

RESEARCH ARTICLE: Factors affecting the extent of medication compliance among clients with type 2 diabetes in Sulu rural health units

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ABSTRACT This study evaluated the degree to which patient, healthcare provider, and family factors influenced type 2 diabetes patients' medication compliance in Sulu Rural Health Units during the fiscal year 2022. The following findings are presented in this study, which used 100 samples obtained through the non-probability sampling method via purposive sampling, along with weighted mean, standard deviation, t-test for independent samples, One-way ANOVA, and Pearson's r. Of the 100 respondents, the majority are married females between the ages of 36 and 55; 2) On average, medication compliance among clients with type 2 diabetes in Sulu Rural Health Units is thought to be highly affected by the attitudes of the patients, nurses 3) In general, the variables of age, gender, and civil status do not significantly mediate in ways that determine the extent of medication compliance among type 2 diabetes clients in Sulu Rural Health Units; 4) In general, the respondents who evaluated the degree to which factors affected the medication compliance among type 2 diabetes clients in Sulu Rural Health Units in terms of Patient Factor as Agree or with High Extent are likely the same respondents who evaluated the degree to which factors affected the medication compliance among type 2 diabetes clients in Sulu Rural Health Units in terms of Healthcare Provider Factor and Family Factor, respectively.

KEYWORDS: *Extent of Medication, Type 2 Diabetes, Rural Health Units*

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1. Introduction

This study evaluated the degree to which patient, healthcare provider, and family factors influenced type 2 diabetes patients' medication compliance in Sulu Rural Health Units during the fiscal year 2022. The following findings are presented in this study, which used 100 samples obtained through the non-probability sampling method via purposive sampling, along with weighted mean, standard deviation, t-test for independent samples, One-way ANOVA, and Pearson's r. Of the 100 respondents, the majority are married females between the ages of 36 and 55; 2) On average, medication compliance among clients with type 2 diabetes in Sulu Rural Health Units is thought to be highly affected by the attitudes of the patients, nurses 3)

In general, the variables of age, gender, and civil status do not significantly mediate in ways that determine the extent of medication compliance among type 2 diabetes clients in Sulu Rural Health Units; 4) In general, the respondents who evaluated the degree to which factors

affected the medication compliance among type 2 diabetes clients in Sulu Rural Health Units in terms of Patient Factor as Agree or with High Extent are likely the same respondents who evaluated the degree to which factors affected the medication compliance among type 2 diabetes clients in Sulu Rural Health Units in terms of Healthcare Provider Factor and Family Factor, respectively;

2. Research Question

This study assessed the ease of doing business at the Bureau of Internal Revenue in the Municipality of Jolo, Province of Sulu, Fiscal Year 2023. Specifically, it answered the following questions:

1. What is the extent of factors affecting medication compliance among clients with type 2 diabetes in Sulu Rural Health Unit in the context of;
 - 1.1 patients' factors;
 - 1.2 health care provider factors; and
 - 1.3 family factors?
2. What is the extent of factors affecting medication compliance among clients with type 2 diabetes in Sulu Rural Health Unit in the context of;
 - 2.1. Age;
 - 2.2. Gender; and
 - 2.3. Civil Status?
3. What is the extent of factors affecting medication compliance among clients with type 2 diabetes in Sulu Rural Health Unit in the context of;

3. Literature

3.1 Foreign Studies and Literatures

Diabetes mellitus (DM) is recognized as one of the most prevalent chronic non-communicable diseases worldwide, with its prevalence on the rise. According to the International Diabetes Federation (IDF) Diabetes Atlas 2021, approximately 537 million adults, accounting for 10% of the global population aged 20-79 years, are currently living with DM. In 2016 alone, diabetes was responsible for 1.6 million deaths, and in 2012, it caused a significant number of deaths (Jaya, Harries, Rahman, Khogali, Chinnakali, & Gopal, 2022).

Uncontrolled diabetes leads to hyperglycemia, or elevated blood sugar levels, which can result in various microvascular complications such as retinopathy and nephropathy, as well as macrovascular complications like coronary artery disease. Good metabolic control plays a crucial role in delaying the onset and progression of complications in both type 1 and type 2 diabetes. Therefore, individuals with diabetes require lifelong treatment with medications and regular follow-up (Sahoo, Mohanty, Kundu, & Epari, 2022).

