INFORMATION NEED ANALYSIS OF DIABETICS – ADVOCACY THROUGH SHORT MESSAGE SERVICES (SMS)

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Abstract– Information is a prerequisite for individuals and communities for the prevention, treatment, and control of chronic diseases including diabetes. Diabetes is fast gaining the status of a potential epidemic in India with more than 62 million diabetic individuals currently diagnosed with the disease. This article examines the advocacy provided to diabetes respondents by SMS to meet their information need. The information needs of the diabetic respondents were studied with the help of developed interview schedule. The information needs of the respondents were collected in terms of clinical, nutrition and management domains. Taking in to account each information need, broader content to be provided to satisfy the need was developed. Short messages both in text and voice format were developed, in Telugu and English in accordance to the information need of the respondents addressing behaviour domain – KAS. A total 60 text and 30 voice messages were developed. The text message provides the narration and voice message an appeal or direction for action. To measure the perception level of respondents on disseminated messages, a check list on three-point continuum with options strongly agree, agree and disagree for the statements, with a score of 3, 2 and 1 respectively, reflecting the content and respective behaviour domains, were prepared. It was administered to the sample, i.e. both experimental and control group. For this investigation, the random sampling method was used. The mean score for nutrition information need was higher in both experimental and control groups and low for management information needs. A significant difference between experimental and control was found when computed t values through independent t test.

INTRODUCTION

Diabetes is a metabolic disorder which has reached an epidemic state. According to WHO "Diabetes is on the rise. Provision of education and information forms a major part of chronic disease management strategies. People with chronic disease who receive education are presumed to be in a better position to take responsibility for their own health, participate in their own health care and management, and thus maximize their health outcomes. Knowledge and information, however, is not necessarily translated into action or better health behaviours. Knowledge, attitude and skill can positively influence behavioural change in individual's diabetes so as to adhere to diet, physical activities, monitoring blood glucose and taking oral medication and insulin.

Adherence to these measures reduces chronic complications, mortality and morbidity due to diabetes. Adequate information and knowledge in diabetes can help better management of diabetes. Diabetes education and hence information is cornerstone for effective self- management of the disease thereby reduce the complexity of the diseases.

The purpose of the present study was to identify and analyse the information need of diabetic patients, categorize needs into clinical, nutrition and management areas. The identified information needs were developed into text and voice messages. Developed messages were disseminated to satisfy the information need and study change in perception level of experimental and control group. An experimental study with the following objectives.

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METHODOLOGY

Based upon the nature of the research problem and objectives of the study, an experimental research - after only with control design was adopted to conduct the present study. Hyderabad was selected purposively as it has emerged as highest metro city for diabetes incidence. The sample for the present study comprised of diabetic patients. A total of 90 diabetic patients, were randomly selected by visiting different hospitals at the time of outpatient hours, in Hyderabad. Of them, randomly 60 were selected as experimental group and 30 as control group.

Data were collected through questionnaire, interview schedule and check list were used as data collection tools for the study. The data were entered and consolidated in Excel. To analyse the data, Excel was used for frequency, percentages and SPSS used for paired t test.

RESULTS AND DISCUSSION

The information needs of diabetics who were the respondents of the study were identified in terms of content, i.e. clinical, nutritional and management were obtained through interview schedule. The information needs of experimental were met through SMS, in text and voice formats. The perceptions of both the group's, i.e. experimental and control group was studied and compared for their statistical significance.

Information needs of the selected diabetic respondents

Information need was operationalized as a state or process started when one perceives that there is a gap between the information and knowledge available to solve a problem and the actual solution of the problem.

The identified information needs of the diabetic respondents fall under three main areas, i.e. clinical, nutrition and management. The experimental and control groups were studied to identify and analyse the information needs. The mean score for nutrition information need was found to be higher in both experimental and control groups compared to other domains. The mean score for information need of nutrition was found to be 1.50 and 1.48 for experimental and control group respectively.

The clinical information needs were followed by the nutritional information need with a mean score of 1.76 for the experimental group and 1.86 mean score for the control group. The management information needs had least mean sore for both experimental and control group viz 1.44 and 1.41 respectively. Respondents had more need in area of nutrition as they think only nutrition information to be sufficient for diabetes management. Management information needs are considered less important by the respondents in managing diabetes in both experimental and control group.

The results were in line with the study of Kalantzi (2015) study on 203 patients to examine the information behaviour of diabetic patients. The study showed that 61.4 % expressed the need for information on diet, 41.96 per cent of patients seek information on diabetic complications and a great majority of the patients (94.6%) interested in information on physician as most important for their information need.

Raposo *et al*. (2021) identified unmet needs of Diabetic respondents as more information and support regarding food and diet (36%), a new solution to monitor blood glucose levels (36%) and increased awareness of T2D to facilitate earlier diagnosis.

