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Effect of Nutrition Education on Knowledge of Dietary Management of Diabetes and Hypertension among Nursing Students

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ABSTRACT

Introduction: Among the chronic diseases, diabetes and hypertension are two major public health concerns in a developing country like Pakistan faced with double burden of malnutrition. Both are strongly associated with healthy eating knowledge and are effectively controlled by dietary modification. **Objective:** The objective of this research was to assess the effect of nutrition education on knowledge of dietary management of diabetes and hypertension among nursing students. **Methodology**: A pretest and posttest quasi-experimental research design was used to provide nutrition education to 25 purposefully selected female first year nursing students aged 18-22 years. A structured questionnaire was developed by the researcher, including questions on demography and nutrition knowledge. After the pretest, interventions were administered in 3 sessions. The interventions included power point presentation and pamphlets developed through review of literature. Same questionnaire was used for posttest. Descriptive statistics were calculated for continuous variables. T-test was applied and a p-value < 0.05 was taken as significant. SPSS version 17 was used to analyze data. **Results**: Results showed that nutrition knowledge was adequate even at the baseline but after the intervention the scores improved markedly. Mean score at pretest was 11.160 (SD 2.44) which increased to 18.560 (SD 1.325) at the posttest. A comparison of mean scores yielded a statistically significant difference (t= -17.774, p=0.001, CI= -8.259- -6.540). **Conclusion**: It was concluded that nutrition education was effective to increase knowledge about dietary management of diabetes and hypertension among nursing students. Similar exercise can be employed to educate other healthcare providers.

Key words: diabetes, hypertension, dietary management, nursing students, nutrition education.

INTRODUCTION

Worldwide there is a continuous increase in the disease burden from cardiovascular disease, diabetes and related conditions of high blood pressure, high cholesterol, and excessive bodyweight. Once considered diseases of developed countries or of the elites in developing countries, they are now recognized as global problems[1]. Among the chronic diseases, diabetes and hypertension are two major public health concerns in a developing country like Pakistan faced with double burden of malnutrition. In Pakistan, cardiovascular diseases (heart disease and stroke) account for 34 percent of all deaths. Globally, Pakistan ranks sixth in the number of persons with type 2 diabetes[2]. One of the major causes of this high prevalence is the nutrition transition. Foods rich in vitamins, minerals, and micronutrients like fruits, vegetables, nuts and whole grains are being replaced by foods heavy in added or refined sugar, saturated fats, and salt. With economic growth people have adopted Western-style diet (fast food, soft drinks, processed foods, etc.), reduced physical activity, smoking, stress, rising inequality; all factors known to contribute to obesity and early onset of chronic diseases[3]. As diet and lifestyle play

a major role in onset of these diseases, treatment and prevention through dietary modification is also promising.

Regretfully in Pakistan, the patients have no facilities of counseling about dietary modifications in the hospitals. Healthcare providers like medical staff and dietitians can play a vital role in educating patients regarding dietary and lifestyle modification. Nurses too are in constant contact with the hospitalized patient and their relatives and can help a lot in counseling the patient if properly educated regarding dietary modification according to disease and physiological needs and state. The objective of this research was to effect of nutrition education on knowledge of dietary management of diabetes and hypertension among nursing students.

METHODS

Study design & Settings

The study was a quasi-experimental research design with a pretest and posttest without control group. The study setting was Nursing School of Services Institute of Medical Sciences (SIMS) Lahore. The institute was selected on the basis of convenience. The study was conducted in May 2016.

Sample

25 first year nursing students (aged 18-22 years) who volunteered to participate in the study were conveniently selected.

Instrument

A structured questionnaire used as pretest and posttest was developed by the researcher. It included demographic profile and 20 multiple choice questions on nutrition knowledge regarding hypertension and diabetes. The questionnaire was pretested for comprehension and reviewed by experts in field for content validity.