Effective management of blood glucose levels in individuals with diabetes can be achieved through healthy lifestyle habits and adherence to medication, including oral hypoglycemic drugs, insulin, or other injectable hypoglycemic agents (Jaya et al., 2022). Adherence to anti-diabetic medications not only improves glycemic control but also helps prevent complications and leads to better prognoses. Additionally, it is a cost-effective approach as it reduces hospitalization frequency and associated costs. Self-care practices such as adherence to diet and medication, blood glucose monitoring, foot care, exercise, and symptom recognition are crucial elements for secondary prevention (Sahoo et al., 2022).

While the terms adherence and compliance are often used interchangeably, they have distinct meanings. Adherence refers to an active choice made by patients to follow prescribed treatment or recommendations from healthcare providers, while compliance refers to a passive behavior in which patients follow instructions from healthcare workers regarding appointments

and treatment (Jaya et al., 2022). According to the World Health Organization (WHO), adherence to long-term treatment is defined as the extent to which a person's behavior aligns with the agreed recommendations from a healthcare provider, encompassing medication adherence, dietary adherence, and lifestyle changes (Sabaté, 2003 as cited in Yosef, Nureye, Tekalign, Assefa, & Shifera, 2023).

Non-adherence to medication has significant consequences, including unfavorable outcomes and increased financial burdens. Despite causing an estimated 125 thousand avoidable deaths annually and incurring preventable healthcare costs of \$100 billion, non-adherence to medication is often overlooked by healthcare professionals. In 2003, the World Health Organization emphasized that interventions aimed at improving adherence have far-reaching implications compared to specific medical interventions (Sahoo et al., 2022).

Achieving good glycemic control and preventing early complications are the ultimate goals of diabetes management, which heavily rely on patients' adherence to treatment regimens. Despite the remarkable advancements in the development of highly potent and effective medications over the past few decades, achieving excellent glycemic control remains challenging (Yosef, Nureye, Tekalign, Assefa, & Shifera, 2023).

Non-adherence to medication among individuals with diabetes mellitus (DM) poses a challenge, leading to poor glycemic control and an increased risk of complications. Adherence to anti-diabetic medications improves glycemic control, thereby preventing complications and reducing out-of-pocket expenses (Sahoo et al., 2022). However, declining medication compliance and reduced self-monitoring of blood glucose levels have contributed to worse glycemic control among individuals with DM (Jaya et al., 2022).

Various factors contribute to non-adherence, including financial constraints, low literacy levels, lack of awareness, inadequate support from family or the community, multiple comorbidities, and polypharmacy among older adults. Unequal distribution of healthcare providers between urban and rural areas, as well as cultural norms, also act as barriers to medication compliance. Forgetfulness, often associated with mental comorbidities, further contributes to non-adherence. The lack of a comprehensive understanding of adherence issues is one explanation for the limited effectiveness of interventions (Sahoo et al., 2022).

Numerous studies have explored different factors associated with medication compliance among patients with diabetes mellitus. These factors include age, blood glucose testing proficiency, gender, marital status, education, income, alcohol consumption, exercise, comorbidities, duration of diabetes, treatment patterns, presence of complications, type of medication, number of medications, treatment duration, glycemic control, and medication side effects (Almadhoun & Alagha, 2018; Aloudah et al., 2018; Alqarni et al., 2019; Aminde et al., 2019; Awodele & Osulale, 2015; Bekele et al., 2021; Benrazavy & Ali, 2019; Lee et al., 2017; Mesfin et al., 2017; Olorunfemi & Ojewole, 2019; Raimi, 2017; Thapar et al., 2020; Yosef, 2021; Zhou et al., 2019).

For instance, Awodele & Osulale (2015) found that the majority of patients with type 2 DM were females (69%) and aged 61 and above. Many of these patients considered their medications unaffordable. The study also revealed a significant relationship between patient age, gender, and medication adherence. Liu, Yao, Shi, Zheng, Li, and Zhong (2023) demonstrated a positive correlation between self-efficacy, medication literacy, and medication adherence in their study on the relationship between diabetes knowledge and medication adherence. Jing, Shenglan, Shuyuan, and Zhiping (2021) reported a medication adherence rate of 63.1% among patients with type 2 diabetes. They found that social support and self-efficacy directly influenced medication

adherence. Xie, Liu, Or, Chen, Yan, and Wang (2020) observed that patients with better perceived health status and longer duration of diabetes were more likely to adhere to medication therapy. Additionally, self-efficacy was found to mediate the association between older age and better adherence to diet therapy.

