Assessment

Table 1. Results of Depression Screening with Geriatric Depression Scale **(GDS)**

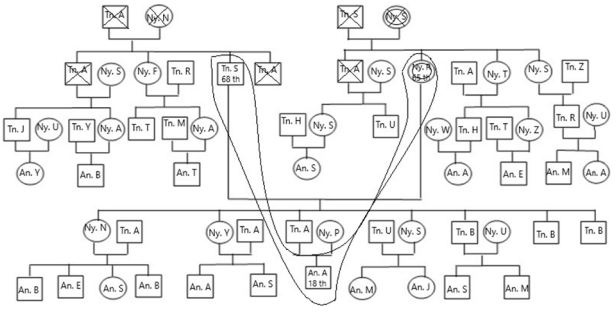
1	Apakah anda sebenarnya puas dengan kehidupan anda?	YA	**TIDAK**
2	Apakah anda telah meninggalkan banyak kegiatan dan minat atau kesenangan anda?	**YA**	TIDAK
3	Apakah anda merasa kehidupan anda kosong?	**YA**	TIDAK
4	Apakah anda sering merasa bosan?	**YA**	TIDAK
5	Apakah anad mempunyai semangat yang baik setiap saat?	YA	**TIDAK**
6	Apakah anda takut bahwa sesuatu yang buruk akan terjadi pada anda?	**YA**	TIDAK
7	Apakah anda merasa bahagia untuk sebagian besar hidup anda?	YA	**TIDAK**
8	Apakah anda sering merasa tidak berdaya?	**YA**	TIDAK
9	Apakah anda lebih senang tinggal di rumah daripada pergi ke luar dan mengerjakan sesuatu hal yang baru?	**YA**	TIDAK
10	Apakah anda merasa mempunyai banyak masalah dengan daya ingat anda dibandingkan kebanyakan orang?	**YA**	TIDAK
11	Apakah anda pikir bahwa hidup anak sekarang ini menyenangkan?	YA	**TIDAK**
12	Apakah anda merasa tidak berharga seperti perasaan anda saat ini?	**YA**	TIDAK
13	Apakah anda merasa penuh semangat?	YA	**TIDAK**
14	Apakah anda merasa bahwa keadaan anda tidak ada harapan?	**YA**	TIDAK
15	Apakah anda pikir bahwa orang lain lebih baik keadaannya dari anda?	**YA**	TIDAK
	SKOR :.....		

Geriatric Depression Scale score: 3 (point number 2, 4, 9)

Table 2. Mini Mental State Examination **(MMSE) Instrument Screening Results**

Maximum Score	Senior Score	Information
10	10	Orientation
3	3	Registration
5	5	Attention and Calculation
3	3	Remember
9	9	Language
Awareness: compos mentis		
Interview Place: patient's house		

Family Assessment Tools



Information:

Figure 1. Genogram

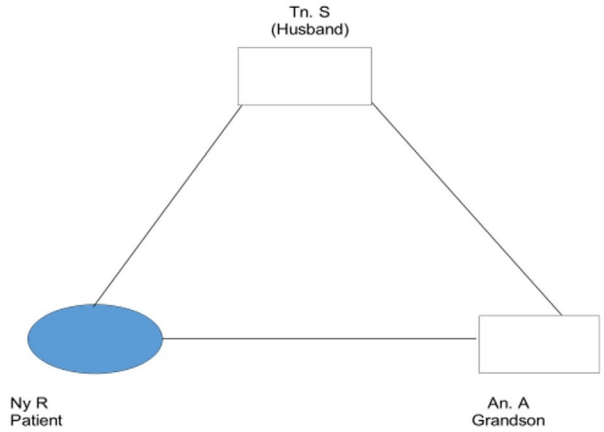


Figure 2. Family Map

Information:

: close relation

Table 3. Family APGAR Score

Adaptation	: 2
Partnership	: 2
Growth	: 2
Affection	: 2
Resolve	: 1

Total Family APGAR Score: 9 (good family function).

