Effect of group visits on patient satisfaction with care among type 2 diabetics in a Nigerian hospital

Joy A. Shu'aibu[1],Musa Dankyau[1],Joshua A. Sule[2].

Abstract

Background: To demonstrate the effectiveness of group visits in the management of type 2 diabetes mellitus (T2DM), and the effect on patient satisfaction.
Methods: Two hundred consenting type 2 diabetics receiving care at the general outpatient department of Bingham University Teaching Hospital were recruited and randomly allocated into intervention (group visits) and control (regular care) arms. Socio-demographic, clinical and patient satisfaction data were obtained with standardized questionnaires and the participants were followed up over three months.
Results: A total of 142 patients (82 intervention and 60 control) completed the study. The subjects were comparable at baseline regarding age, sex, marital status, educational level, and mean fasting blood glucose. Overall, 88.3% of the usual care group vs 95.1% of the intervention group were satisfied with care (p= 0.13). Mean satisfaction scores were higher in the intervention group 71.0±8.6 vs 69.6±10.1 (p=0.36), and there was a significant difference in the ease of communication dimension (p= 0.02). The mean duration of consultation was 12.5± 2.3minutes per patient in the control group vs 7.5± 2.3 minutes in the intervention group (p<0.0001).
Conclusion: This group visit model is a practical option for management of T2DM in primary care settings in Nigeria. It also increases patient satisfaction with communication and decreases consultation time.

Keywords: Type 2 diabetes mellitus, patient satisfaction, group visits, glycaemic control, consultation time

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Introduction

As the global population ages, the burden of diabetes is expected to increase.[1] It is estimated that in the next decade this ageing will result in an additional 100 diabetic patients per 250,000 populations.[1] Based on these calculations, the traditional model of diabetes care may be unable to cope with this increased demand. Most patients with diabetes are managed in primary care settings.[2] The model of care that includes an educational component and most elements of an individual provider office visit is called a "group visit". This model was introduced in the '1990s' to optimize time and quality of care.[3] Group visits are one of the initiatives proposed to have the most impact on patients and practices.[4]The idea of group visits stems from the behavioural belief that humans have a much greater drive for sameness than originality.[5]A group visit typically includes an interactive group education component and rudiments of an individual patient clinic visit that may be delivered in the group setting or privately. Group visits incorporate the organizational features of hospital specialty clinics into primary care, by inviting a group of patients with a given condition to participate in a specially designed visit at a regular interval with the primary care team.[6]

Patients with diabetes often have comorbid conditions requiring a significant amount of time in individual appointments to assess, educate and prescribe appropriate medications and treatments.[7]It is difficult to fulfil the complex needs of patients with diabetes for social, educational and psychological counselling in brief problem focused office visits.[8]Providers and patients are often frustrated with the amount of time allocated for a typical visit to adequately address such problems.[8]To alleviate this frustration, the concept of group visits was introduced and continues to gain momentum in the primary care setting.[9]Studies of group medical visits have reported increased patient satisfaction, improved health behaviours, doctor-patient relationships, quality of life and control of mean blood glucose.[10] Reduction in blood pressure and cholesterol, obesity, emergency and urgent care visits as well as better medication compliance and increased self-efficacy are also associated with group visits.[10-13]

Patient satisfaction with medical care is a measure of patient perception of the quality of that care. Its importance as an outcome of healthcare is now accepted

[1]Department of Family Medicine, Bingham University Teaching Hospital, Jos, Nigeria. [2]Department of Family Medicine, Jos University Teaching Hospital, Jos, Nigeria

All correspondences to:
Dr Shu'aibu AJ
Department of Family Medicine, Bingham University Teaching Hospital, PMB 2238, Jos, Plateau State, Nigeria
Email: joyjosh2003@yahoo.com

and its measurement is being encouraged.[14] Patient satisfaction has long been considered an important component when measuring health outcomes and quality of care.[15]Achieving a high level of patient satisfaction has also been shown to lead to improved health outcomes.[16]

This study was carried out to primarily measure type 2 diabetic patient's satisfaction with the group visit model of care compared to routine care.