Salam and Siddiqui (2013) conducted a study in Saudi Arabia on the socio-demographic determinants of compliance among patients with type 2 diabetes. They found that the majority of patients with type 2 diabetes were between the ages of 40-60, and most were men. The study revealed that Saudi patients were significantly compliant with medication, while non-Saudis showed higher compliance with exercise.

Soe, Jamaludin, Mohammad, Hassan, and Nurumal (2021) investigated the knowledge and practice of medication adherence among patients with type 2 diabetes. The study found a significant association between socio-demographic characteristics and the level of knowledge and practice regarding medication adherence.

Shakya, Shrestha, Karmacharya, Morisky, and Kulseng (2023) conducted a study in Nepal to identify factors associated with medication adherence among patients with type 2 diabetes. The results showed that 61% of respondents had high medication adherence, which was positively associated with formal education and attendance at diabetes counseling sessions, even after adjusting for age, occupation, medicine intake duration, and diabetes medicine types.

Horii et al. (2019) assessed medication adherence in patients with type 2 diabetes in Japan using a nationwide medical claim-based database. They found that adherence was associated with factors such as polypharmacy (≥ 5 medications), male sex, age 50- <60 years, and ≥ 17 total visits. Adherent patients were more likely to have hemoglobin A1c values $<7.0\%$ at the end of the observation period. Wibowo, Yasin, and Prabandari (2022) explored the determinants of anti-diabetic medication adherence in various regions of Asia. They classified the determinants into inconsistent, positively related, negatively related, and non-associated factors, focusing primarily on patient-related factors such as demographics, feelings, knowledge, perceptions, beliefs, and comorbidities.

Ahmed Salama et al. (2021) investigated the factors affecting medication adherence among patients with type 2 diabetes attending a primary health care center in Cairo. The study found that most respondents were females, aged 60-70 years, married, had intermediate education, and were unemployed. The level of adherence among patients attending the primary health center was 65.6%. Factors such as regular monitoring of blood glucose levels, regular follow-up visits, family support, monthly income, and educational level were found to affect medication adherence.

Thapar et al. (2020) conducted a study in Mangaluru to determine the factors influencing adherence to anti-diabetes medications among patients with type 2 diabetes attending tertiary care hospitals. The study found that absence of side effects was significantly associated with good adherence.

Studer, Linder, and Pazzagli (2023) conducted a global systematic overview of socioeconomic factors associated with antidiabetic medication adherence in individuals with type 2 diabetes. They identified four subcategories of socioeconomic factors: economic, social, ethnic/racial, and geographical. Insurance status and ethnicity or race were found to be associated with medication adherence in the majority of studies. Income and education were also important factors. However, the heterogeneity between studies and potential recall bias in subjective data collection were noted. Gow, Rashidi, and Whithead (2024) conducted a qualitative systematic review to explore the factors influencing medication adherence among adults living with diabetes and comorbidities. The review identified factors such as perceived support, routine, medication

issues, and lack of knowledge that influenced medication adherence. Family and healthcare provider support were crucial, while a lack of family support was reported as a significant barrier to adherence. Concerns about adverse events and polypharmacy were also found to affect adherence. Routine was found to be vital for medication adherence, and a lack of knowledge about medication and disease processes was linked to non-adherence.

Sahoo et al. (2022) conducted a cross-sectional study in a tertiary care hospital in Eastern India to determine medication adherence among patients with type 2 diabetes mellitus. The study found a medication adherence rate of 34.14%, and factors such as comorbidities, positive family history of diabetes, current alcohol intake, and unhealthy days were associated with poor adherence.

These studies highlight the multifactorial nature of medication adherence among patients with diabetes mellitus and the importance of addressing various factors to improve adherence rates and glycemic control.

3.3 Local Literature Studies

In a study conducted by Jazul, et al. (2018), they investigated the adherence of individuals to their prescribed anti-diabetic medication in both rural (Barangay Patubig, Marilao, Bulacan) and urban communities (Bagong Barangay, Pandacan, Manila). The data collected from surveys revealed that the majority of the population, representing 95.31% of the respondents, followed their medication as advised. On the other hand, the remaining 4.69% of participants were found to be non-adherent to their prescribed medication.