Table 4. Family SCREEM Analysis

SOURCE	PATHOLOGY	KET
Social	Good interaction between family members, patient participation in active community activities. Currently, the patient spends time at home with family members.	-
Culture	Satisfaction or pride in good culture, this can be seen from daily interactions both in the family and in the environment, and many cultural traditions are still followed, including using Javanese language, manners and politeness.	-
Religious	The application of the teachings is also good; this can be seen from the sufferer and their family who routinely pray five times a day; the patient also wears headscarves and the patient's husband often prays at the mosque.	-
Economic	This family is classified as middle class; primary needs can be met, secondary needs and economic plans are adequate; a priority scale is needed to meet the needs of life	+
Educational	Low education of family members, patient and husband are elementary school graduate's	+
Medical	In seeking health services, families use Puskesmas services and use the Jamkesmas card (BPJS) for treatment. Patient claims that they will only seek treatment if there are complaints, and patient rarely does health checks regarding their illness.	+

FORMULATION OF THE PROBLEM

The issue in this case is multifaceted, encompassing not only the clinical aspects of T2DM and overweight, but also the psychosocial aspects of the patient's ability to self-manage her disease. Type 2 diabetes is a debilitating condition that causes cognitive and functional deficits as well as dependency, putting a considerable strain on healthcare systems as well as social services. Long-term care is required for T2DM, which places a strain on personal, family, and public resources. Type 2 diabetes, on the other hand, is a self-managing illness in which patients can meet 99 percent of their own needs[1].

Diabetes management in older individuals is difficult since there is such a wide range of clinical presentations, psychosocial milieu, and limited resource availability in this population. Both glycemic goals and diabetes management can be influenced by a person's living situation and the level of accessible social support. Diabetes management varies depending on where older persons live (i.e., whether they are community welling or live in an assisted-living facility or a nursing home)[2].

Because the senior population is physiologically diverse, a full assessment, which incorporates functional factors in the decision-making process, is required[3]. The elderly have the highest risk of hypoglycemia as a consequence of diabetes treatment among adults of all ages. The loss in body mass associated with aging and frailty syndrome might result in a significant reduction in the demand for anti-diabetic medications, both oral and insulin. Similarly, as kidney function declines with age, the doses of medicines that stimulate insulin production or insulin levels that have been successfully regulating the course of the illness may become excessively high[4].

DISCUSSION

Comorbidities (geriatric syndromes) such as cognitive impairment, depression, functional disability, falls and fractures, polypharmacy, chronic pain, and urine incontinence are all increased by aging and diabetes. If doctors are unaware of these coexisting disorders, they may recommend treatment that is too complicated for a patient with cognitive impairment, or they may overlook an opportunity to treat depression, which can lead to medication nonadherence and social isolation[2].

Overweightness, obesity, inheritance, and a lifestyle that includes smoking and alcohol consumption are the leading causes of diabetes. Type 2 diabetes is caused mostly by a person's lifestyle and eating habits, which results in overweightness and obesity. Type 2 diabetes is connected to gene abnormalities that are handed down via the family's genetic line and has a hereditary component[5]. Geriatric patients are different from other young adult patients, both in terms of health concepts and in terms of causes, travel, and symptoms and signs of the disease so that, the procedure for diagnosis in geriatric patients is different from other populations.

DIABETES MANAGEMENT IN ELDERLY

Early implementation of multimodal and multidisciplinary therapies focused on nutritional education and physical activity in older individuals with T2DM has been proven to be helpful in maintaining functional autonomy. For all diabetic patients, even older adults, lifestyle adjustment is critical as a first step. Although very restricted diets are not indicated for older persons, counseling to avoid excessive carbohydrate loading at any one meal can help to lower glucose excursions without putting the patient on a restrictive diet. Exercise is beneficial to people of all ages. When creating an exercise regimen, it is crucial to consider the patients' physical abilities[2].

From the results of nutritional assessment by nutrition officers the following results were obtained: weight: 58 kg; height: 155 cm; and body mass index (BMI): 24.8 kg/m2 (overweight).

To calculate energy requirements in JMP patients:

Using the Broca formula can determine Ideal Weight (BBI) = (Height - 100) x 1 kg = 55 kg.

Basal Energy = BBI x 25 kcal/kg BB = 55 x 25 = 1,375 calories

Correction of 65 years old reduces 10% = -137.5 calories

Correction of mild activity added 20% = +275 calories

Correction of fat nutritional status = -20% = -275 calories. So, the need for energy = 1.375-137.5 + 275-275 =1,237.5 calories.

Dietary behavior is linked to a higher mean fasting blood sugar level, which was statistically significantly correlated. The high consumption of sweets is a crucial issue that can be targeted to enhance diabetes control in Malay patients[1].

In the elderly, metabolic control has been demonstrated to be improved by dietary education programs. Because these diets frequently have low protein content, they should be avoided by elderly citizens to avoid hypoglycemia and malnutrition[3].

One of the pillars of T2DM management is physical activity. Physical activity, especially multicomponent activity (aerobic, resistance, flexibility, and balancing), has been shown to improve not just glucose control, but also functional independence, self-esteem, and quality of life in diabetic seniors. Resistance exercise to increase muscle mass is an important part of preventing and treating T2DM in the elderly, and it is the preferred treatment option for fragile people. Moderate to high-intensity activities, contrary to popular opinion, are more effective for glycemic control and are generally safe for the elderly[3].

