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Application of the Health Belief Model to Promote Preventive Behaviors Against Iron-Deficiency Anemia Among Female High School Students in Fereydan: A Quasi-Experimental Study

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Background

Iron deficiency is the most common nutritional problem worldwide and a leading cause of anemia, particularly among adolescent girls. Adolescence is a critical period for establishing lifelong health behaviors, so effective educational strategies are needed to prevent iron-deficiency anemia in this group. This study aimed to evaluate an educational intervention based on the Health Belief Model (HBM) to promote preventive behaviors against iron-deficiency anemia among female students.

Methods

This quasi-experimental study was conducted on 128 second-grade female high school students in Fereydan, randomly allocated to an intervention group and a control group. Data were collected using a questionnaire on demographic characteristics, HBM constructs, and health performance (validity and reliability confirmed). The post-test was conducted three months after the intervention. Data were analyzed with descriptive statistics, paired t-test, and independent t-test in SPSS version 22.

Findings

Before the intervention, there were no significant differences between the intervention and control groups in the mean scores of HBM constructs or health performance ($p > 0.05$).

Three months after the intervention, the mean scores of perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, cues to action, and health performance differed significantly between the two groups ($p < 0.001$).

Variable	Baseline (between-group comparison)	3 months after intervention (between-group comparison)
Perceived susceptibility	$p > 0.05$ (not significant)	**$p < 0.001$ (significant)**
Perceived severity	$p > 0.05$ (not significant)	**$p < 0.001$ (significant)**
Perceived benefits	$p > 0.05$ (not significant)	**$p < 0.001$ (significant)**
Perceived barriers	$p > 0.05$ (not significant)	**$p < 0.001$ (significant)**
Self-efficacy	$p > 0.05$ (not significant)	**$p < 0.001$ (significant)**
Cues to action	$p > 0.05$ (not significant)	**$p < 0.001$ (significant)**
Health performance	$p > 0.05$ (not significant)	**$p < 0.001$ (significant)**

Keywords: Educational Intervention, Iron-Deficiency Anemia, Health Belief Model, Female Students, Preventive Behaviors, Health Education

Conclusion

HBM-based education was effective in promoting preventive behaviors against iron-deficiency anemia among female students. This model can serve as a framework for designing and implementing educational interventions to prevent iron-deficiency anemia.

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