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A Descriptive Study to Assess the Factors Influencing Non-Compliance to the Recommended Treatment Regimen among Diabetic Patients in Selected Areas of Aurangabad City

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Abstract: ***Background: Non-compliance with the prescribed treatment regimen is a major obstacle to glycaemic control in diabetes mellitus (DM). Objectives: To measure the rate of non-compliance, assess the factors influencing it, and determine its association with demographic variables among diabetic patients. Methods: A descriptive design was used; 110 diabetic patients from selected areas of Aurangabad city were enrolled by non-probability purposive sampling. A three-part, expert-validated questionnaire (demographic profile, eight-item modified Morisky Medication Adherence Scale, and non-compliance factors) was used; data were analysed using descriptive and chi-square statistics. Results: 68 (61.8%) patients were compliant and 42 (38.2%) non-compliant. Side effects (52%) and use of alternative medicine (52%), financial difficulty (48%), and belief that pills are harmful (44%) were the leading factors. Family income (χ^2=8.15, p=0.04), duration of being diabetic (χ^2=8.85, p=0.03) and number of doses (χ^2=14.22, p=0.00) were significantly associated with compliance status. Conclusion: Financial, informational and psychological barriers drive substantial non-compliance; targeted, family-centred education is recommended.***

Keywords: Diabetes mellitus; Non-compliance; Treatment adherence; Morisky scale

1. Introduction

The pancreas produces insulin, the hormone that regulates blood glucose by enabling its transport from the blood into surrounding cells; when insulin secretion or action is impaired, diabetes mellitus (DM) results. DM is a metabolic disorder characterised by chronic hyperglycaemia arising from defective insulin secretion, insulin action, or both [1]. It is among the most common endocrine diseases worldwide: in 2020 the International Diabetes Federation estimated 463 million people living with diabetes globally, 77 million of them in India, and national survey data place Indian prevalence at 11.8% among adults over 50 years [2,3]. Left untreated, DM leads to cardiovascular, renal, ocular and neurological complications.

Adherence is the proportion of prescribed medication actually taken by a patient over a given period [4]. Non-adherence in Type 2 DM is widespread and results in poor glycaemic control and higher complication rates; reported causes include cost of drugs, pill burden, side effects, fatigue, distance to clinic, and inadequate counselling. During clinical postings, the investigators observed that despite available treatment, many diabetic patients discontinued therapy, prompting this study.

Objectives

1) To measure the rate of non-compliance;
2) To assess the factors influencing non-compliance;
3) To determine the association between compliance status and demographic variables, among diabetic patients of selected areas of Aurangabad city.

2. Materials and Methods

A descriptive research design was adopted [13], conducted at selected areas of Aurangabad city, Maharashtra, India. A sample of 110 diabetic patients was recruited by non-probability purposive sampling. Inclusion criteria: non-compliant diabetic patients, including those with co-morbid hypertension, chronic renal disease or dyslipidaemia. Exclusion criteria: unwillingness to participate, gestational diabetes, or psychiatric illness.

A structured, three-section questionnaire was used: Section A – demographic variables; Section B – an eight-item modified Morisky Medication Adherence Scale classifying patients as compliant or non-compliant; Section C – nine items on personal/psychological factors related to non-compliance. Content validity was established by 11 nursing experts. Permission, informed consent, confidentiality and the right to withdraw were ensured. The conceptual framework was based on the Health Belief Model (Becker & Rosenstock, 1974) [12]. Data were analysed using frequency, percentage and the chi-square test.

3. Results

Most respondents were aged 41–60 years (48%), female (51%), married (87%), Hindu (61%) and from nuclear families (50%); 52% had a family income ≥₹10,001/month, 62% had no co-morbidity, 41% had been diabetic ≥4 years, 62% were on oral hypoglycaemic agents and 65% took medication twice daily (Table 1).

Table 1: Key demographic characteristics (N=110)

Variable	Category	n	%
Age (yrs)	41–60	53	48
Gender	Female	56	51
Marital status	Married	87	87
Religion	Hindu	64	61
Education	Secondary	34	31
Family income	≥₹10,001/mo	57	52
Type of family	Nuclear	55	50
Habits	Smoker+alcoholic	43	39
Co-morbidity	None	68	62
Duration of DM	≥4 years	45	41
Medication	OHA	68	62
Doses/day	Twice	72	65

Using the modified Morisky scale, 68 patients (61.8%) were compliant and 42 (38.2%) non-compliant. Among non-adherent patients, the leading factors were belief that medication is unnecessary (66%), living alone/no caretaker (65%), forgetfulness (63%), lack of information (62%), fatigue (60%), belief that pills are harmful (56%), financial difficulty and use of alternative medicine (52% each), and side effects (48%) (Table 2).

Table 2: Factors reported by non-compliant patients (n=42)

Factor (non-adherent group)	n	%
Side effects of prescribed drugs	11	48
Use of alternative medicine	15	52
Financial difficulty buying medicines	16	52
Belief that pills harm the body	15	56
Fatigue	21	60
Forgetfulness (busy schedule)	25	63
Lack of information about medicines	21	62
Living alone / no caretaker	15	65
Belief medication is unnecessary	19	66

Chi-square analysis showed compliance status was significantly associated with family monthly income, duration of being diabetic, and number of prescribed doses (Table 3); age, gender, marital status, religion, education, occupation, type of family, habits, co-morbidity, type of medication and number of tablets showed no significant association ($p>0.05$).

Table 3: Variables significantly associated with compliance status

Variable	χ^2	df	p	Result
Family monthly income	8.15	3	0.04	S
Duration of being diabetic	8.85	3	0.03	S
Number of prescribed doses	14.22	3	0	S

4. Discussion

The 38.2% non-compliance rate found here is consistent with Manobharathi et al. (2017), who reported 39.8% compliance among Type 2 DM patients in Tamil Nadu [5], and with Divya et al. (2015), who found 54.7% non-adherence in South India [11]. Financial constraints and use of alternative medicine as leading barriers mirror Chutiyami et al., who attributed 57.6% of non-compliance to drug cost [6], while the side-effect and demographic associations parallel Ehwarieme et al. (2018) [7]. The significant association with duration of diabetes supports Belaynehkefale Gelaw et al. (2014), who found longer-duration patients less compliant [8], and the association with dose frequency is consistent with Aminde et al. and the regimen-complexity review by Jin et al. [9,10].

5. Conclusion and Nursing Implications

More than a third of diabetic patients studied were non-compliant with treatment, driven mainly by financial, informational and psychological barriers, with family income, duration of diabetes and dose frequency significantly associated with compliance status.

Nursing education should incorporate content on non-compliance and its determinants so students can create community awareness; nursing practice should prioritise structured, family-centred patient education – addressing cost concerns, side-effect management and simplified dosing regimens – with active family/caretaker involvement; and nursing research should extend these findings through larger, interventional studies.

The study was limited to non-compliant patients from selected areas of Aurangabad city, recruited by non-probability purposive sampling and relying on self-reported data, which restricts generalisability. Replication with larger, more diverse, multi-site samples is recommended, along with community and hospital-based educational programmes using pamphlets, booklets and self-instructional modules to improve completion of diabetic treatment.

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