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RESEARCH ARTICLE

The Level of Satisfaction of Diabetic Patients with Healthcare Personnel Attending Outpatient Health Clinics in Jamaica

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Abstract

Introduction: The burden of diabetes mellitus is increasing in low-income and middle-income countries, and it is a major contributor to premature mortality. The care of patients with diabetes mellitus is multidisciplinary and involves a number of healthcare personnel. Effective communication between diabetic patients and healthcare personnel influence self-management and health outcomes.

Aim: The study evaluated the diabetic patient's assessment of the communication skills of the healthcare providers, as well as an assessment of the patients' understanding of the health information.

Method: The study is a cross-sectional design using primarily a quantitative methodology. The study population consisted of 101 diabetic patients. A 14-point interviewer administered questionnaire was used to solicit information on socio-demographics, medical history, rating of provider communication, and the evaluation of specific health care workers and information sharing. The data was analysed using SPSS version 17.0 and Microsoft Excel 2007. Descriptive statistical analysis was applied with a 95% confidence level and a precision ± 5%.

Results: The findings revealed that 45.5% of diabetic patients rate the level of communication with regards to health worker sharing information about diabetes mellitus and its management as 'very good' (45.5%) with a the mean score was 2.79 ± 0.86. Descriptive analysis revealed that 52.5% of respondents were generally satisfied with the providers' communication, while 47.5% was not (mean score obtained 9.6 ± 2.77). There was no association between total satisfaction and gender (p = 0.065), neither with age (p = 0.813), education level (p = 0.153) or employment status (p = 0.701).

Conclusion: The findings from this study revealed that the level of communication of information by the healthcare personnel about diabetes mellitus and its management was very good. Just about one-half of the respondents were generally satisfied with the provider's communication. The multidisciplinary approach to care of diabetic patients by healthcare professionals should be structured to promote better communication by maximizing the presentation and exchange of information, and better understanding of diabetes care.

Introduction

The worldwide prevalence of diabetes mellitus in adults reported in 1995 was approximately 4.0% and projected to increase to an estimated 5.4% by 2025 [1]. The International Diabetes Federation reported an estimated value of 8.3% for the global prevalence of diabetes mellitus in 2011 and a projected increase to approximately 9.9% by 2030 [2].

The burden of diabetes mellitus is increasing in low-income and middle-income countries and it is reported that approximately 80% of persons with diabetes mellitus resides in these countries [2]. The Caribbean over the past two decades has being experiencing economic growth and there is a concomitant rise in the number of cases of type II diabetes mellitus. According to the International Diabetes Federation in 2013, diabetes mellitus is expected to affect an estimated 10-15% of adults in Caribbean countries [3] and is

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responsible for approximately 14% of all deaths among persons over 18-years-old in the region [2].

Over the last two decades a number of cross-sectional studies of selected adult population in different areas of Jamaica, examining the prevalence of diabetes mellitus was conducted. In the 1995 the National Survey of Jamaica involving persons 15 years and older reported prevalence of 17.9% while the a survey in Spanish Town conducted by Wilks, et al. of adults 25-74 years old gave a prevalence estimate of 13.4% [4,5]. The island-wide Jamaica Health and Lifestyle Surveys conducted in 2000-2001 and 2007-2008 among persons 15-74 years old reported prevalence estimates of 7.2% and 7.9% (after adjusting for the sampling methodology) respectively [6,7].

Diabetes mellitus is a major contributor to premature mortality [8] and it is reported that the disease accounts for approximately 10% of mortality in Jamaica [9]. In an earlier study by Alleyne, et al. diabetes mellitus accounted for 6.5% of all deaths, however the mortality may be underestimated as the disease may contribute to deaths from other causes such as myocardial infarctions and cerebrovascular accidents [10].

Acknowledging the factors that influence compliance of patients, and the related social context, this research focused on the primary health care within the parish of St. James, Jamaica. The St. James Public Health Services provides preventative and curative health care primarily to a population of over 182,600 persons. This accounts for approximately 39% of the total populace of the Western Region. The parish of St. James is served by 23 health centres. This includes twelve (12) Type 1 health centres, seven (7) Type 2 health centres, three (3) Type 3 and a Type 5 facility. However, medical clinics that facilitate the management of persons with chronic diseases are conducted at the Type 2, 3 and 5 health facilities.

The control of chronic non-communicable diseases, specifically diabetes mellitus, continues to pose a challenge within the parish. The literature addressed the multiplicity of challenges that exist which influence diabetes control, such as service delivery, availability of medication, literacy levels, communication and lifestyle factors to name a few. These are not uncommon to the health services in St. James; however, with the challenges associated with resources the impact of communication on health behaviours is questionable.

