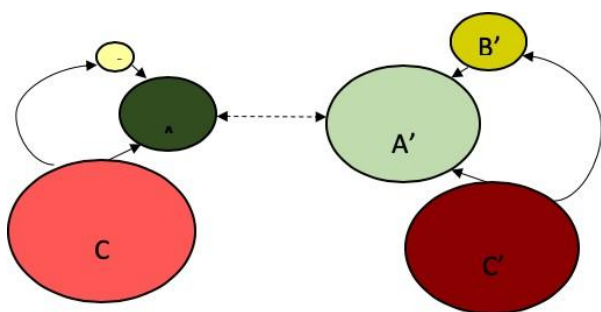
High trust in the treatment of doctors can also make patients entrust completely the treatment of T2DM that they suffer from to medical treatment from their doctors. This shows that doctors can be a factor that greatly influences the treatment method chosen by T2DM patients. Therefore, family doctors are very much needed to educate the public about T2DM disease, both about causes, healing processes, treatment, and also healthy lifestyle in society. The

potential for side effects of traditional medicine requires the presence of family doctors who are proactively present in the midst of the community to give their enlightenment<sup>13</sup>.

## 2. Type 2 diabetes mellitus patient knowledge of diabetes mellitus

The FGD results obtained the following information that the understanding of T2DM patients about the disease they suffer is various. Some patients understand about their illness; others do not have enough information about T2DM. This needs to be a serious concern for family physicians given the importance of increasing the understanding of T2DM patients about the illness they suffer. In addition, the patient should understand the treatment of T2DM is also very important and can influence the treatment process as well as the chosen healing methods, including the decision on the utilization of traditional medicine. Treatment of T2DM is not an instant treatment that immediately heals, but the process is sustainable over time. Therefore, the understanding of T2DM patients about the healing process is also very important so that patient can undergo treatment process successfully. The importance of increasing the understanding of T2DM patients has an implication on the important role of family doctors. The understanding of family doctors about the use of traditional medicine for patients with T2DM is necessary because there are still many T2DM patients who take traditional medicines to cure their disease<sup>14</sup>.

The results above can be described as in the picture below:



**Figure: Continuum of motivation in using traditional medicine of this study**

Legend:

A : The high motivation of traditional medicine use (N = 20)

B : Distrust of physician treatment (N = 2)

C : Low information on diabetes mellitus disease, traditional medicine (N = 36)

A' : The low motivation of traditional medicine use (N = 32)

B' : Believes fully medical treatment (N = 16)

C' : Sufficient information (N = 33)

Color gradation shows the difference in low motivation. The dashed line between A (the high motivation of traditional medicine use) and A' (the low motivation of traditional medicine use) indicates that the distance between A & A' is very far away.

Based on the above figure it can be understood that the motivation of high traditional medicine use: (A) is influenced by distrust of doctors, (B) less information about diabetes mellitus disease (duration of medicine consumption, complications that may occur, medicine use effect) and (C) traditional medicine information about the effects of traditional medicine on blood glucose levels, medicine reactions, side effects of traditional medicine). Condition A may change to A 'as well as A' may change to A. This change is strongly influenced by the information received by the patient (depending on the patient-physician communication).

Less information (C) will cause distrust of the doctor's treatment (B). This motivation will turn out to be low in using traditional medicine (A') if it gets sufficient information (C') (regarding diabetes mellitus disease and traditional medicine information) and has high confidence in physician (B'). Sufficient information (C') may also increase confidence in the physician. This sufficient information is obtained from intensive communication between physicians and patients. Good communication between the patients and doctors will result in a good understanding by the patient about the illness they suffer<sup>15</sup>.

## CONCLUSION

Based on the results of this study, it can be concluded that the motivation of patients in using traditional medicine is influenced by the level of confidence in the doctor and the level of understanding of patients about the disease, traditional medicine, and other information. Patients decide to use traditional medicine because they do not believe in the treatment of doctors, follow advice of friends or relatives who have already used traditional medicine and according to their success, and feel the effects of traditional medicine to lower blood glucose levels. In addition, the sufferer decides not to use traditional medicine or to stop taking traditional medicine due to full confidence in the doctor, told to quit by the treating doctor, fear of side effects, lazy to use, because it is not practical how to mix, the raw materials dilute the medicine, or there is no effect of traditional medicine on decreased blood glucose levels.