Furthermore, Coyoca, et al. (2013) conducted a study focusing on the obstacles faced by patients with type II diabetes mellitus in adhering to their therapeutic regimens in Iligan City, Philippines. The survey results indicated that factors such as accessibility to healthcare services and the presence of a strong social support system significantly influenced medication adherence. Specifically, female and employed patients demonstrated higher diligence in taking their medication. Patients who received consultations at public clinics and those with lower blood glucose levels displayed better adherence to lifestyle modifications. Moreover, married, employed patients who possessed a greater awareness of their disease showed more effective stress reduction compared to other patients. Notably, patients attending public clinics engaged in more physical exercise than those attending private clinics. Additionally, the frequency of exercise among patients was greatly influenced by the efficiency of their healthcare providers.

In southern Bangladesh, low medication adherence among patients with type 2 diabetes poses a major public health challenge. Factors such as male gender, low annual family income, and the presence of diabetic ulcers were associated with decreased adherence to medication. To address this issue, patient counseling and awareness programs can be implemented to enhance medication adherence among individuals with type 2 diabetes. The findings of this study can provide valuable insights for physicians and public health workers to develop targeted strategies and increase awareness among their patients (Mannan et al., 2020).

4. Methodology

This chapter dealt with the research methods used in the conduct of this investigation. It included the research design, research location, study participants, sampling technique, data collection procedure and instruments, research instrument, validity and reliability, and statistical data treatment.

Research Design

This study used a quantitative-correlational methodology. Descriptive correlational design, according to Combes (2009), both characterizes the phenomenon and the relationship between the

variables. The sociodemographic profile of type 2 diabetes clients in Rural Health Unit Sulu, including age, gender, marital status, educational background, and occupation; 2. The extent of factors affecting the degree of compliance in clients with type 2 diabetes in Rural Health Unit Sulu, including patient factors, health care provider factors, and family factors, were described and the correlation between the study variables was evaluated using this research design; 3. When data are categorized based on age, gender, marital status, educational background, and occupation, there is a significant difference in the extent of factors affecting medication compliance in clients with type 2 diabetes when compared to patient factors, health care provider factors, and family factors; and 4. There is a significant correlation among the subcategories under the factors affecting the clients with type 2 diabetes in Sulu Rural Health Unit. The study's main source of data is patients with type 2 diabetes who are enrolled in designated Rural Health Units in Sulu. Survey questionnaires are used to collect data from the respondents.

1. *Research Locale*

The study was conducted in certain municipalities of Sulu, specifically Indanan, Patikul, Parang, Maimbung, and Panamao. These municipalities have functional Rural Health Units that provide primary health care to the community, including treatment and management of non-communicable diseases such as high blood pressure, high blood cholesterol levels, and high blood sugar levels (diabetes type 2).

2. *Respondents of the study*

Primary data was collected from patients diagnosed of having type 2 diabetes. It was composed of patients who are taking medications to control diabetes. Data was obtained using the survey questionnaires. A total of 100 respondents were included in the study.

Table 1. Respondents of the Study according to Municipality

No.	Locale	Number of Respondents
1.	Indanan	20
2.	Patikul	20
3.	Parang	20
4.	Maimbung	20
5.	Panamao	20
	Total	100

3. *Sampling design*

In every research study, a population sample is required. This refers to the number of individuals who will participate in the study. The research in question utilized the non-probability sampling method, specifically, purposive sampling. This method is appropriate because the respondents are considered experts who can provide sufficient answers to the research questions related to their demographic profile and degree of medication compliance.

4. *Data Gathering Procedure*

This study has undergone several steps to reach completion.

Firstly, a review of related literature and studies, both foreign and local was done to gain insights and establish a foundation about the research topic. Secondly, a permission from the Public Health Officer and Public Health Administrators in Sulu was sought prior to administering the survey tool. Thirdly, actual data gathering using a survey questionnaire that included a consent form was conducted. The form provided information on the study's rationale, procedures conducted, and data collected. And

lastly, the obtain data from the survey were interpreted and analyses to draw meaningful conclusions

Research Instrument

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Validity and Reliability

The questionnaire used in this study was adapted from a previous author and validated by experts for its contents' appropriateness and relatedness.

Statistical Treatment Data

This study analyzed quantitative data on medication compliance among clients with type 2 diabetes in Sulu Rural Health Units using descriptive and inferential statistics. Data software was used for data analysis. Mean and standard deviation were used to determine factors affecting medication compliance. T-tests were used to determine significant differences in factors affecting medication compliance based on age, gender, marital status, education, and occupation. Pearson Product Moment Correlation Coefficient was used to determine correlations.

