Research Article

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Impact of Music on Type 2 Diabetes

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Abstract

The present study is undertaken to see the effect of music on blood sugar levels among type two diabetic patients. 100 diabetic patients aged 60-75 years were randomly selected from diabetic clinics. They are divided into two groups of 50 each (25 females and 25 males) one group served as control and another experimental. Both groups received regular conventional diet, medical protocol, and exercise/yoga. The experimental group was exposed daily to music of their choice approved by a music therapist for 40 minutes in addition. The study was undertaken for 3 months. Fasting blood glucose levels were taken in the beginning and after every month. The initial average blood sugar in the control group is 160 mg/dl and in the experimental group is 158mg/dl. Grouping them into various levels showed that initially none of the patients in both groups had normal blood sugar levels. In the experimental group those in the categories of 101-120 mg/dl are 16%, 121-140 mg/dl are 28%, 141-160 mg/dl are16% and those in >160 mg/dl are 48c% after 3 months 48% patients slided over to the normal category, in the other levels are 28%, 18%, 4% and 2% respectively. In the control group the corresponding levels are 4% in the normal category and 4%, 28%, 60%, and 4% respectively. The results indicated that there is consistent decrease in the fasting levels in the experimental group indicating that listening to music of their choice probably reduced the stress levels and thereby the blood sugar levels.

Keywords: Music therapist, Fasting blood sugar levels, Yoga, Conventional diet, Exercise, Medical protocol.

Introduction

Diabetes incidence is increasing tremendously and is said to become a potential epidemic. In India Type 2 diabetes is reported to have doubled in the past decade [1]. The changing lifestyles, stress, strain and anxiety are considered the most influencing factors which may cause diabetes [2]. Studies have indicated that one of the various ways of relieving stress are - taking regular exercise or joining sports team, going on a holiday, listening to music, practicing yoga and breathing exercises, or meditation [3]. Listening to music was shown to lower anxiety more than meditation lowers the systolic blood pressure among cardiac patients [4,5].

Music therapy or listening to music of their choice has proved to increase the immunoglobulin A, which lowers the production of cortisol- the hormone that causes stress, reduces anxiety in cancer patients [6,7]. Dr. Harell advised that listening to music on daily basis for a few minutes makes one happier and healthier. Most of the studies were done on people abroad and studies on Indian population are scanty. The present study is undertaken to see if listening to music among the Indian geriatric population has any effect on blood sugar levels among type 2 diabetic patients.

Methods and Materials

This is a pilot study conducted to study if music has any influence on blood sugar levels. Patients attending diabetic clinics with type 2 diabetes in the age group of 60-75 years were identified (Table 1). Among them 100 Patients who are willing to follow a suggested protocol were randomly selected. They are divided into 2 groups one an experimental and another control group. Both groups were exposed to regular conventional diet, medical protocol, and exercise (as suggested by a yoga expert), while the experimental group is given the same protocol, in addition were introduced to music. As the patients are telugu-speaking, only Telugu songs of their liking were selected, among them 6 songs approved by music therapist were given to patients and were asked to listen for 30-40 minutes each day.

Age Range	Experimental Group		Control Group	
	Men	Women	Men	Women
60-65	10	9	12	10
66-70	6	11	5	8
71-75	9	5	8	7
	25	25	25	25

Table 1: Age Wise Distribution of Diabetic Patients.

Results

Percentage of patients in different levels of fasting blood sugar are presented in Table 2. No significant differences are observed between males and females, therefore the data is clubbed. Average initial fasting blood sugar level in the experimental group is 158 mg/dl while in the control it is 160 mg/dl.

Fasting blood Sugar Ranges	Initial readings		After 60 days		After 60 days		After 90 days	
mg/dl	E*	C**	E	C	E	C	E	C
Average	158	160	154	156	144	156	125	140
<100	0	8 (4)	10 (20)	8 (4)	32 (16)	6 (3)	48 (24)	4 (2)
100-121	16 (8)	28 (14)	20 (10)	32 (16)	22 (11)	28 (14	28 (14)	28 (14)
121-140	28 (14)	44 (22)	28 (14)	40 (20)	26 (13)	42 (21)	18 (9)	60 (30)
141-160	16 (18)	12 (6)	16 (8)	12 (6)	14 (7)	14 (7)	4 (2)	4 (2)
>161	40 (20)	8 (4)	26 (13)	8 (4)	6 (3)	10 (5)	2 (1)	4 (2)
	100 (50)	100 (50)	100 (50)	100 (50)	100 (50)	100 (50)	100 (50)	100 (50)

Table 2: Percentage Of Patients in Different Levels of Fasting Blood Sugar Levels Before and After Exposure to Music; (Figures in parenthesis are actual numbers); *E: Experimental group; **C: Control group.

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