Street and Epstein (2008) highlighted that physician-patient communication can improve health by empowering patients to be active, capable agents in managing their health [11]. Although the literature referred to the 'physician/medical doctor' as the major player in the care of the patient, within the primary health care setting health information can be disseminated from a number of health care workers (e.g. paramedic group and support staff).

Therefore, this research examined the patient with diabetes mellitus perception of the health workers' communication, and their understanding of the information given to them by healthcare professionals. This will involve the patient's assessment of the communication skills of the healthcare providers, as well as an assessment of the patients' understanding of the health information.

Materials and Methods

The study is a cross-sectional design using primarily a quantitative methodology. The study population consisted of patients attending medical clinics within St. James, who have been entered in the chronic disease register, having been diagnosed with diabetes mellitus (N = 437 persons as at January 2012). Using the University of Florida IFAS PEOD6 document (Israel, 2009) [12] a sample size of 212 persons was calculated [Formula: $n = N/1 + N (e)^2$, where n = sample, N = population size, e = level of precision, 0.05, CI = 95%]. The distribution by health centres was then calculated manually. Convenience sampling was used to recruit the persons for this study versus the systematic random sampling previously proposed. This was based on the clinic attendance rate of patients and the time frame for conducting the research. Patients were referred for inclusion, after being assessed and confirmed as having diabetes mellitus. This was followed up with docket reviews by the researcher to ensure patients met the inclusion criteria. Additionally, attempts were made to contact patients listed in the diabetes register to ascertain scheduled clinic appointments.

The inclusion criteria for the patients in the study were: Previous diagnosis of diabetes mellitus, attending a health centre or medical clinic for a year, attending the clinic on the day of visit by the researcher and residing in St. James. The exclusion criteria were: diagnosis of hypertension, newly diagnosed persons and persons with only 2 docket entries from the medical clinic.

Approval for the study was obtained from the Ethics Committee of the Western Regional Health Authority [WRHA] which required modification of the initial proposal as the researcher sought funding assistance from the WRHA. Ethical observance was maintained in conducting the interview and seeking consent, as well as docket searches.

The data was collected over a three month period, from February to April 2012 through the use of interviews and docket reviews of patients recorded in the chronic disease register. A 14-point interviewer administered questionnaire was used to solicit information on socio-demographics, medical history, rating of provider communication, and the evaluation of specific health care workers and information sharing. Additionally, allowance was made for qualitative inputs by way of asking for comments from the respondents

regarding the assessments made. This instrument was adopted from Heisler, et al. for which permission was requested via email [13].

The questionnaire was pre-tested and adjustments were made with regards to re-phrasing of questions and re-structuring. Chronbach's Alpha was run on the sample used for the study, at a confidence interval of 95%, which indicated a value of 0.624. A research assistant was trained in administration of questionnaires and evaluated during the training session and the initial phase of data collection, to ensure reliability and validity of data.

The respondents were asked to rate the level of communication with regards to sharing information about what diabetes is and its management (excellent to poor). The response from the participants were scored on a scale of 1- 4 with 'Excellent' = 4, 'Very Good' = 3, 'Fair' = 2, 'Poor' = 1). The mean score was also calculated. The data was also computed and re-coded to ascertain a total level of satisfaction on a scale of 0 to 20 ('not satisfied' = scores 0 to 9; 'satisfied' = scores 10 to 20). Seven categories of healthcare workers were evaluated by respondents with regards to understanding of information sharing. The responses were re-coded and scored on a scale of 0-4 ('All the time' = 4, 'Most times' = 3, 'Sometimes' = 2, 'No = 1', 'No interaction' = 0).

The data was analysed using SPSS version 17.0 and Microsoft Excel 2007. Descriptive statistical analysis was applied with a 95% confidence level and a precision ± 5%. Both univariate and bivariate analyses were used to explore the data.

Results

There were 101 respondents who participated in the study, which accounted for 47.6% of the calculated sample size (212); meanwhile 2.4% indicated an unwillingness to participate, while the remaining respondents were not reached due to a number of factors. Females represented 71.3% (n = 72) of the respondents, while male respondents were 28.7% (n = 29) (Table 1). More than 50% of respondents (52.5%) were younger than 50 years, and more female fall within the 40 to 49 years age group (88%). Two-fifths (40.6%) indicated that they were; 31.7% indicated they were single and 21.8% indicated they were living with their partners (Table 1).