The following rating scale intervals were adopted in the analyses of the results of the computations to be yielded by both descriptive and inferential statistical tools:

Rating Scales Interval extent of factors affecting the medication compliance in clients with type 2 diabetes based on a 5-point Likert's Scale:

Table 2. Likert Scale

Point	Scale Value	Descriptors
5	4.50-5.00	Strongly disagree
4	3.50-4.49	Disagree
3	2.50- 3.49	Neither agree
2	1.50- 2.49	Agree
1	1.00- 1.49	Strongly Agree

5. Results and Discussion

This section focuses on the analysis and interpretation of the data collected for the study. It presents the demographic profile of the clients who participated in the study based on their age, gender, and civil status. The study also examines the factors that affect the extent of medication compliance among clients with type 2 diabetes in Sulu Rural Health Units. These factors are categorized into three main groups: Patient Factor, Healthcare provided Factor, and Family Factor. Additionally, the study identifies significant correlations and differences in the factors affecting medication compliance among clients with type 2 diabetes in Sulu Rural Health Units based on their demographic profile.

Based on the thorough, proper scoring and statistical treatments of data gathered for this study, the following are the presentations, analyses and interpretations of results which correspond to each of the research questions:

Question 1: What is the extent of factors affecting medication compliance among clients with type 2 diabetes in Sulu Rural Health Unit in the context of; 1.1 patient factors; .2 health care provider factors; and 1.3 family factors?

1.1 Extent of factors affecting medication compliance among clients with type 2 diabetes in Sulu Rural Health Unit in the context of patient factor

	Patient Factor	Mean	S.D.	Rating
1	I follow series of schedule in taking my medication.	4.2300	1.1879	Agree
2	My medication should be taken lifetime.	4.0900	1.1290	Agree
3	I am concerned with the number of pills to be taken.	3.8600	1.2310	Agree
4	My medication regimen is too complex.	4.0000	1.2309	Agree
5	I seek support from my family to help me remember my pill schedule.	3.8990	1.1561	Agree
6	I medications had several side effects.	3.8000	1.1720	Agree
7	Medication should fit my meal plan.	3.9000	1.2512	Agree
8	I feel that the dose is too high for me.	3.7700	1.3473	Agree
9	Medications are effective in lower my blood sugar.	3.8600	1.4072	Agree
10	Medication is expensive.	3.7400	1.5083	Agree
	Total Weighted Mean	3.9149	.75014	Agree

Legend: (5) 4.50-5.0=Strongly (SA); (4) 3.50 – 4.49=Agree (A); (3) 2.50 – 3.49=Neutral (N); (2) 1.50 – 2.49=Disagree (D); (1) 1.00 – 1.49=Strongly Disagree (SD)

Table 2.1 shows the extent of factors affecting medication compliance among clients with type 2 diabetes in Sulu Rural Health Unit in the context of patient factor. As revealed in this table, this sub-category obtained a total weighted mean score of 3.9149 with standard deviation of .75014 which is rated as Agree or with High Extent. Respondents expressed agreement that patient factor is affecting medication compliance among clients with type 2 diabetes in Sulu Rural Health Unit. In other words, patient’s attitude towards complying or adhering to type 2 diabetes medication can affect the patient’s early recovery or prolong the sickness. This result is consistent with previous studies conducted by other authors. For example, Liu et al. (2023) found that patient factors such as self-efficacy and medication literacy have a significant impact on medication adherence. Similarly, Jing (2021) highlighted the importance of social support and self-efficacy. Shayka et al. (2023) discovered that attendance at diabetic counseling is positively associated with adherence. Wibowo (2022) found that patient factors such as demographics, feelings, knowledge, perceptions, beliefs and comorbidities are also important. Ahmed Salama et al. (2021) suggested that several factors affect medication compliance, including regular blood glucose monitoring, regular follow-up visits, family support, monthly income, and education level.

Specifically, respondents rated as agree or with High Extent the following items: “I follow series of schedule in taking my medication”, “My medication should be taken lifetime”, “I am concerned with the number of pills to be taken”, “My medication regimen is too complex”, “I seek support from my family to help me remember my pill schedule”, “I medications had several side effects.”, and “Medication should fit my meal plan”.