Intervention

Main interventions were two lectures given with the help of power point presentation. The content included brief introduction of disease, causes, symptoms, risk factors, role of food in prevention of disease, and dietary management of diabetes and hypertension. The students were asked to prepare visual aids and flow diagrams to elaborate on the topic as an activity. At the end they were given educational brochures summarizing the key concepts as a take home message.

Data collection procedure

After taking informed consent the students were asked to fill the structured pretest questionnaire. After the pretest, interventions were administered in 2 sessions. Two lectures were given on alternate days and at the end of the week students were assessed by administering the same questionnaire for improvement in knowledge regarding disease and related diet modification.

Ethical approval

Written approval was taken from the Principal of Nursing School of Services Institute of Medical Sciences (SIMS) Lahore. Written informed consent was obtained from participants and they were assured of anonymity and confidentiality of data. Purpose of the study was explained to them.

Data analysis

The data was analyzed by using Statistical Package of Social Sciences (SPSS) version 17. For the comparison of pre-test and post-test paired sample t-test was applied and a p-value < 0.05 was taken as significant.

Table 1: Relationship between Scores of Pretest and Posttest.

	Mean	S.D	R	P-value
Pre-test	11.1600	2.444	0.524	.007
Post-test	18.5600	1.325		

RESULTS

All of the participants were females aged 18-22 years. They were nursing students of first year. Their previous academic qualification was Intermediate (pre-medical group). Table 1 shows that pretest scores show a statistically significant strong positive correlation with posttest scores which means that participants who scored better in pretest scored better in posttest. A comparison of

means revealed that posttest scores were statistically different from pretest (t= -17.774, P=0.001) (Table 2).

Table 2: Comparison of Means of Scores of Pretest and Posttest.

	t	p-value	Lower	Upper
Pretest Post-test	-17.774	0.001	-8.25927	-6.54073

DISCUSSION

Nutrition is a recognized determinant of some chronic diseases. Yet most of the healthcare providers are not trained in nutrition to provide lifestyle and dietary counseling so disease progression could be intervened and alleviated. There is a compelling need to develop nutrition knowledge of health care professionals and to establish curriculum in the education, training, and continuing education for health care professionals[4]. So keeping this in mind the current study was designed to improve the nutrition knowledge of nursing students and to assess the effect of nutrition education on disease related knowledge among nursing students.

Nutrition education appears to be more effective when provided through multiple methods and sites, such as schools, workplaces, mass media, and health centers[1]. Therefore, the current study was carried out at the educational institute of the participants.

Increased nutritional knowledge seems to improve the nutritional practice. A cross sectional survey of 4512 doctors and nurses concluded that self-reported nutritional knowledge was inadequate among Scandinavian doctors and nurses[5]. The baseline nutrition knowledge of the nursing students of SIMS was adequate as identified by the pretest, yet there was margin for improvement. At the posttest, after intervention it was observed that there was a marked increase in nutrition knowledge of the participants. Computer-assisted diabetes nutrition education proved to be an efficient and effective technique for teaching basic nutrition concepts to medical students[6]. Nutrition training from a dietitian improves nutrition knowledge of Practicing Nurses. It also improves their confidence and is recommended to support their role in providing accurate and consistent dietary advice to patients[7]. In the current study, interactive, well designed and presented nutrition education sessions were conducted which helped in keeping the participants involved and improved their retention as evident by posttest results. The nursing students provided qualitative feedback that after the nutrition education they felt more confident in giving dietary advice. Early nutrition intervention can decrease complication, length of hospital stay, readmission rates, mortality, and cost of care[8]. Previous studies have also shown that collaborative and inter disciplinary programs with nurses and nursing students can be a valuable resource in education patients and improving health outcomes in hospitalized patients[9,10]. Thus it is anticipated that the participants will contribute to the improvement of the health outcomes in hospitalized patients in Pakistan.

CONCLUSION

It was concluded that nutrition education was effective to increase knowledge about dietary management of diabetes and hypertension among nursing students. Well presented and interactive method of teaching was found to enhance learning profoundly. Similarly other healthcare providers can be taught through continued education and workshops at their workplace so current workforce is empowered to improve the health of the nation.

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