

A Survey of Pharmacists' Knowledge, Attitude and Practice on Diabetes in Three Tertiary Hospitals in Eastern Nigeria

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A good knowledge of disease management is necessary in promoting care and enhancing good therapeutic outcomes. The present study analyzed the knowledge, attitude and practice of hospital pharmacists in three referral hospitals to assess their preparedness in rendering pharmaceutical care to type 2 diabetic outpatients according to current pharmacy practices. The study was a cross-sectional survey of randomly selected hospital pharmacists at three teaching hospitals in eastern Nigeria. Retrospective data was collected using a structured questionnaire and analyzed based on descriptive statistics. A total of 130 hospital pharmacists comprising of 81 (62.3%) males and 49 (37.7%) females participated in the study. The mean duration of number of years of practice for the respondents was 23.3, 16.7 and 5.1 for University of Nigeria Teaching Hospital, Nnamdi Azikiwe University Teaching Hospital and Enugu State University Teaching Hospital, respectively. The survey revealed that the pharmacists had good knowledge of the diabetes disease and its management. While 83% believed that diabetes is dangerous, 17% felt that it should not be considered as a dangerous disease. Some of the pharmacists (25%) were of the view that patients' education is not the most important management tool in diabetic care while 10.8% felt that diabetic patients do not need special attention.

Key words: Diabetes, knowledge, attitude, practice, pharmacists, tertiary hospital

INTRODUCTION

Diabetes is a chronic metabolic disease with high morbidity, mortality and prevalence. In 2000, according to the World Health Organization, at least 171 million people worldwide suffered from diabetes. Its incidence is increasing rapidly and it is estimated that by 2030, this number will almost double. Diabetes mellitus occurs throughout the world, but is more common (especially type 2) in the more developed countries. The greatest increase in prevalence is, however, expected to occur in Asia and Africa, where most patients will probably be found by 2030. Escalation of the incidence of diabetes in developing countries follows the trend of urbanization and lifestyle changes, perhaps most importantly a "Western-style" diet. This suggests an environmental effect, though there is little understanding of the mechanism(s) at present. However, there is

much speculation, some of it most compellingly presented [1].

Optimum glycemic control improves treatment outcomes, the patient's quality of life and prevents life threatening diabetic related complications usually associated with poor management [2]. Good knowledge, attitude and practice of the pharmacists who are an integral part of the care givers will impact positively on patients' treatment outcomes and quality of life. Furthermore, they are in a strategic position to interact with and educate patients. Patient education is an invaluable tool in diabetes management with improved treatment outcomes and prevents complications associated with poor glycemic control. This study used knowledge, attitude and practice assessment to identify the need for modifications, improvement and innovations in the management of diabetics [3]. This is fundamental to the pharmacist taking responsibility in this era of pharmaceutical care.

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The study will contribute significantly in the identification of diabetes management gaps for enhanced service delivery and outcomes.

METHODS

Study area

The study was conducted in two teaching hospitals in Enugu State, Enugu State University Teaching Hospital (ESUTH) and University of Nigeria Teaching Hospital (UNTH) as well as one federal teaching hospital in Anambra State, Nnamdi Azikiwe University Teaching Hospital (NATH). Enugu State is a mainland state in South-eastern Nigeria while Anambra State lies in Eastern Nigeria.

Study design

The study was a retrospective cross-sectional survey carried out in three purposefully selected tertiary hospitals in Eastern Nigeria. A simple random sampling without replacement method was used.

Sample size

The sample size was calculated using the sample size determination table [4]. Based on a population of 145 pharmacists in the three hospitals, 130 pharmacists participated in the survey in order to enhance the precision of the parameters for more reliability of the results [5].

Questionnaires

A structured questionnaire comprising of 33 standardized questions designed to assess the hospital pharmacists knowledge, attitude and practice was used to obtain data from the respondents. The self administered questionnaire was pretested among hospital pharmacists in other hospitals within the study area for comprehensibility, appropriateness and sensitivity of questions. The questionnaire was divided into four main sections namely:

A = demographic data of the respondents

B = questions to assess respondents' knowledge of diabetes

C = questions to determine their attitudes towards diabetes

D = questions to evaluate their practices

Ethical approval

Ethical approval to carry out the study was granted by the hospital ethical committees. The purpose of the study was explained to the respondents and their informed consent obtained. Confidentiality of information was maintained by excluding respondents' names and any data that could be linked to them.

Data collection

A total of 140 questionnaires were administered to the respondents over a period of eight months. The appropriately completed questionnaires (130) representing a return rate of 93% were accepted for evaluation.

Data analysis

The raw data were transcribed from the questionnaires into MS Excel spread sheets (Microsoft Corporation, Redmond, WA, USA) and analyzed using descriptive statistics. A $p < 0.05$ value was considered significant.

RESULTS AND DISCUSSION

A total of 81 males and 49 females participated in the study. The distribution of these respondents among the three hospitals is shown in Table 1 and their practice-related characteristics summarized in Table 2. Their highest academic qualifications are shown in Figure 1. The study revealed that 92.0%, 96% and 80% of the respondents from UNTH, NAUTH and ESUTH respectively gave a correct answer for fasting plasma blood glucose for diagnosis of diabetes.