1.2 In the Context of Healthcare Provider Factor

Table 1.2 Extent of factors affecting medication compliance among clients with type 2 diabetes in Sulu Rural Health Unit in the context of healthcare provider factor

	Healthcare Provider Factor	Mean	S.D.	Rating
1	The HCP gives through information about the medication plan.	4.4000	1.1806	Agree
2	The HCP gives enough time to discuss medication dose and side effects.	4.5700	1.0076	Strongly Agree
3	The health care provider speak the in a language easy to understand.	4.5200	1.0776	Strongly Agree
4	The HCP take time to explain about my disease and treatment.	4.5000	1.0777	Strongly Agree

5	The HCP does timely follow-up.	4.4900	1.1055	Agree
6	The HCP also explains the importance of balanced diet and exercise.	4.4800	1.1501	Agree
7	The HCP treats me with respect and is culturally sensitive.	4.5500	1.0576	Strongly Agree
8	The HCP shows empathy.	4.4800	1.1588	Agree
9	I trust my HCP.	4.4500	1.1404	Agree
10	The HCP discusses why medications are important.	4.4300	1.0941	Agree
Total Weighted Mean		4.4870	.98726	Agree

Legend: (5) 4.50-5.0=Strongly (SA); (4) 3.50 – 4.49=Agree (A); (3) 2.50 – 3.49=Neutral (N); (2) 1.50 – 2.49=Disagree (D); (1) 1.00 – 1.49=Strongly Disagree (SD)

Table 1.2 shows the ease of doing business at the Bureau of Internal Revenue-Jolo as Table 2.2 shows the extent of factors affecting medication compliance among clients with type 2 diabetes in the Sulu Rural Health Unit in the context of healthcare provider factor. As revealed in this table, this sub-category obtained a total weighted mean score of 4.4870 with a standard deviation of .98726 which is rated as Agree or with High Extent. Respondents agreed that healthcare provider is a factor affecting medication compliance among clients with type 2 diabetes in the Sulu Rural Health Unit. In other words, it is highly believed that nurses working in the rural health units and their attitude towards conveying support and instruction to clients with type 2 diabetes medication can affect the patient’s early recovery or prolong the sickness. Specifically, respondents rated as agree or with High Extent on the following items: “The HCP gives thorough information about the medication plan”, “The HCP gives enough time to discuss medication dose and side effects”, “The health care provider speaks the in a language easy to understand”, “The HCP take time to explain about my disease and treatment”, “The HCP does timely follow-up”, “The HCP also explains the importance of balanced diet and exercise”, and “The HCP treats me with respect and is culturally sensitive”.

1.3 In the Context of Family Factor

Table 1.3 Extent of factors affecting medication compliance among clients with type 2 diabetes in Sulu Rural Health Unit in the context of family factor

	Family Factor	Mean	S.D.	Rating
1	My family supports me in buying my medication.	4.4200	1.0934	Agree
2	My family encourages me to take my medications as prescribed.	4.2400	1.1986	Strongly Agree
3	My family values cultural beliefs rather than medical.	3.9000	1.2593	Strongly Agree
4	My family knows about my disease and its management.	4.0800	1.1693	Strongly Agree
5	My family prepares foods such that will help lower my sugar levels.	3.9800	1.2790	Agree
6	My family encourages me reports untoward symptoms caused by medications.	4.2500	1.2008	Agree
7	My family provides me supports me emotionally to cope with diabetes.	4.1800	1.2583	Strongly Agree
8	My family assists me with medication administration.	4.1700	1.1464	Agree
9	My family warns me with medication side effects.	4.2600	1.1601	Agree
10	My family is concerned about my overall health.	4.4700	1.0391	Agree
Total Weighted Mean		4.1950	.93629	Agree

Legend: (5) 4.50-5.0=Strongly (SA); (4) 3.50 – 4.49=Agree (A); (3) 2.50 – 3.49=Neutral (N); (2) 1.50 – 2.49=Disagree (D); (1) 1.00 – 1.49=Strongly Disagree (SD)

Table 1.3 shows the extent of factors affecting medication compliance among clients with type 2 diabetes in the Sulu Rural Health Unit in the context of family factors. As revealed in this table, this sub-category obtained a total weighted mean score of 4.1950 with standard deviation of .93629 which is rated as Agree or with High Extent. Respondents expressed agreement that family factor if highly affecting medication compliance among clients with type 2 diabetes in Sulu Rural

Health Unit. In other words, it is highly believed that family members’ attitude towards conveying support and instruction to clients with type 2 diabetes medication can affect the patient’s early recovery or prolong the sickness.

