Contents lists available at ScienceDirect

Diabetes & Metabolic Syndrome: Clinical Research & Reviews

journal homepage: www.elsevier.com/locate/dsx

Patient satisfaction and medication adherence assessment amongst patients at the diabetes medication therapy adherence clinic

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ARTICLE INFO

ABSTRACT

Aims: To determine the satisfaction and current adherence status of patients with diabetes mellitus at the diabetes Medication Therapy Adherence Clinic and the relationship between patient satisfaction and adherence.

Methods: This cross-sectional descriptive study was carried out at three government hospitals in the state of Johor, Malaysia. Patient's satisfaction was measured using the Patient Satisfaction with Pharmaceutical Care Questionnaire; medication adherence was measured using the eight-item Morisky Medication Adherence Scale.

Results: Of $n = 165$ patients, 87.0% of patients were satisfied with DMTAC service (score 60–100) with mean scores of 76.8. On the basis of MMAS, 29.1% had a medium rate and 26.1% had a high rate of adherence. Females are 3.02 times more satisfied with the pharmaceutical service compared to males (OR 3.03, 95% CI 1.12–8.24, $p < 0.05$) and non-Malays are less satisfied with pharmaceutical care provided during DMTAC compared to Malays (OR 0.32, 95% CI 0.12–0.85, $p < 0.05$). Older patients age group ≥ 60 years were 3.29 times more likely to adhere to their medications (OR 3.29, 95% CI 1.10–9.86, $p < 0.05$). Females were the most adherent compared to males (OR 2.33, 95%CI 1.10–4.93, $p < 0.05$) and patients with secondary level of education were 2.72 times more adherent to their medications compared to those in primary school and no formal education (OR 2.72, 95%CI 1.13–6.55, $p < 0.05$). There is a significant ($p < 0.01$), positive fair correlation ($r = 0.377$) between satisfaction and adherence.

Conclusion: Patients were highly satisfied with DMTAC service, while their adherence levels were low. There is an association between patient satisfaction and adherence.

1. Introduction

Worldwide, about 347 million people have diabetes and by the year 2030, it is predicted to become the 7th leading cause of death [1]. The prevalence of type 2 diabetes mellitus (T2DM) is increasing and has become the major concern in Malaysia. This rising epidemic with an alarming statistic reported on the latest National Health and Morbidity Survey showed that the overall prevalence of diabetes for those aged over 18 years old is a staggering 15.2% [2].

Medication use is undoubtedly important in the management of T2DM. The effectiveness of diabetes treatment is largely dependent on patient level of adherence to medications prescribed [3]. Adherence is important in chronic disease that needs long-term therapy

for a better outcome [4,5]. In Malaysia, study showed that more than 50% T2DM patients did not adhere to treatment [6]. In that respect, one of the initiatives taken by Pharmaceutical Services Department to increase patient adherence towards medications was the initiation of Medication Therapy Adherence Clinic (MTAC) [7]. As highly trained and easily reached health care professionals, pharmacist can contribute well in the diabetes adherence programme.

1.1. MTAC

MTAC has been introduced in 2004 as one of the clinical pharmacy component in ambulatory care. The objective of this service is to increase patient adherence towards medications [7]. DMTAC is one of the ambulatory care services which are run by pharmacists in collaboration with physicians. It intended to assists diabetic patients in improving their adherence to medication and

also their glycaemic control (MOH Pharmaceutical Services Division, 2010). DMTAC patients will be recruited by pharmacists according to the criteria of DMTAC protocol or also can be referred by physicians [8]. Patients will undergo series of drug knowledge and compliance assessment, resolving any pharmaceutical care issues, managing drug-related problems, clinical outcome assessment and the whole loads of education outlined according to number of visits. Patients will be follow-up to a maximum of eight visits [8]. At each meeting or at the earliest opportunity, pharmaceutical review will need to be done by the DMTAC pharmacist. Drug therapy problem identification, resolving patient drug therapy problem such as what is the best therapeutic alternatives for patients and considering patient-related factors such as social and financial needs when establishing action plan, monitoring patients' drug therapy and lastly offering feedback on patient progress, discussion on patient case according to action plan and outcome and where necessary, making appropriate recommendations.

1.2. Measuring patient satisfaction

Pharmaceutical care provided during MTAC needs to be assessed to ensure its effectiveness and benefits to patients. For patients' aspect, satisfaction to the pharmaceutical care provided is one of the measures that can be assessed. Patient satisfaction is now becoming one of the well-known indicators for healthcare services quality and healthcare-related behaviour. Assessing the degree of patient satisfaction to health services provided is pertinent clinically as patients that are satisfied to be expected to conform to treatment [9]. It is especially important for chronic disease like diabetes [10]. Satisfaction studies on T2DM are important as satisfaction might affect adherence. Hence, by knowing the satisfaction level and what factors affecting it, intervention to enhance patient satisfaction level for the pharmaceutical care provided during diabetes MTAC can be devised so that the adherence level can be improved.

