

Can the Health Beliefs Predicts High School Students' Behavioral Intention to Adopt Heart-Health-Prevention Behavior?

AFNAN HADI KHUDAIR¹, MOHAMMED BAQER HABEEB²

¹Academic Nurse, MSc, Department of Community Health Nursing, College of Nursing, University of Baghdad, Baghdad, Iraq.

²Instructor, PhD, Department of Community Health Nursing, College of Nursing, University of Baghdad, Baghdad, Iraq.

Correspondence to: Afnan Hadi Khudair

ABSTRACT

Objective(s): This study aimed mainly to enhance high school female students' heart-health-preventive behaviors.

Methodology: Part of the study was an experimental randomized controlled trial used to guide this study. The study was carried out at Fatima Al-Zahraa High School for females in Al-Diwaniyah City. The study included a simple random sample of 142 high school female students (72 students in each of the study and control groups). The study instrument consists of subjects' sociodemographic characteristics. It includes the Expanded Health Belief Model Scales for Heart-Health Preventive Behaviors (Perceived Susceptibility to Develop Heart Disease Scale, Perceived Severity of Heart Disease Scale, Perceived Barriers to Adopt Heart-Health Preventive Behaviors Scale, Perceived Benefits of Adopting Heart-Health Preventive Behaviors Scale, Self-Efficacy of Adopting Heart-Health Preventive Behaviors Scale, Health Motivation for Adopting Heart-Health Preventive Behaviors Scale, Subjective Norms for Adopting Heart-Health Preventive Behaviors Scale, Cues-to-Action Related to Adopting Heart-Health Preventive Behaviors Scale, and Behavioral Intention to Adopt Heart-Health Preventive Behaviors Scale. Data were analyzed using the statistical package for social science (SPSS), version 26. The statistical measures of frequency, percent, mean, standard deviation, Repeated Measures ANCOVA, linear regression, One-way analysis of variance (ANOVA), and independent-sample t-test will be used.

Results of the study: The study results displayed that the administered Expanded Health Belief Model Scales for Heart-Health Preventive Behaviors-based intervention noticeably enhanced students' Perceived Susceptibility to Develop Heart Disease, Perceived Severity of Heart Disease, Perceived Barriers to Adopt Heart-Health Preventive Behaviors, Perceived Benefits of Adopting Heart-Health Preventive Behaviors, Self-Efficacy of Adopting Heart-Health Preventive Behaviors, Health Motivation for Adopting Heart-Health Preventive Behaviors, Subjective Norms for Adopting Heart-Health Preventive Behaviors, Cues-to-Action Related to Adopting Heart-Health Preventive Behaviors, and Behavioral Intention to Adopt Heart-Health Preventive Behaviors.

Conclusion: The researcher concluded that the greater the Subjective Norms for adopting heart-health-preventive behaviors, the better the Behavioral Intention of adopting heart-health-preventive behaviors. The greater the Ques-To-Action for adopting heart-health-preventive behaviors, the better the Behavioral Intention of adopting heart-health-preventive behaviors.

Keywords: Health Beliefs, High School Students, Behavioral Intention, Heart-Health-Prevention Behavior.

INTRODUCTION

Cardiovascular disease (CVD) is a set of heart and blood vessel problems. Cardiovascular illnesses include coronary heart disease, cerebrovascular disease, peripheral arterial disease, and rheumatic heart disease¹. According to the World Health Organization's Third Report, 12 million people die each year from CVD, and it is predicted that by 2025, cardiovascular mortality would have surpassed that of every other disease group, includes infection, cancer, and trauma².

In the United States, cardiovascular disease remains the major cause of disability and mortality in both men and women³. Cardiovascular disease is the world's biggest cause of mortality⁴. In 2019, an estimated 17.9 million individuals died from CVD, accounting for 32 percent of all global fatalities. Heart attacks and stroke accounted for 85 percent of these deaths⁵. Cardiovascular disease is becoming more common in emerging nations, and it is posing a growing health danger across the Eastern Mediterranean and Middle East⁶.

Cardiovascular disease is thought to be the main cause of mortality and disability-adjusted life years worldwide⁷. Cardiovascular disease will kill more than 22.2 million individuals per year by 2030. Low and middle-income countries (LMICs) currently account for 75% of all CVD fatalities, resulting in a 7% drop in gross domestic product (GDP) in these nations⁸.