The findings revealed 40.7% of the respondents were employed, 48.5% completed secondary level education and 35.6% only attained primary level education (Table 1). When asked 'how long have you had diabetes' 35.6% indicated having had diabetes mellitus for 10 years or more and 11.9% for 7-9 years. When compared with age, 48.5% (n = 15) of persons within the 40-49 age group had diabetes mellitus for 4-6 years while 30.6% (n = 11) have been diagnosed for 10 years or more (Table 1).

Table 1: Demographic characteristics.

	Frequency (N)	Percentage (%)
Gender		
Male	29	28.7
Female	72	71.3
Age		
20-29	6	5.94
30-39	14	13.86
40-49	33	32.67
50-59	29	28.71
>= 60	19	18.81
Marital Status		
Married	41	40.59
Single	32	31.68
Divorce	1	0.99
Living with partner	22	21.78
Visiting relationship	3	2.97
Living with family	2	1.98
Education		
Early Childhood	2	1.98
Primary	36	35.64
Secondary	49	48.51
Tertiary	8	7.92
Other	6	5.94
Employment		
Employed	41	40.68
Self-employed	26	25.73
Un-employed	25	24.85
Hustle now and then	6	6.64
Other	3	3.10
Duration of diabetes		
1-3 years	22	22
4-6 years	31	31
7-9 years	12	12
>= 10 years	35	35

Notes* Duration of diabetes had 100 respondent while all other variables had 101.

When asked to rate the level of communication with regards to health worker sharing information about what diabetes mellitus is and its management (excellent to poor), the most common response was 'very good' (45.5%) and the mean score was 2.79 ± 0.86 (Table 2). Approximately 50% of respondents (49.5%) were of the opinion that the health workers explanation of laboratory results was "very good' (mean score = 2.73 ± 0.85). In response to rating the explanation of side effects of medication 'poor' was cited by more than half of the respondents (54.9%). When scored on a scale of 1-4 ('Excellent' = 4, 'Very Good' = 3, 'Fair' = 2, 'Poor' = 1), the mean score was 1.47 ± 1.07. 'Very good' was the modal response (45.5%) given when asked how satisfied respondents were with the sharing of information with regards to diabetes mellitus treatment (mean score = 2.62 ± 0.89) (Table 2).

Descriptive analysis revealed that 52.5% of respondents were generally satisfied with the providers' communication, while 47.5% was not (mean score obtained 9.6 ± 2.77). There was no association between total satisfaction and gender (p = 0.065),

nor with age (p = 0.813), nor with education level (p = 0.153) nor employment status (p = 0.701). However, Mann-Whitney test revealed a statistical association (U = 739.0, p = 0.015) between gender and level of satisfaction with regards to the provider in telling the patient about diabetes mellitus, with older men (50 years and older) and younger women (younger than 50 years) being less satisfied. Of those who were satisfied, 41.5% had diabetes mellitus for 10 years or more, 22.6% had been diagnosed 1-3 years and 4-6 years, while 13.2% had been diagnosed 7 to 9 years.

When asked about understanding the information shared by the medical doctor, 'most times' was the option selected by most respondents (37.6%), however 51.2% had no comment. Overall the medical doctors received a mean score of 2.70 ± 0.85. The Family Nurse Practitioner (FNP) was understood 'most times' by 30.7% of respondents, with 13.4% of those respondents providing comments such as *'patient', 'willing to explain', 'more understanding', 'more detailed'*. However, 44.6% indicated they have had 'no interaction' with the FNP (mean score = 1.69 ± 1.6). Approximately 40% (39.6%) of respondents indicated that they understood the information shared by the Nurses 'most times' (mean score = 2.74 ± 0.83). However the comment *'no dialogue about diabetes mellitus'* was reported by 3% of respondents.

Table 2: Provider communication satisfaction variables.

	Frequency (N)	Percentage (%)
Satisfaction with information about diabetes, i.e., what it is and how to manage it		
Excellent	21	20.8
Very Good	46	45.5
Fair	26	25.7
Poor	8	7.9
Total	101	100.0
Satisfaction with explanation about lab results		
Excellent	17	16.8
Very Good	50	49.5
Fair	24	23.7
Poor	10	9.9
Total	101	100.0
Satisfaction with information about side effects of medication		
Excellent	7	6.9
Very Good	12	11.9
Fair	15	14.9
Poor	55	54.5
Total	12	11.9
Satisfaction with information about what to expect from diabetes & its treatment		
Excellent	15	14.9
Very Good	46	45.5
Fair	27	26.7
Poor	13	12.9
Total	101	100.0