Thus, the objective of this study is to determine the satisfaction and current adherence status of diabetes mellitus patients at the DMTAC and its association with socio-demographic characteristics and to determine the relationship between patient satisfaction and adherence.

2. Material and methods

2.1. Study design and patient selection

This cross-sectional descriptive study was conducted between September 2014 and November 2014 at DMTAC in three government hospitals in the state of Johor, Malaysia. Approval to perform the study was obtained from National Institute of Health and the Medical Research and Ethics Committee, Ministry of Health Malaysia. T2DM patient aged 18 years old and above, have attended DMTAC counselling at least once and able to communicate and read in Malay was included in the study. Patients were asked for their agreement to participate in the study and the study protocol was explained accordingly. A set of patient information sheet, consent form and questionnaires were given before the recruitment. Interested patients were asked to complete the consent form. All the questionnaires were guided administered by the researcher.

2.2. Assessment and measures

The instrument used in this study consisted of three parts: part one elicited socio-demographic characteristics; part 2 was satisfaction to pharmaceutical care test and part 3 was a medication adherence test. All sections contain Malay version only. Patient satisfaction was determined using the Malay version of the validated PSPCQ [11]. PSPCQ consists of 20 items measuring two main dimensions: Friendly Explanation which covered 11 items aspects of service such as staff's professional conduct, service promptness, pharmacy appearance, patient's relationship with pharmacist, how well pharmacist answered questions, explained on drug indication and its administration ways. The other nine items cover another dimension termed Managing Therapy which includes pharmacist's interest on patient's health, pharmacist's management and responsibility for drug therapy, pharmacist's determinations to ensure medication work as intended, ability to solve drug-related problems and to improve patient's health [12]. Each question was scored on a Likert-type response from 1 to 5 (poor, fair, good, very good and excellent). The score of 100 indicates the highest satisfaction towards pharmaceutical care. Higher scores denoted higher satisfaction level.

Medication adherence was tested using the Malay version of the validated eight-item MMAS [13]. The Malay version of the MMAS is an eight-item questionnaire with seven yes/no questions and one question answered on a five-point Likert scale. The scoring system for the MMAS indicates that 8 = high adherence, 6 to <8 = medium adherence and <6 = low adherence. Patients who had a score of low and medium were considered non-adherent.

2.3. Data analysis

The results for the socio-demographic criteria, patient satisfaction and medication adherence scores were presented descriptively. The categorical variables were presented in frequencies and percentage, while continuous variables were shown in mean and standard deviation. Association between categorical variables was determined using Chi-square or Fisher's exact test whenever appropriate. Multiple logistic regression was applied to determine associated factors of categorical dependant variable patient satisfaction/high adherence (Yes/No) (outcomes) with multiple categorical independent variables (predictors). Backward and forward stepwise logistic regression was used for the variable under interest (satisfied/dissatisfied and high adherence: Yes/No) which was binary. The final model was obtained using the likelihood ration based on maximum likelihood estimate. Model fitness for final model was checked by using the Hosmer–Lemershaw test, over all classification of correct outcome and area under the receiver operating characteristic (ROC) curve. For multivariate analysis, results were presented with adjusted odds ratios with 95% CI, likelihood ratio test statistics and p-value. All statistical analyses were conducted using the statistical package, SPSS version 18.0 for Windows (SPSS Inc. Chicago, IL, 2009). The conventional 5% significance level was used throughout the study.

3. Results

There was almost equal participation from male and female patients. Overall, majority of the patients were Malay 120 (72.7%), and most of the patients were from age group more than 50 years. Further details about patient's education and income status are shown in Table 1. Out of 165 patients, majority were satisfied with the service (86.7%), while 13.3% of them were not satisfied. The mean score for patient satisfaction was 76.8 (SD 13.8). Among the two dimensions, Friendly Explanation showed higher mean score (3.87 ± 0.67) compared to Managing Therapy (3.80 ± 0.75) (Fig. 1). The mean for total PSPCQ score was 76.8 ± 13.8 with the maximum and minimum total score of 100 and 42, respectively.

Initial bivariate analysis showed that Malays those who are not currently employed and those with no income were more satisfied to the pharmaceutical services provided during DMTAC ($p < 0.05$).