Materials and Methods

The study was conducted at Bingham University Teaching Hospital Jos, the Plateau State Capital. The hospital is a 200 bed centre and provides healthcare mainly for patients from Plateau State and the neighbouring States. Approval to conduct the study was obtained from the Bingham University Teaching Hospital Research and Ethics Committee.

The General out-patient clinic runs daily. Unpublished Hospital data shows that an average of 500 patients are seen weekly out of which 50 are diabetic. Included in the study were consenting T2DM (based on fasting blood glucose levels greater than 126 mg/dl or its equivalent of 7.0 mmol/L at diagnosis) who were >18 years of age. We excluded patients with severe hearing loss, psychotic patients, patients with dementia and pregnant women.

The sample size for the study was calculated using the formula for comparison of groups with a 95% confidence interval and the degree of accuracy set at 0.05.[17] The total sample size for this study was 150 (75 each for the intervention group and the control group). A 20% attrition rate was assumed giving a total sample size of 180 participants but for the purpose of sampling convenience, the sample size was rounded up to 200 participants.

From an assumed sample frame of six hundred type 2 diabetics expected to be seen for the three months duration of the study, a sample interval of every third subject was used to recruit a total of 200 subjects. Each block of forty consenting patients were randomly allocated by a research assistant into either the intervention or control group until 10 blocks consisting of a total of 200 consenting type 2 diabetic patients were formed. A questionnaire was administered at the recruitment phase for the purpose of history taking.

Those randomised to the intervention arm, were also issued a letter of invitation to the group visit explaining its purpose, duration, agenda, time and venue. A confidentiality bond for all group members who consented to the intervention was signed by each member. A group visit delivery team consisting of a nurse, laboratory scientist, educator and physician was formed and briefed about their various roles and expectations. Two days before the group visit, the care team met to go over final preparations for the meeting, retrieved the outpatient cards of all expected patients and sent out text messages to remind all expected patients. Group visits for each block of 20 patients were carried out on five consecutive days of a particular week, whereas the five blocks of 20 patients in the control group were seen by another family physician on five consecutive days of the following week. The duration of each consultation in minutes was recorded.

Both intervention and control groups were given appointments at the same time of the day (8am). On arrival at the hospital, patients had their blood drawn by the laboratory scientist and tested with a Glucometer (Assure 4, Taiwan).

Blood pressure was measured using the mercury sphygmomanometer (Dekamet MK 3, England), weight in kg using a standardized bathroom weighing scale (SALTON RED 307, China), and height in metres using a stadiometer (Detecto Medic, USA). Medication refills were done and the visit agenda carried out as planned.

At the end of three months, a research assistant not exposed to the study group was recruited to administer a patient's experience questionnaire. The patient's experience questionnaire is a validated instrument that had been used in several primary care outpatient settings.[17]The instrument has 18 items, with responses graded from 1 to 5 on a Likert scale. It consists of satisfaction ratings in 4 categories: outcome of the specific visit, communication, experience with auxiliary staff and emotions after the visit. The patient experience questionnaire is short and can be completed in a few minutes in the waiting room. The overall high response and completion rate support acceptability. Face and content validity was ensured through extensive qualitative and quantitative analyses.[17] Construct validity was confirmed by factor analysis in two surveys with a large number of patients and by comparison with several validation questions on unfulfilled expectations and overall satisfaction. Reliability of the instrument was good with a Cronbach index of 0.82.[18] The sum of the scores allotted to each question was taken, giving a total maximum score of 98. Any one scoring 58 and above was categorized as satisfied and otherwise as dissatisfied.

Data Analysis

Data collected was analysed using SPSS (Statistical Package for Social Sciences) software 17.0. Analysis was done using chi-square, student t-test and statistical means. p values < 0.05 were considered significant.

Results

Within the period of recruitment, 320 diabetic patients were seen in the outpatient department of Bingham University Teaching Hospital. A total of 120 patients were excluded while 200 were recruited. Following

allocation into the two study groups, 22 patients from the control group did not return for the second visit, while 12 of those in the group visit did not turn up for the second group session. By the third visit, 18 more of the patients in the control group were lost to follow up while 6 patients in the intervention group were lost to follow up as represented in Figure 1.