Specifically, respondents rated as agree or with High Extent the following items: “My family supports me in buying my medication”, “My family prepares foods such that will help lower my sugar levels”, “My family encourages me to report untoward symptoms caused by medications”, “My family assists me with medication administration”, “My family warns me with medication side effects”, and “My family is concerned about my overall health”.

Question 2: Is there a significance difference in the extent of factors affecting the medication compliance among clients with type 2 diabetes when data are grouped according to: 3.1 age; 3.2 gender and 3.3 civil status?

2. 1 According to Age

Table 2.1 Differences in the extent of factors affecting the medication compliance among clients with type 2 diabetes when data are categorized according to their demographic profile in terms of age

Sources of Variation		Sum of Squares	df	Mean Square	F	Sig.	Description
Patient Factor	Between Groups	.330	2	.165	.289	.749	Not Significant
	Within Groups	55.378	97	.571			
	Total	55.708	99				
Healthcare Provider Factor	Between Groups	.013	2	.006	.006	.994	Not Significant
	Within Groups	96.480	97	.995			
	Total	96.493	99				
Family Factor	Between Groups	.016	2	.008	.009	.991	Not Significant
	Within Groups	86.771	97	.895			
	Total	86.788	99				

*Significant at alpha 0.05

Table 2.1 shows the difference in the level of ease of doing business at the Bureau of Internal Table 2.1 presents the differences in the extent of factors affecting the medication compliance among clients with type 2 diabetes when data are categorized according to their demographic profile in terms of age. It can be gleaned from this table that the value of F-ratios and P-values of all the sub-categories subsumed under the extent of factors affecting the medication compliance among clients with type 2 diabetes are not significant at alpha .05. This means that, although respondents vary in age range, still they do not differ in their assessment towards the extent of factors affecting the medication compliance among clients with type 2 diabetes. According to this result, respondents who are 56 years of age or older may not always be in a better position to evaluate the degree of factors influencing the medication compliance among type 2 diabetic clients than respondents who are 35 years of age or younger, 36–55 years of age, or vice versa. It is safe to conclude, however, that different ages do not significantly mediate how staff respondents evaluated the degree of factors influencing type 2 diabetes clients' medication compliance.

2.2 According to Gender

Table 2.3 Differences in the extent of factors affecting medication compliance among clients with type 2 diabetes when data are categorized according to their demographic profile in terms of gender

VARIABLES	Grouping	Mean	S. D.	Mean Difference	t	Sig.	Description
Patient Factor	Male	3.9667	.35760	.00362	.017	.987	Not Significant
	Female	3.9630	.71285				
Healthcare Provider Factor	Male	4.4583	.86808	-.02862	-.088	.930	Not Significant
	Female	4.4870	1.0335				
Family Factor	Male	4.2167	.59365	.01449	.051	.960	Not Significant
	Female	4.2022	.93369				

*Significant at alpha 0.05

Table 2.2 presents the differences in the extent of factors affecting the medication compliance among clients with type 2 diabetes when data are categorized according to their demographic profile in terms of gender. It can be gleaned from this table that the value of Mean Differences and *P*-values of all the sub-categories subsumed under the extent of factors affecting the medication compliance among clients with type 2 diabetes are not significant at alpha .05. This means that, although respondents vary in gender, still they do not differ in their assessment towards the extent of factors affecting the medication compliance among clients with type 2 diabetes. This finding suggests that, in comparison to his female counterpart, a respondent may not always have the same perspective when it comes to determining the degree of variables influencing medication compliance among clients with type 2 diabetes. According to the data provided by Mannan et al. (2021), the current study concurred. In their study conducted in Bangladesh, these scientists came to the conclusion that low medication adherence was related to conditions such diabetic ulcers, male sex, and low yearly family income. However, it is reasonable to conclude that employee respondents' assessments of the degree of factors influencing type 2 diabetes clients' medication compliance did not significantly moderate the effect of variable gender.

