

EFFECTS OF STRUCTURED AND UNSTRUCTURED EDUCATION ON THE ELEMENTS OF THE METABOLIC SYNDROME IN HISPANIC ADULTS¹

HORACIO PALACIOS² and IRMA A. LARA²

²*Canseco School of Nursing Texas A&M International University, 5201 University
Boulevard, Laredo, Texas 78041-1900, USA*

Abstract

The primary focus of this research was to investigate the effects of structured and unstructured education on the elements of the metabolic syndrome in the Hispanic adult. Two groups of subjects have been conveniently chosen. One group received instruction by attending carefully planned classes which addressed diet, exercise, stress managements, depression etc. The other group received unstructured instruction each time they visited their private physician's office as part of the 15 minute interval with focus on diet and physical activity. Comparison for the two different groups was performed for the effect on the elements of the metabolic syndrome, ie. weight, B/P, BMI, FBS, Cholesterol, HDL, LDL, and Triglycerides.

RESEARCH PROBLEM

INTRODUCTION

During the past several years, recognition and treatment of the metabolic syndrome has become a major focus of health care professionals interested in preventing cardiovascular disease. The metabolic syndrome—also termed the insulin resistance syndrome, the deadly quartet, the plurimetabolic syndrome, or “syndrome X”—is not a single disease state but a cluster of abnormalities that includes insulin resistance, atherogenic dyslipidemia, hypertension, obesity, and effects in coagulation, inflammation, and fibrinolysis. (Ginsberg, 2004)

PREVALENCE

In the new millennium, the metabolic syndrome is likely to be established as “one of the most prevalent diseases of mankind and one of the most costly in its contributions to morbidity and premature mortality”. (Kutchman, 2004) The Third National Health and Nutrition Examination Survey (NHANES III) showed that approximately 22% of US adults have the metabolic syndrome (Ford, 2002 cited by Kutchman, 2004). By 2010, 50-75 million US adults will have this syndrome, and worldwide prevalence is expected to be more than 500,000,000 (Ford, 2002, Ferrannini, 1991 cited in Kutchmann, 2004).

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Minority groups and women are disproportionately affected. The prevalence among Mexican American women is 25% higher than it is among Mexican American men. The Mexican American population has the highest age-adjusted prevalence—nearly 32% (Whyte, 2005). And the prevalence increases to about 43% among those older than 60 (Daniels, 2006).

PURPOSE

The primary purpose of this pilot study was to explore the relationship of structured and unstructured educational programs on the elements of the metabolic syndrome in Hispanic adults.

RESEARCH QUESTION

The following research question was the guide for the study.

What is the effect of structured and unstructured education on the elements of the metabolic syndrome in the Hispanic adult?

SIGNIFICANCE TO LAREDO

The Texas border area is characterized by the presence of many colonias, which are unincorporated settlements on either side of the border distinguished by extreme poverty, pollution, and deprivation (Brown, 2002). This poses a major challenge for health care professionals who make their focus the prevention of disease rather than its alleviation or cure. A large percentage of the population is uninsured and thus unable to practice preventive health. Instead, this population seeks medical care and attention once symptoms which keep them from working occur. Unfortunately, the metabolic syndrome may not manifest symptoms which can interfere with an individual's ability to perform activities of daily living thus leading to premature death or disability when the disease process becomes severe enough to cause symptoms.

METHODOLOGY

Design

Effectiveness of the intervention was examined by use of a descriptive design and descriptive statistics. The mean, standard error and deviation were performed with a probability of error of .05.

Setting

The setting for the research was Laredo, TX which is a border city along the Texas-Mexico border. The sample was obtained from a private physician's practice as well as a community health center which serves the tri-county areas of Webb, Zapata, and Jim Hogg.

Subject Selection

The sample selection was one of convenience. The participants from the private physician’s practice were those who met the criterion of having the metabolic syndrome as a medical diagnosis. The age range of this sample was between 22 and 84. The sample size was 11. There were 7 females and 4 males.

The sample from the community health center were those with a diagnosis of metabolic syndrome and voluntarily participated in the ten module structured education which the medical provider recommended. Each module consisted of one hundred and fifty minutes of instruction. The sample size was 11. The age range was between 47 and 66. There were 10 females and one male in this group.

Procedures

Data from the private physician’s practice was collected over a six week period while data from the community health center was collected before and after the subject participated in the ten module structured educational intervention. The structured education covered such topics as diet management, exercise, depression, etc. and was conducted by nurse trained and supervised “promotoras” or promoters. Promoters are lay individuals who reside in the same community as the subjects who are trained to facilitate self-management discussions and education.