Sixty five point three percent (65.3%) of respondents indicated they had 'no interaction' with the Nutrition Personnel; while those who actually had interaction, 45.7% indicated they understood what was communicated 'most times' (mean score = 1.02 ± 1.4) (Table 3). When asked to evaluate the information shared by the Community Health Aides [CHAs] the comment *'no dialogue about diabetes mellitus'* was reported by 62.4% of the respondents (mean score = 1.64 ± 1.06). The information shared by the Pharmacist information was understood 'most times' by 36.6% (mean score = 2.35 ± 1.3) (Table 3). While approximately 15% (14.9%) indicated they had 'no interaction', as 40% of those respondents accessed the private pharmacy, 40% indicated their medication was *'collected by someone else'*, others *'did not need to access the services'* of the Pharmacist, while others did not provide a reason or comment for not accessing services (13.3%). There was limited interaction between Health Educators and respondents, as 86.1% of respondents indicated there was 'no interaction' (mean score = 1.01 ± 1.0) (Table 3).

Discussion

In this paper, we examine the patient-healthcare personnel communication relating to providing information on diabetes mellitus. The degree of satisfaction of the diabetic patients as it relates to the information from the healthcare personnel was also evaluated. The findings from this study revealed that the level of communication of information by the healthcare personnel about diabetes mellitus and its management, and laboratory test results offered to diabetic patients was very good. Delamater [14] posited that diabetic patients who are satisfied with the relationship with their healthcare providers are more likely to have better treatment compliance [14]. Additionally, there are a number of studies that suggest that there is an association between the quality of

Table 3: Evaluation of health workers' information sharing variables.

Variables	Doctors	FNP	Nurses	Nutrition Personnel	CHA	Pharmacist	Health Educators
All the time	20 (19.8)	14 (13.9)	19 (18.8)	9 (8.9)	0 (0.0)	17 (16.8)	2 (2.0)
Most times	38 (37.6)	31 (30.7)	40 (39.6)	16 (15.8)	9 (8.9)	37 (36.6)	8 (7.9)
Sometimes	37 (36.6)	11 (10.9)	34 (33.7)	10 (9.9)	10 (9.9)	19 (18.8)	3 (3.0)
No	6 (5.9)	0 (0.0)	3 (3.0)	0 (0.0)	9 (8.9)	7 (6.9)	0 (0.0)
No interactions	0 (0.0)	45 (44.6)	0 (0.0)	67 (66.3)	6 (5.9)	15 (14.9)	87 (86.1)
No response	0 (0.0)	0 (0.0)	3 (3.0)	0 (0.0)	63 (62.4)	0 (0.0)	1 (1.0)
Total	101 (100.0)	101 (100.0)	98 (97.0)	101 (100.0)	38 (37.6)	101 (100.0)	100 (99.0)

communication ('good'), and enhanced physical health, better management of chronic disease and improved quality of life and compliance [15-17]. However, the findings of this study did not reveal such an association.

Diabetes-specific content or information addressing areas of diabetes education conveyed during visits to the outpatient clinic is a critical dimension of the communication process between the patient and the healthcare professional. There are general communication between diabetic patient and provider which could include the patient articulating self-care challenges, consideration of patients' preference in developing treatment plans and coping strategies with illness [18]. It is noteworthy that just over one-half of the respondents cited poor giving an overall low score in responding to the explanation of the side effects of medication for diabetes mellitus. While respondents seemed satisfied with the healthcare provider communication, it was more so on 'diabetes related communication', or diabetes related information and not the "general communication" as put forward by Piette, et al. [18]. In this study it was found that there was a dissatisfaction among the diabetic patients with the 'general communication' as expressed in the recurring comments made by some respondents such as *'nothing explained', "they're just going through the motions', 'feel rushed', ' nobody takes the time to talk', 'will have to ask'*. Therefore patients are not presented with the opportunity to express their challenges and preferences, whether related to the treatment regime or the factors that impede adherence. In the absence of such opportunities for the healthcare personnel to explain information related to the care process, facilitate discussions and guide the patient to suitable support systems which should be in place to strengthen coping skills, the objective of glucose control and compliance will continue to be but a 'desire'.

Current views on self-management involve ensuring that the person with diabetes mellitus not only has access to sufficient information, skills and resources, but also feels confident in questioning the value of these [19]. This demands partnership between patients and health professionals in their approach to health care because, as one participant stated, *'the patient needs expertise as soon as possible'*. The findings of this study regarding understanding of information sharing by healthcare personnel showed that medical doctors and family nurse practitioner had similar mean scores where approximately one-third of the diabetic patients cited 'most times'. It is noted that the diabetic patients in this study are from the parish of St. James in Jamaica and they received care at outpatient clinics. The public health service in St. James is free of cost and some of the clinics are in resource-limited areas. In other resource-limiting setting where public health is free of cost, researchers reported high levels of patient satisfaction despite long waiting time, low physician-patient contact time and disrespectful behavior of healthcare personnel [20]. In addition, studies have demonstrated that illiteracy and poverty are associated with higher level of satisfaction by healthcare provider and free cost of health care [21].