Treatment for older people should generally begin with low-dose antidiabetic medicines with a low risk of hypoglycemia (especially metformin and dipeptidyl peptidase-4 inhibitors (DPP-4I)), with a gradual increase in dose and monitoring of response after each increase. Drugs linked to a high risk of hypoglycemia such as sulfonylureas

with insulin, especially postprandial and combinations, should be avoided as much as possible. Several studies have proved its safety in the treatment of elders. Its benefits include its effectiveness in lowering HbA1c levels, positive effects on body mass and lipid profiles, and the fact that metformin is a medicine that improves prognosis[3, 4, 6].

EDUCATION

Diabetes self-care was found to be significantly linked to the patients' diabetes knowledge in older individuals. When compared to patients with low diabetes awareness, individuals with good and adequate diabetes knowledge had better diabetic self-care. Education is a critical component that must be prioritized. This investment will ensure that the high expenses associated with diabetic complications are reduced over time. Patient education increased patient understanding and had a good effect on metabolic management, according to two meta-analyses[1].

Evidence revealed that a patient's self-efficacy and motivation, together with proper knowledge, can accurately predict behavioral improvements. Motivation and self-efficacy (confidence) were critical in forming a change intention. An individual might attain his or her specific goals with the idea that they will retain the improvements if they act with intention and receive suitable knowledge[7]. Meanwhile, a 2017 study looked into T2DM patients' preferences for Diabetes Self-Management Education (DSME). Patients prefer to be trained in fewer sessions and for shorter periods of time, according to research. This suggests that the substance of educational sessions, as well as how they are tailored to patients' needs, are more essential than the quantity and duration of the educational sessions[8].

FAMILY SUPPORT

Families are one of the key providers of social support for adults with T2DM, according to systematic reviews, and families actively participate in the health treatment of adults and elders. When patients have blood relatives, care is most typically delivered by a family member, not just because of their existing link, but also since this is a cultural responsibility. Social support can be thought of as a personal dimension of family ties, i.e. something that happens as a result of them, regardless of the family structure [9].

Patients might benefit from the assistance of friends, family members, nurses, and physicians. The findings of this study are comparable with those of other studies conducted across the world, indicating that family support and diabetes self-care have a positive link. When compared to those who had no caregiver or were cared for by others such as friends or nursing home personnel during their illness, older patients who were cared for by their family showed higher levels of diabetic self-care[1]. Adherence to diet and exercise were shown to be higher in individuals who had family support than in those who did not[7].

Family members' information and roles in program activities like providing emotional support for problem-solving and assisting patients in resolving emotional distress, or providing information and roles to facilitate, accommodate, remind, motivate, and partner with behavior change and task completion were included in many studies. Family members were included in an intervention program in some of the studies included in this assessment. Family members may be able to assist patients in strengthening self-management therapies and extending the duration of the intervention's effectiveness[10].

Religion and spirituality of the members of a family can influence both positively and negatively the approach of the family facing a problem; in other words, it can interfere with the patients' ability to deal with a particular pathology. The spirituality and religion can still influence family habits, values and health care to the patient [11].

One technique to acquire a complete picture of patients as family members is to look at their family profiles. In addition to risk assessment, family history data can be used to personalize health messaging, which may be more effective in promoting healthy behaviors than standardized messages[12].

RISK OF DEPRESSION

Diabetes has been linked to an increased incidence of depression. Poor blood sugar control, a rigorous diet, and physical activity requirements, as well as medication, may raise the risk of depression in diabetic patients. Chronic stress has been found to promote hyper-activation of the hypothalamic-pituitary-adrenal axis as well as an increase in cortex, which has been identified as a critical mechanism for understanding the clinical linkages between diabetes and depression[13].

According to Goldney et al., diabetics have a higher prevalence of depression than non-diabetics, with about 24 percent of diabetics having depression compared to 17.1 percent of non-diabetics. In a systematic study of depression in diabetics, prevalence of depression in diabetics ranged from 8.5 percent to 27.3 percent. According to Gavard et al., depression, on the other hand, has been related to a 60% increase in the chance of developing type 2 diabetes[14].

The high rate of comorbid depression in diabetic patients could be attributed to the condition's psychosocial load, a lack of social support, awareness of having a chronic disease with its accompanying issues and limits, and the resulting psychological burden. Furthermore, poor diabetes control measures such as glycemic control, retinopathy, nephropathy, neuropathy, microvascular issues, and sexual dysfunction in patients with diabetes are connected to co-morbid depression[6].