Over 90% of the respondents from the three hospitals were correct about the value for 2 h plasma glucose concentration for diagnosis of diabetes while all the respondents knew the meaning of impaired glucose tolerance. The percentage of respondents who gave the correct response for the glucose load for glucose

tolerance test were 85.7%, 82.0% and 60.0% for UNTH, NAUTH and ESUTH respectively while more than 90 % in the three sites knew the

correct value for Oral Glucose Tolerance Test (OGTT).

Table 1: Socio-demographic characteristics of the respondents

Sex	UNTH	NAUTH	ESUTH	Group Total
Male	45	30	6	81
Female	25	20	4	49
Total	70 (54%)	50 (39%)	10 (7%)	130 (100%)

The figures in parentheses represent the percentages; UNTH = University of Nigeria Teaching Hospital; NAUTH = Nnamdi Azikiwe University Teaching Hospital; ESUTH = Enugu State University Teaching Hospital.

Table 2: Practice related characteristics of respondents

Practice Characteristics	UNTH	NAUTH	ESUTH
Mean duration of pharmacy practice in years	5.96	4.61	5.1
Average number of pharmacists	23.3	16.7	3.3
Average number of patients seen daily per hospital	28.42	33	27.1
Average duration of time spent on each patient by pharmacist (min)	12.48	11.19	15.7

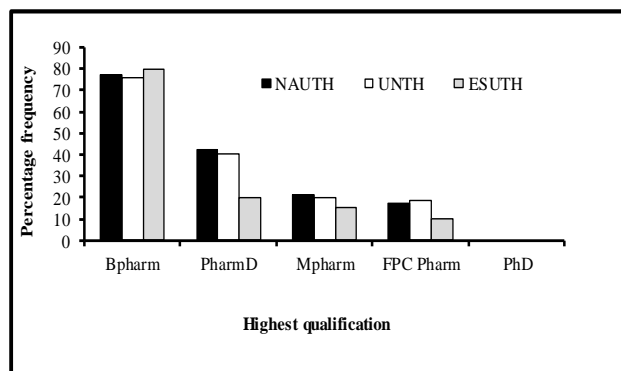


Figure 1: Frequency distribution of respondents by qualifications. ESUTH = Enugu State University Teaching Hospital; NAUTH = Nnamdi Azikiwe University Teaching Hospital; UNTH = University of Nigeria Teaching Hospital.

Only 60% of respondents in ESUTH demonstrated knowledge on diabetes co-morbid conditions compared to >90% for the other two hospitals. All the respondents from the three hospitals were correct about the diabetic treatment for children aged less than two years. Fifty percent of the respondents in ESUTH knew the blood pressure target for diabetes compared to >90% for the other two hospitals. About 92.3%, 97.9% and 77.8% of the respondents from UNTH, NAUTH and ESUTH respectively gave the correct value for total cholesterol target

for diabetes. All of the respondents from the three sites were correct about the effects of glucocorticoids and oral contraceptives on blood sugar. It could therefore be inferred that hospital pharmacists had a good knowledge base about diabetes. This could be greatly utilized in health promotion to improve diabetes prevention and control.

The study revealed that 88.5%, 92% and 70% of the respondents thought that diabetes is a dangerous disease while 58.6%, 69.4% and 50% gave the right opinion on young Type 1 diabetes patients being allowed to adjust insulin on their own from UNTH, NAUTH and ESUTH respectively. About 80.0%, 75.5% and 70 % of the respondents from UNTH, NAUTH and ESUTH respectively believed that education is the most important factor in the management of diabetes which is consistent with previous studies [6]. Over 80% of the respondents presented the right attitude on the needs of diabetes mellitus patients. All the respondents held the right opinion on monitoring of patients' medication use and diabetic women not avoiding pregnancy. These findings indicate a good attitude towards the diabetes disease state by the respondents.

Assessment of professional practice revealed that 88.6%, 86.0% and 60% of the respondents from UNTH, NAUTH and ESUTH agreed that insulin should be injected at an angle of 45 degrees. Over 90% of the respondents from three hospitals acknowledged that pregnant diabetics should be treated with insulin and diabetic patients with eye problems should see a physician while 91.4%, 94.0% and 77.8% from UNTH, NAUTH and ESUTH respectively were of the opinion that blood cholesterol levels, as well as eye and renal function, be checked regularly. This is not consistent with the findings of Saini *et al.* study in which high caliber professionals were found to be deficient in attitude and practice [3]. About 91.2%, 92.0% and 77.8% of respondents from UNTH, NAUTH and ESUTH respectively gave the correct responses about suitable antihypertensives for diabetics. The analysis of variance showed that the knowledge, attitude and practice of hospital pharmacists in the three hospitals were variable.

CONCLUSION

The present study showed that there was statistically significant difference for knowledge, attitude and practice among the three tertiary hospitals surveyed. Efforts should be geared towards mandatory continuing education for pharmacy personnel. The pharmacists had good knowledge and attitude towards diabetes but were deficient in practice habits on the care of diabetics. Targeted regular training to keep abreast with the current trends of care and disease state management could translate to improved health outcomes and minimize waste

of resources associated with poor management. This is especially in countries operating on out-of-pocket payment of health bills.

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