Controllable and uncontrolled risk factors for CVD are divided into two groups. Inheritance, gender, and age are among the uncontrolled elements. High blood cholesterol, obesity, an unhealthy diet, high blood pressure, high blood sugar, smoking, nutritional misunderstandings, and a lack of physical exercise are just a few of the preventable health hazards⁹.

Diabetes mellitus (DM), obesity, hypertension, and smoking are all common in the Middle East. Obesity and hypertension were more prevalent in women, but smoking was more prevalent in males. According to these findings, cardiovascular disease will be a serious health issue throughout the Middle East¹⁰.

Iran is classified as a middle-income country by the World Bank¹¹. According to earlier assessments from the Global Burden of Illnesses (GBD) in 2010 and 2015, cardiovascular disease was the main cause of mortality and disability-adjusted life years (DALYs) in Iran, accounting for 46 percent of all deaths and 20-23 percent of the burden of diseases¹².

Cardiovascular disease affects 5.8% of persons over the age of 18 in Syria, one of the Eastern Mediterranean Region's (EMR low-middle)'s income countries (population 23,000,000) and is responsible for nearly half of overall mortality (4.8 percent for heart disease and 1.0 percent for stroke)¹³.

METHODOLOGY

This study was guided by an experimental randomized controlled trial. The most conclusive technique to prove causation is to use experimental designs. Researchers use these designs because they ensure a high level of internal validity because random assignment creates very similar experimental and control groups¹⁴.

The study was carried out at Fatima Al-Zahraa High School for females in Al-Diwaniyah City.

The study included a partial simple random sample of high school female students who agreed to participate in this study. The study subjects were recruited from three grades in this school which Fourth Grade, Fifth Grade, Sixth Grade. Subjects were randomly assigned into both study and control groups; 72 students for the study group and 72 students for the control group. The simple random sampling involved having the lists of students' names in Fatima Al-Zahraa High School for females generated on Microsoft Office Word software. The names of students in each grade were cut in identical pieces of paper, in the same color of paper, and folded in the same way. The names of students of each grade were put in a separate container. One of the student researcher's colleagues started stirring well the pieces of paper and drawing one piece alternatively. The first piece drawn would be in the study group and the second one would in the control

group till obtaining the required sample size for each grade for each of the study and control groups. The final sample size is 144.

After receiving the approval of the College of Nursing, University of Baghdad for the study, the student researcher discussed study details with officials at the selected high school. The general purpose of the study was explained to the participants, as well as how to complete the questionnaire, to ensure that they understand that participation is optional and that they can withdraw at any time they wish to. The student researcher assured participants that the confidentiality of their data will be safeguarded and securely maintained during and following study participation. The student researcher further assured study participants that their identities will remain anonymous in the presentation, reporting, and/or any eventual publication of the study.

RESULTS OF THE STUDY

The values of the Perceived Susceptibility of developing cardiovascular disease for the study group noticeably increase by time compared to the control group (Pretest = 9.70 vs. 12.59, Posttest I = 16.56 vs. 9.50, Posttest II = 18.23 vs. 13.08) respectively. Higher score means greater Perceived Susceptibility of developing cardiovascular disease.

Table 1: Descriptive Statistics for the Values of the Perceived Susceptibility of developing cardiovascular disease over Time

Perceived Susceptibility	Mean	Std. Deviation	N
Study Pretest	9.70	3.593	72
Study Posttest I	16.56	3.174	72
Study Posttest II	18.23	3.295	72
Control Pretest	12.59	3.872	72
Control Posttest I	9.50	3.580	72
Control Posttest II	13.08	3.695	72

Table 3: Multivariate Tests of the Within-subjects for the Perceived Susceptibility of developing cardiovascular disease