Syndrome Data	Mean	Std. Error	Std. Deviation	Confidence Level (95.00%)
Weight				
B/P (lower)				
B/P (higher)				
BMI				
FBS				
Chol				
HDL				
LDL				
Trigl				

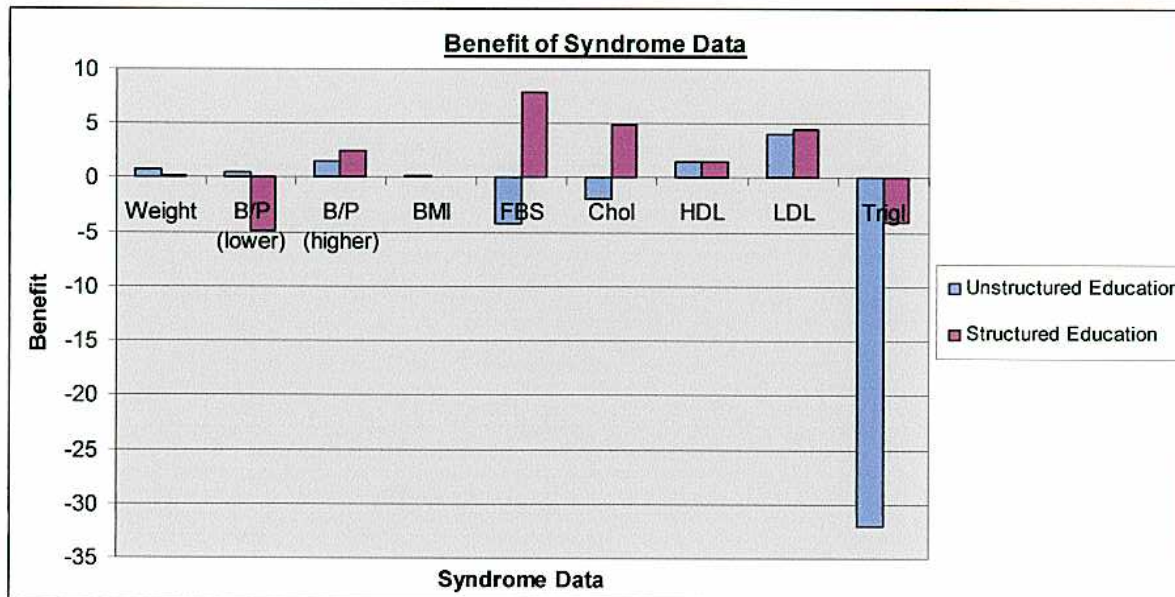
Table 1: Descriptive Statistics for Unstructured Education

Table 2 Shows whether the Elements of the Metabolic Syndrome Increased, Decreased or remained Unchanged over the observation period.

Syndrome Data	Changes: Unstructured Education	Changes: Structured Education	Increased, Decreased or Unchanged?	Comments: Structured Education
Weight	0.82	0.18	↓, Decreased	- Improved
B/P (lower)	0.55	-4.9	↓, Decreased	No Change
B/P (higher)	1.5	2.5	↑, Increased	Improved
BMI	0.22	0.1	↓, Decreased	Decreased
FBS	-4.2	7.9	↑, Increased	+Decreased
Chol	-1.9	4.82	↑, Increased	+Decreased
HDL	1.5	1.5	→, Unchanged	=

LDL	4.1	4.5	↑, Increased	Decreased
Trigl	-32	-4.1	↑, Increased	Decreased

Table 2: Comparison of Average Metabolic Syndrome Data Changes



Results

Conclusions and Recommendations

The study demonstrated a decrease in the weight, diastolic blood pressure, fasting blood sugar, total cholesterol, LDL and triglycerides of subjects who participated in the structured education program. The changes noted in the fasting blood glucose, cholesterol, and triglycerides were quite significant when compared to the unstructured group.

The unstructured education group had weight loss as well but the diastolic blood pressure increased as did the fasting blood sugar, cholesterol, and triglycerides. The HDL was unaffected or remained constant. A comparison of any type could not be carried for abdominal girth as the required data was not available for the subjects in the structured education group. The weight loss found in this study is in itself a very positive finding as health risks of obesity diminish with weight loss. A study of 43,457 overweight, nonsmoking, white women between the ages of 41 and 64 found that, among women with obesity-related conditions, any amount of weight loss was associated with a 20% reduction in all-cause death (Williamson, 1995 cited in Daniels, 2006).

The literature supports two general approaches to the treatment of the metabolic syndrome. The first approach, has the greater potential for management of the syndrome but is difficult for many patients to implement. This approach involves modification of the root causes-overweight, and physical inactivity. Weight loss and exercise both lower

insulin resistance and mitigates the metabolic risk factors (atherogenic dyslipidemia, hypertension, insulin resistance, and the pro-thrombotic and pro-inflammatory state). The second approach directly treats the metabolic risk factors with pharmacologic agents (Roth and Laurent-Bopp, 2004).

In this study, the variables of age, gender, prescribed drug regimen, and disease management knowledge were not assessed or controlled thus resulting in major weaknesses. The sample size was extremely small thus generalization to the Hispanic population cannot be made.

Recommendation is made for future studies to address specifically those educational endeavors which affect the most dramatic and impacting health behaviors such weight loss, increased activity, smoking cessation, and reduction of the portions of meals consumed as these will have the greatest impact on the morbidity and mortality rate in the Hispanic population.

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