Seventy one percent of the study group completed the study. Attrition rate for the intervention group was 18% (n=18) while in the control group it was 40% (n=40). The subjects were comparable at baseline regarding age, sex, marital status, educational level, mean fasting blood glucose, BMI and DBP (Table 1). At the end of the intervention, group visit 78 (95.1%) were satisfied compared to the control group 53 (88.3%), X^2=0.13, p=2.2. Further analysis revealed a higher mean patient satisfaction score in the communication barrier subscale for the intervention group (14.2±3.0 vs 12.8±3.9, p=0.02) (Table 2).

Table 1: Characteristics of subjects at baseline

Variable	Intervention	Control	P value
Sex (M/F)	36/46	29/31	0.36
Age, Mean±SD	49.1±10.9	53.9±10.3	0.07
Married	65(74.2%)	48(80%)	0.87
Positive family history of DM	35(42.7 %)	16(26.7 %)	0.049
Tertiary education	29(35.4%)	15(25%)	0.29
Duration of DM, Median (Range)	4(0.5 - 21)	6(1 - 30)	0.52*
BMI, Mean±SD	27.62±6.2	26.14±4.2	0.002
FBG, Mean±SD	186.38± 85.8	180.75±76.5	0.35
Systolic BP (mmHg)	128.89±24.79	161±5.43	<0.001
Diastolic BP (mmHg)	82.22±14.23	84±12.64	0.34

*=Mann-Whitney U-test

Table 2: Mean Patient Satisfaction Scores

Patient satisfaction categories	Intervention (n=82)	Control (n=60)	P value
Outcome of specific visit	12.9±3.0	12.6±3.2	0.59
Communication experience	17.2±2.0	17.5±2.6	0.41
Communication barrier	14.2±3.0	12.8±3.9	0.02
Experience with auxiliary staff	6.2±2.5	6.5±2.7	0.47
Emotions after Visit	20.7±5.0	20.2±3.9	0.56
Overall Patient Satisfaction	71.0±8.6	69.6±10.1	0.36

Table 3: Factors associated with patient satisfaction in entire study group

Variables	Wald statistic	P Value	Adjusted Odds ratio (95%CI)	P Value
Age	1.54	0.21	2.27 (0.62- 8.30)	0.14
Gender	0.49	0.48	1.53 (0.47 - 5.02)	0.51
Marital status	0.21	0.65	1.46 (0.29 - 7.45)	0.59
Occupation	0.56	0.46	2.29 (0.26 - 20.16)	0.41
Glycaemic control	2.65	0.81	0.81 (0.25 - 2.65)	1.00
Educational level	0.73	0.18	0.18 (0.02 - 1.42)	0.09

*= Multinomial Logistic Regression

Multinomial logistic regression did not show any statistically significant correlation between key demographic variables with patient satisfaction (Table 3).

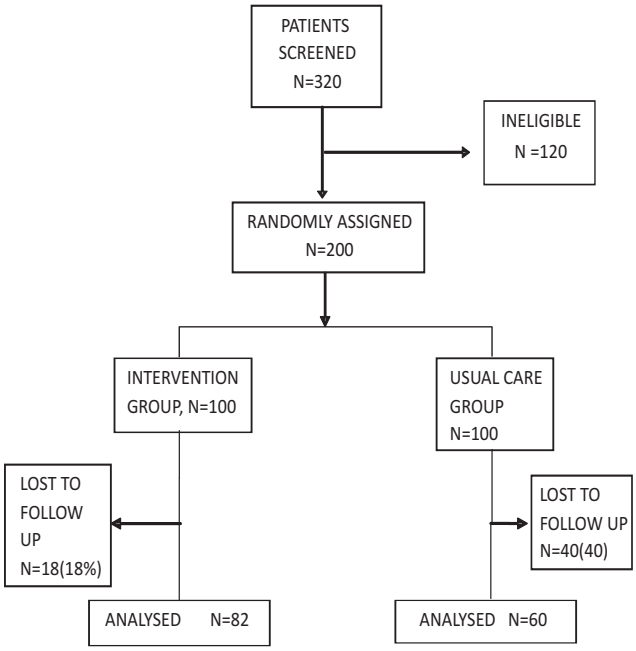

Figure 1: Study Flow Diagram

Discussion:

This study was carried out to find out the effect of group visits on satisfaction of type 2 diabetics in a primary care setting. The secondary outcome measure of interest in the study was the mean fasting blood glucose measurement.