Multivariate Tests ^a							
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Per Susc (Study)	Pillai's Trace	.757	109.248 ^b	2.000	70.000	.000	.757
	Wilks' Lambda	.243	109.248 ^b	2.000	70.000	.000	.757
	Hotelling's Trace	3.121	109.248 ^b	2.000	70.000	.000	.757
	Roy's Largest Root	3.121	109.248 ^b	2.000	70.000	.000	.757
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Per Susc (Control)	Pillai's Trace	.421	25.448 ^b	2.000	70.000	.000	.421
	Wilks' Lambda	.579	25.448 ^b	2.000	70.000	.000	.421
	Hotelling's Trace	.727	25.448 ^b	2.000	70.000	.000	.421
	Roy's Largest Root	.727	25.448 ^b	2.000	70.000	.000	.421

a. Design: Intercept Within Subjects Design: Perceived Susceptibility of developing cardiovascular disease

b. Exact statistic

Per Susc = Perceived Susceptibility

DISCUSSION

The values of the Perceived Susceptibility of developing cardiovascular disease for the study group noticeably increase by time with significant difference in these values. The omnibus effect (measure of association) for this analysis was 655, which indicates that approximately 65% of the total variance in the Perceived Susceptibility of developing cardiovascular disease values is accounted for by the variance in the administered intervention. The pairwise comparison demonstrated that there were statistically significant differences in these value over time.

These findings reflect the positive effect of the administered Expanded Health Belief Model-based intervention in making invariant, consistent change in the Perceived Susceptibility of developing cardiovascular disease. This finding is consistent with that obtained by Al-Tamimi and Bawazir¹⁵ who stated that there was a statistically significant difference in Perceived Susceptibility between subjects with personal risk factors and those who do not, with those who identify themselves as overweight or obese also believing themselves to be more susceptible to cardiovascular disease.

Subjects who were physically inactive or smokers. Also, Puspitosari¹⁶ concluded that, there was a statistically significant positive link between the Perceived Susceptibility and a high level of physical activity. Ghaffari¹⁷ and Iranagh stated that the Perceived Susceptibility had a positive influence on dietary behavior. Ghanbarnejad¹⁸ revealed that Perceived Susceptibility had a significant influence on smoking cigarettes.

The values of the Perceived Severity of cardiovascular disease for the study group noticeably increase by time with significant difference in these values. The omnibus effect (measure of association) for this analysis was .574, which indicates that approximately 57% of the total variance in the Perceived Severity of cardiovascular disease values is accounted for by the variance in the administered intervention. The pairwise comparison demonstrated that there were statistically significant differences in these value over time.

These findings reflect the positive effect of the administered Expanded Health Belief Model-based intervention in making invariant, consistent change in the Perceived Severity of cardiovascular disease. This finding is consistent with that reported by Jorvand¹⁹, and Almutari²⁰ who demonstrated that the Perceived Severity emerged as a strong motivator of physical exercise. Malverdy²¹ who stated that Perceived Severity had a weak but significant relationship with the Stage of Change of nutrition practices. Ghanbarnejad²² who found that the Perceived Severity had a significant influence on cigarette smoking after controlling for other factors (such as age, parents' education, and losing one of the parents). Also, Kaufman¹⁸ concluded that those who reported a higher Perceived Severity of smoking-related diseases had a higher likelihood of quitting. Gallo¹⁹, Wang and Li²⁰, and Rizer²¹ revealed that the perceived stress was positively connected to the Perceived Severity of stress-related disorders.

On the other hand, this finding is inconsistent with that obtained by Hosseini²² and Karimi who found no significant link between the Perceived Severity and physical activity behavior. Huang²⁴ stated that the nutrition habit score was found to be inversely associated to the risk of cardiovascular disease.

CONCLUSION

The administered Expanded Health Belief Model-based intervention noticeably, positively changed students' Perceived Susceptibility of developing cardiovascular disease, the Perceived Severity of cardiovascular disease, the Perceived Benefits of adopting heart-health preventive behaviors, the Perceived Barriers to adopt heart-health preventive behaviors, the Self-Efficacy of adopting heart-health preventive behaviors, the Ques-To-Action for adopting heart-health preventive behaviors, the Health Motivation for adopting heart-health preventive behaviors, the Subjective Norms for adopting heart-health preventive behaviors, and the Behavioral Intention for adopting heart-health preventive behaviors.

Recommendations: There is a need to replicate this study on as much subpopulation across Iraq as possible. There is a need to

incorporate materials into the curricula of different levels of education that emphasize the severity of cardiovascular disease and the vital role of heart-health preventive behaviors.

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