There are many studies that have documented that most patients have a high desire for information regarding treatment from their physicians and their rating depend on their experience during the time spent during the visit [22,23]. Communication of information relevant to the patients' disease and care is an essential role of the physician, and patients have been shown to be less effective in seeking pertinent information from their physicians during visits of less than eighteen minutes [24]. In this study approximately one-half of diabetic patients had no comment when asked about their information shared by the medical practitioner. This may indicate that the patients may not have been comfortable with providing a response to the question. It could have meant that on their visit to the clinic they were not seen by a medical practitioner. On the other hand, patient may feel that the physicians do not explain aspects of diabetes treatment and care in sufficient detail; that they do not appreciate being asked questions, and do not convey in a manner that they understand without using medical terminology and jargon [25]. A study by Waitzkin and Stoeckle suggested in a twenty-minute physician visit less than one minute is spent conveying any information to the patients [26].

Although medical doctors and family nurse practitioner had similar mean scores as it relates to the diabetic patients' understanding of the information shared, there some patients who cited that the Nurse Practitioners were more patient, understanding and willing to explain information in detail as it relates to their care and treatment. This is not surprising as medical doctors may be constrained by the limited time available to spend with each patient, while nurses generally spend more time with patients and one of their main tasks is to provide adequate and relevant information regarding care to the patients. It is noted that almost one-half of the diabetic patients did not interact with the Nurse Family Practitioner and this is unusual as most public health centres in Jamaica has a cadre of these health care professionals. Further, it was observed that almost one-ninth (86%) of the respondents indicated that they had no interactions with Health Educators, specializing in diabetes education and management. This may be due to a shortage of diabetic educators in St. James as the Ministry of Health in Jamaica is not able to provide diabetic clinics with least one of these health care professions due to budgetary constraints.

The moderate ranking by the diabetic patients in the study is partly due to some patients being dissatisfied with communication with physicians in the outpatient clinics. On the other hand, there are not many physicians that serve outpatient clinics in

Jamaica, and in particularly the parish of St. James. In addition, physicians may be overwhelmed with tending to the clinical as well as psychosocial needs of many patients including to those with diabetes mellitus. In a study by Beverly and colleagues, physicians although they felt that the multi-disciplinary team was very important to diabetes care and treatment, they were inadequately trained to address the psychosocial needs of the patients. This perceived lack of expertise may contribute to physicians being overwhelmed and frustrated which negatively affect the physician-patient interaction [27]. For the patients, barriers to communication with the physician include reluctance to discuss self-care for fear of being judged, not wanting to disappoint their doctors, shame, guilt due to adherence, severely depressed, cultural and class differences, lack of family and social support and lack of readiness to change [28-31]. While factors such as level of education and health literacy as well as economic and social differences negatively impact the patient-physician relations in Jamaica and in particularly St. James, it is noted that the communication seemed paternalistic in nature. With the paternalist communication approach, it becomes possible for the assumption to be made by the healthcare personnel that once the patient has not carried out the instruction given, then the patient has not complied, without consideration being given with the context in which the patient is expected to adopt the positive health behaviours.

The large number of non-respondents is a limitation of this study. However, although the study is limited by size, the findings are quite useful as they offered insight into patients' perspectives. It is very evident from the study that collaboration between healthcare professionals and patients is a critical part of diabetes care. The measures assessed in the study are based on self-report. It therefore depends on the patient ability to recall and to give their response and ratings of the healthcare professional based on their experience and their own perception.

Conclusion

The findings from this study revealed that the level of communication of information by the healthcare personnel about diabetes mellitus and its management was very good. This should provide further support for including training of healthcare professionals in communication as a component of medical education and ongoing learning and improve efforts to develop strategies for increasing patient's access to effective diabetes education in inpatient and outpatient clinics. This study, taken together with previous research on communication of healthcare professionals and diabetic patients in Jamaica, and the level of satisfaction among the latter, has implications for both the physicians and for the offering of medical care by the Ministry of Health. The multidisciplinary approach to care of diabetic patients by healthcare professionals should be structured to promote better communication by maximizing the presentation and exchange of information, and better understanding of diabetes care. This should improve patient's self-management and result in improved patient outcomes.

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