Similar proportions of subjects in the intervention and control groups were satisfied. The overall satisfaction score reported in this study is slightly higher than the rates reported by other authors.[10-12] This may be due to the current limitations of healthcare delivery to patients in developing societies where this study was conducted. These limitations include literacy levels of

patients and the fact that health care systems do not routinely seek feedback of patient's regarding the care they receive. Moreover, the health care system is seen as providing help and any attempt to criticize the delivery of services is perceived as ingratitude. Hence, interventions that improve patient satisfaction may lead to disproportionately higher responses in those who had not enjoyed patient centred care. Another possible reason may be the infrequent exposure of patients in developing countries to ratings of services including health care.

The ease of communication subcategory of patient satisfaction score also revealed higher scores for the intervention group compared to the control group. Doctor-patient communication has been found to significantly affect ratings of patient satisfaction.[12] Studies have shown that when physicians exhibit less dominance by encouraging patients to express their ideas, concerns and expectations, as obtains in group visit settings, patients were more satisfied with their visits.[19] A similar study showed that better communication skills as compared to technical expertise of the physician was also linked to higher patient satisfaction.[20] The group visit setting also fostered communication between group members and the team of care givers, and this interaction was noticed to have become more cordial and extensive with subsequent visits.

At the end of the intervention, there was no significant difference in patient satisfaction scores of the intervention and control groups. Most of the studies that considered patient satisfaction with care as an outcome measure for group visits reported an increase in patient satisfaction score, even though some studies were unable to report a statistically significant difference in satisfaction scores between the intervention and control groups.[12,21-23] The studies that demonstrated a statistically significant difference in satisfaction scores had a range of study duration from six months to five years compared to our study that lasted for three months.[12,21,22]

This study also sought for factors related to patient satisfaction with care. The indices considered were age, marital status, gender, educational qualification, occupation and number of years post diabetes diagnosis. None of the factors studied had any significant relationship with patient satisfaction as measured by the patient experience questionnaire.

The literature appears conflicting on the importance of patients' demographic and social factors in determining satisfaction. Some studies stated that patient demographics are a minor factor in patient satisfaction, while others concluded that demographics represent 90-95 % of the variance in rates of satisfaction.[24,25] Nevertheless, the literature does shed some light on how particular demographic factors affect patient satisfaction. The most consistent finding has been related to age; older patients tend to be more satisfied with their health care.[25] The effect of gender is less clear as some studies show that women are less satisfied while other studies show the opposite.[25] Most studies have found that individuals of lower socioeconomic status and less education tend to be less satisfied with their health care.[25]

Patients with poorly controlled diabetes as well as patients with two or more chronic illnesses have been shown to be less satisfied with their care, but when communication and coordination of care increased, the patients' satisfaction improved.[26,27]

Time spent during a visit plays a role in patient satisfaction, with satisfaction rates improving as visit length increases.[28] An average of 12.5 ± 2.3minutes was spent on each patient in the control group compared to 7.5±1.5 minutes per patient in the intervention group (p=<0.0001). This is probably because most of the activities during the visit for the intervention group were delivered to the group members at the same time. Some authors have reported group visits as less time consuming in comparison to the usual one-on-one consultation but none of these studies computed the actual duration of consultation, and compared control and intervention groups.[5-8]

The use of fasting blood glucose measurements (as against glycated haemoglobin which is the standard measure for glycaemic control) and discrepancy in time of arrival of group visit participants for group sessions may have impacted our findings.

Conclusion

This study has demonstrated significantly higher patient satisfaction scores in the ease of communication subcategory of patient satisfaction in the intervention group. Time of consultation was also significantly lower for group visits.

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