Based on the results of this study, it also can be concluded that patients with T2DM do not all understand the disease they suffer. Some patients with T2DM have a fairly good understanding of the illness they suffer. This information is usually obtained from doctors who provide information when the patient is consulting. Some of the other T2DM patients do not understand what causes their disease, how it needs to be cured, the risks of T2DM disease, and the steps to be taken after contracting T2DM. Some T2DM patients also do not understand how to live healthy to prevent or maintain T2DM that has been suffered in order not to get worse.

Based on the results of this study, the author suggests that T2DM patients need to have the right information about the illness suffered as well as the necessary treatment in order to take the right attitude in the face of the illness as well as determine the healing process. Researchers also

suggest that family doctors should be able to properly and wisely respond to the growing and evolving traditional treatment for T2DM disease in the midst of rapid advances in modern medicine. Family doctors need to improve patient knowledge about traditional medicine for T2DM disease in order to educate people about the disease they are facing. For public health centers, researchers have suggested that they need to improve the guidance and supervision of traditional medicine use for T2DM as part of the responsibility of the role of the public health center in providing health services for the community.

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### Ethical Approval and Informed Consent

This research has been approved by The Medical and Health Research Ethics Committee (MHREC) from Faculty of Medicine, Universitas Gadjah Mada, Yogyakarta with reference number KE/FK/0135/EC/2017.

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### Availability of Data and Material

Data and material can be accessed via corresponding author.

### Conflict of Interest

None.

### REFERENCES

- Holt RI, Hanley NA. *Essential endocrinology and diabetes*. New Jersey: John Wiley & Sons. 2012.
- Ndraha S. *Type 2 diabetes mellitus and current management*. Jakarta: Department of Internist Medicine, Faculty of Medicine, Universitas Krida Wacana. 2014.
- World Health Organization. *Definition and diagnosis of diabetes mellitus and intermediate hyperglycemia: report of a WHO/IDF consultation*. Geneva: World Health Organization. 2006.
- American Diabetes Association. *Standards of medical care in diabetes—2013*. *Diabetes Care*. 2013 Jan;36(Suppl 1):S11.
- Indonesia R. *Law of the Republic of Indonesia number 36 of 2009 concerning Health*. Jakarta: Republic of Indonesia. 2009.
- Aditama TY. *Traditional medicine & health, Edition II*. Jakarta: Publishing Agency for Health Research and Development Agency. 2015
- RI U. *Law of the Republic of Indonesia No. 36 about Health*. Jakarta: Republic of Indonesia. 2009.
- World Health Organization. *Development of traditional medicine in the South East Asia Region, Pyongyang-Korea*. Geneva: World Health Organization. 2005.
- Kasnodihardjo, Santosa SS. *Overview of Perceptions and Attitudes of DM Patients Against Traditional Medicine in DKI Jakarta, DIY, and Surabaya*. *Medika*. 2009; XXXV(8):520-526.
- Pudyastuti RR. *The method of communication and selection of patient treatment to guruh traditional medicine in the Special Region of Yogyakarta [Thesis]*. Yogyakarta: Faculty of Medicine, UniversitasGadjah Mada. 2000.
- Jauhari AH, Jauhari MS, Utami MS, Padmawati Hospital. *Patient's motivation and trust for treatment of since*. *Public Medical News*. 2008;24(1):1.
- Yeh GY, Eisenberg DM, Davis RB, Phillips RS. *Use of complementary and alternative medicine among persons with diabetes mellitus: results of a national survey*. *American Journal of Public Health*. 2002 Oct;92(10):1648-52.
- Hussin AH. *Adverse effects of herbs and drug-herbal interactions*. *Malaysian Journal of Pharmacy*. 2001;1(2):39-44.
- Zhang J, Onakpoya IJ, Posadzki P, Eddouks M. *The safety of herbal medicine: From prejudice to evidence*. *Evidence-Based Complementary and Alternative Medicine*. 2015;2015.
- Kumar D, Bajaj S, Mehrotra R. *Knowledge, attitude and practice of complementary and alternative medicines for diabetes*. *Public Health*. 2006 Aug 1;120(8):705-11.