Biernatzk *et al*., (2018) identified and analysed information needs of people with diabetes mellitus. Nine main categories of information needs were identified, including 'treatment-process', 'course of disease', 'abnormalities of glucose metabolism' and 'diabetes through the life cycle'. It was concluded that information needs in people with diabetes mellitus, appear to be high, yet poorly investigated.

Execution of SMS

The developed text and voice messages were delivered to mobile numbers of experimental group.

Table 1. Information needs of the respondents in different areas

n1=60, n2=30

Types of information needs	No. of items	Mean Scores	
		Experimental	Control
Clinical	40	1.50	1.48
Nutrition	15	1.76	1.86
Management	21	1.44	1.41

Two text messages and one voice message were sent every day; text messages were sent at 10.00 am and 5.00 pm and voice message at 8.00 pm.

## Perception of the respondents on diabetes after SMS

The perception level of respondents on disseminated messages was measured with a check list on three-point continuum with options strongly agree, agree and disagree for the statements, with a score of 3, 2 and 1 respectively, reflecting the content and respective behaviour domains. The check list was administered to the sample i.e. both experimental and control group to study change in the perceptions.

Table 2 reveals the mean score of the perception of experimental and control group in the areas of clinical, nutrition and management information needs. The mean score for the skill domain in all the three areas of information for the experimental group was highest with value of 7.72 the attitude domain of the experimental group was 7.50 followed by knowledge domain value of 5.03 for the experimental group. It is clear from the Table that control group mean score was considerably less in all three domains compared to experimental group. The total mean score in all the three domains i.e. KAS was high with value of 20.25 compared to control group mean score of 12.99

The mean score difference between experimental and control group for different types of information in KAS domain was found to be highest for nutrition (3.09), followed by (2.80) for clinical and (1.56) for management information needs. The total calculated mean difference was 7.45 between experimental and control. The high mean score in all the areas of information needs in experimental group was due to messages in text and voice format. The control group did not receive any message so their mean score was low. The level of perception in the experimental group was highest for nutrition information probably because of the high mean

score recorded in experimental and control group.

Experimental group has changed level of perception after the messages being send to them in both text and voice format. A hypothesis was thus formulated to study if there was any significant difference between experimental and control group.
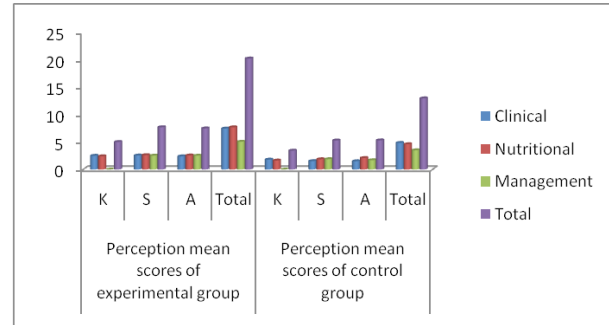
Fig. 1. Perception levels of experimental and control group in KAS domains

Testing of hypothesis

Null hypothesis

There will not be any significant difference between perceptions levels in experimental and control group.

Empirical hypothesis

There will be a significant difference between perception levels in experimental and control group

Groups	Total no of sample	Mean	tcal	t tab
Experimental	60	90.68	10.295*	3.29
Control	30	60.43		

An inference could be drawn from the above Table 4.5.2 that there was a significant difference in perception level between the experimental and the control group as t values were found significant at 0.01 level of probability. Thus, null hypothesis was rejected and empirical hypothesis may be accepted.

Table 2. Perception of the respondents on diabetes after SMS

n1=60.n2=30

Types of Information	Perception mean scores of experimental group				Perception mean scores of control group				Mean Difference
	K	S	A	Total	K	S	A	Total	
Clinical	2.51	2.56	2.40	7.47	1.81	1.53	1.52	4.86	2.80
Nutritional	2.42	2.62	2.57	7.71	1.64	1.88	2.10	4.62	3.09
Management	-	2.54	2.53	5.07	-	1.89	1.70	3.51	1.56
Total	5.03	7.72	7.50	20.25	3.45	5.30	5.32	12.99	7.45

The study is in line with Siddiqui *et al.* (2020) who discovered that Mobile SMS are an effective tool to deliver behavior and lifestyle modification advice and support for better management of diabetes and its prevention in people who are at high risk. Education intervention through SMS is found to be an important variable which enhances the knowledge and beliefs of the subject.

Bruis *et al.* (2013) indicated that SMS have positive perception and bring positive behaviour change.

CONCLUSION

Diabetes leads to mortality and morbidity and it has reached to epidemic state. Diabetes has immense burden. The complexity of the disease can be reduced with constant monitoring and care. SMS has significant role in changing the perception of people with diabetes. Due to its relative advantage over other media, this study used SMS as a new medium to satisfy information needs. Individualized SMS messages are sent to the participants. They feel as though the message was written just for them, and personalized messages give them a sense of belonging. The respondents perceive that particular messages are relevant to my needs and are important. In addition, this mobile SMS has been utilized due to the growing popularity of mobile phones.

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