Depression treatment, both psychological and pharmaceutical, has been linked to considerable clinical benefits in diabetic patients. These benefits occur not just in mood but also in adherence to T2DM diet and treatment regimens, affecting glucose control, lowering chronic complications, and enhancing quality of life[15].

According to multivariate analysis, those who were overweight, had poor physical capabilities and exercise, and had multiple other ailments have a higher chance of depression, but those who took metformin had a decreased risk of depressive symptoms[6].

Activating and empowering efforts are aimed at assessing whether physicians call family meetings to discuss a patient's health problem or problems that arise as a result of the problem, provide family counseling to address the patient's health issues, improve the family's ability to manage the patient's health issues, boost the family's ability to manage the patient's health issues, increase the family's understanding of how to manage the patient's health issues, assess family coping, and determine the impact of the patient's illness on the family[12]. The family approach in the management of diabetes mellitus helps identify factors that influence patients clinically, personally, and psychosocially through family involvement. With this approach, management will be more comprehensive and is expected to improve the patient's quality of life.

REFERENCES

1. Ishak NH, Yusoff SSM, Rahman RA, Kadir AA. Diabetes self-care and its associated factors among elderly diabetes in primary care. J Taibah Univ Med Sci. 2017;12(6):504–11. DOI:10.1016/j.jtumed.2017.03.008.
2. Leung E, Wongrakpanich S, Munshi MN. Diabetes management in elderly. Diabetes Spectrum. 2018;31(3):245– 53.
3. Gómez-Huelgas R, Peralta FG, Mañas LR, Formiga F, Domingo MP, Bravo JJM, et al. Treatment of type 2 diabetes mellitus in elderly patients. Rev Clín Esp. 2018;218(2):74–88.
4. Mordarska K, Godziejewska-Zawada M. Diabetes in the elderly. Menopause Rev. 2017;16(2):38–43.
5. Asiimwe D, Mauti GO, Kiconco R. Prevalence and risk factors associated with type 2 diabetes in elderly patients aged 45-80 years at Kanungu District. J Diabetes Res. 2020:1-5.
6. Chen F, Wei G, Wang Y, Liu T, Huang T, Wei Q, et al. Risk factors for depression in elderly diabetic patients and the effect of metformin on the condition. BMC Public Health. 2019;19(1063):1–9.
7. Nor NM, Shukri NAM, Yassin NQAM, Sidek S, Azahari N. Barriers and enablers to make lifestyle changes among type 2 diabetes patients: a review. Sains Malaysiana. 2019;48(7):1491–502.
8. Mikhael EM, Hassali MA, Hussain SA. Effectiveness of diabetes self-management educational programs for type 2 diabetes mellitus patients in middle east countries: a systematic review. Diabetes, Metab Syndr Obes Targets Ther. 2020;13:117–38.
9. Gomes LC, Coelho ACM, dos Santos Gomides D, Foss-Freitas MC, Foss MC, Pace AE. Contribution of family social support to the metabolic control of people with diabetes mellitus: A randomized controlled clinical trial. Appl Nurs Res. 2017;36:68–76.
10. Pamungkas RA, Chamroonsawasdi K, Vatanasomboon P. A systematic review: Family support integrated with diabetes self-management among uncontrolled type II diabetes mellitus patients. Behav Sci. 2017;7(62):1–17.
11. Souza GP, Duarte MCS, Vieira PKS, Albuquerque KF, Evangelista CB, Silva MSS, et al. Family assessment of elderly patients with liver disease. J Nurs UFPE online. Recife 2018;12(10):2690-702.
12. Larasati TA, Lipoeto NI, Mudjiran, Masrul, Hardisman, Sutomo AH. "GENOGRAM physician involvement model" new approach for Indonesian physician involvement with family. Korean J Fam Med. 2020;41:325–31.
13. Zhuang QS, Shen L, Ji HF. Quantitative assessment of the bidirectional relationships between diabetes and depression. Oncotarget. 2017;8(14):23389–400.
14. Trikkalinou A, Papazafiropoulou AK, Melidonis A. Type 2 diabetes and quality of life. World J Diabetes. 2017;8(4):120–9.
15. Zurita-Cruz JN, Manuel-Apolinar L, Arellano-Flores ML, Gutierrez-Gonzalez A, Najera-Ahumada AG, Cisneros- González N. Health and quality of life outcomes impairment of quality of life in type 2 diabetes mellitus: a cross-sectional study. Health Qual Life Outcomes. 2018;16(94):1–7.