2.3 According to Marital Status

Table 2.3. Differences in the extent of factors affecting medication compliance among clients with type 2 diabetes when data are categorized according to their demographic profile in terms of marital status

SOURCES OF VARIATION		Sum of Square	df	Mean Square	F	Sig.	Description
Patient Factor	Between Groups	.850	2	.425	.751	.474	Not Significant
	Within Groups	54.858	97	.566			
	Total	55.708	99				
Healthcare Provider Factor	Between Groups	7.342	2	3.671	3.994*	.022	Significant
	Within Groups	89.151	97	.919			
	Total	96.493	99				
Family Factor	Between Groups	3.079	2	1.540	1.784	.173	Not Significant
	Within Groups	83.708	97	.863			
	Total	86.788	99				

*Significant alpha .05

Upon categorizing data based on the clients' marital status, Table 2.3 illustrates the variations in the degree of factors influencing medication compliance amongst type 2 diabetic clients. With the exception of the "Healthcare Provider Factor," all other subcategories included in the range of factors influencing the medication compliance among clients with type 2 diabetes had F-ratios and *P*-values that are not significant at alpha.05. Accordingly, even if respondents'

marital statuses differ, they all evaluate the same criteria as having a significant impact on type 2 diabetes patients' adherence to their prescription regimens. This finding suggests that respondents with type 2 diabetes may not always be better positioned to evaluate the degree of variables influencing medication compliance than single or widowed respondents, or vice versa. However, it is reasonable to conclude that there is no substantial mediation of varied marital status in the ways that staff respondents evaluated the degree of factors influencing type 2 diabetes clients' medication compliance.

Question 3. Is there a significant correlation among the sub-categories subsumed under the extent of factors affecting the medication compliance among clients with type 2 diabetes in Sulu Rural Health Units?

Table 3 Correlation among the sub-categories subsumed under the extent of factors affecting the medication compliance among clients with type 2 diabetes in Sulu Rural Health Units in terms of Patient Factor, Healthcare Provider Factor, and Family Factor

Dependent	Variables	Pearson <i>r</i>	Sig.	N	Description
	Independent				
Patient Factor	Healthcare Provider Factor	.608**	.000	100	High
	Family Factor	.742**	.000	100	Very High

*Correlation Coefficient is significant at alpha .05

Correlation Coefficient Scales Adopted from Hopkins, Will (2002):0.0-0.1=Nearly Zero; 0.1-0.30=Low; .3-0.50=Moderate; .5-0.7-0=High; .7-0.9= Very High; 0.9-1=Nearly Perfect

Table 3 shows significant Pearson correlation coefficients among factors affecting medication compliance among clients with type 2 diabetes in Sulu Rural Health Units. High positive correlations were found between patient factors and healthcare providers, while very high positive correlations were found between patient factors and family factors. These results suggest that respondents who assessed factors affecting medication compliance in terms of patient factors likely share these findings.

Liu et al. (2023) have reported a correlation between medication adherence and diabetes understanding. The study discovered a strong and favorable correlation between medication adherence, medicine literacy, and self-efficacy. Jing et al. (2021) similarly found a direct relationship between medication adherence and self-efficacy and social support. According to Gow, Rashidi, and Whithead (2024), medication adherence may be impacted by elements like routine, lack of information, problems with medicine, and perceived assistance. Support from family members and medical professionals is crucial and is thought to be connected to drug adherence. According to Ahmed Salam et al. (2023) attending counseling sessions and routine follow-up visits, in addition to receiving formal education, also had a substantial impact on drug adherence. In conclusion, the ability of healthcare providers in the health care unit significantly influences medication compliance among clients with type 2 diabetes.

6. Conclusion

The study discovered that family members, nurses, and patients' attitudes all have a significant impact on type 2 diabetes patients' medication compliance in Sulu Rural Health Units. The compliance was not significantly mediated by age, gender, or civil status. Both patient and healthcare provider factors shared similarities in the factors influencing drug compliance. The Health Model, which can direct programs for disease prevention and health promotion and explains the likelihood of following medical advice, is supported by the study.

7. Recommendation

Based on the findings and conclusions, this study forwards the following recommendations:

- 1) Nursing administrators may adopt the results of this study in understanding the factors that contribute to non-compliance to medication; and maybe the basis to inform healthcare policy makers towards the development of policies that support medication adherence.
- 2) Nurses may utilize the findings of this study in understanding the degree of medication adherence, and to identify patients who are at risk of non-adherence and intervene early to improve medication adherence.
- 3) Student-researchers in the field of healthcare services are enthused to replicate this study but to include other variables like nurses' work engagement, nurses' workplace environment, and nurses' work stress and anxiety in some other avenues.

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