The Effect of the Health Belief Model-Based Intervention in Primary School 3rd and 4th Grade Students' Behavior on Safety Precautions for Preventing Accidents at School

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Study Protocol and Statistical Analysis Plan

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Inroduction

An accident is defined as an event that ends with an injury or an unexpected event that requires emergency medical attention and results in a syndrome that includes events such as trauma, fracture, poisoning, and burns (Gambarte et al., 2014). Accidents are an important public health problem due to deats, temporary or permanent disability. Injuries are among the leading causes of death and lifelong disability between the ages of 5-14 years (WHO). Children in this age group spend certain hours of the day at school, and children are also very active physically in school. This physical activity can cause accidents and injury to the child. It is reported that 15% of child accidents occur at school (Gambarte et al., 2014). In an epidemiological study examining school accidents between 2012 and 2016 in our country, 7042 school injury records were examined. In this study, it was determined that most of the school injuries were caused by falling (60.1%) and occurred during break time (38.6%), while 13.3% of the injuries were caused by environmental reasons and 86.7% by behavioral reasons (Şengel et al., 2020). In this direction, changing the behaviors that cause injury and improving the behavior towards preventive safety measures can reduce the risk of injury due to accidents. It is identified three levels of impact in injury prevention, each of which may be appropriate for different prevention approaches. These; the internal level at which interventions can target self-efficacy, knowledge, skills and beliefs; the interpersonal level at which the intervention can target social/peer influences and norms, and the community level, which includes interventions involving the environment or settings and policies. The health belief model is among the most widely applied individual-level (internal and interpersonal) behavioral change theories in injury prevention (Orton et al., 2016). The Health Belief Model (Gözüm and Çapık, 2014), developed by Rosenstock in 1966 and later expanded by Becker et al., focuses on individuals' attitudes and beliefs. This model defends that health behavior is determined by an individual's personal beliefs or perceptions about a disease/health condition. In line with this model, a child perceives injury as a problem, takes it seriously, and as a result causes a positive behavioral change to prevent injury. In a study, it was determined that health belief model (HBM)-based school health education to high school students can improve students' health beliefs about injury (Cao et al., 2014). Another study found that an educational intervention based on the Health Belief Model could improve students' practice in preventing school injuries (Farhadi et al., 2014). Studies have shown that a HBM-based intervention can improve injury-related health beliefs and practices in injury prevention. However, sufficient information could not be reached about the effect of HBM-based

intervention on behavior towards security measures in primary school students. In this direction Purpose of this study is to research the impact of the education that has given towards the health belief model, for the behavior of children about precautions against school accidents. This study will provide scientific data support to the school health nurse on how to apply HBM in creating behavior change for safety measures to prevent school accidents.

Hypothesis

Education for school accidents, prepared in line with the components of the Health Belief Model, affects the safety precautionary behavior of students for school accidents.

Primary Outcomes

Behavior of Students for Safety Precautions in School Accidents

Method

Study Design

This research was designed as quasi-experimental. It has a pretest-posttest design with a control group.

Sample

The behavior score averages and standard deviations of the two groups in a previous study (Dilek, 2018) and the effect size were calculated to determine the sample size of the study. Power analysis (significance level 0.05 for type 1 error, effect size 0.50, and power 0.95). (Gpower 3.1 version) was carried out. In the power analysis, the minimum number of participants was 87 in the experimental group and 87 in the control group. In this context, the research will be conducted with 100 participants in each group, taking into account the possibility that non-parametric statistics may need to be used due to the non-normal distribution of the dependent variable, incomplete and erroneous data, and absenteeism. Experimental and control groups will be selected from the branches 3rd and 4th grade. 3 branches will be selected for the experimental group and 3 branches for the control group. Branches will be determined by drawing. In order not to interfere with the education of students during the training, the groups will be designated as class branches.

Inclusion Criteria

Being educated in 3rd and 4th grade

Volunteer to participate in the research

Consent of the student's parent

Speak and understand Turkish

Exclusion Criteria

Being visually and hearing impaired

Using a language other than Turkish

Not willing to participate in the study

Research Groups

Intervention arm

Experimental group will be selected from the branches 3rd and 4th grade. 3 branches will be selected for the experimental group. Branches will be determined by drawing. In order not to interfere with the education of students during the training, the groups will be designated as class branches. Students selected for the experimental group will be trained by the researcher for school accidents prepared in line with the components of the Health Belief Model.The training program will be planned as 30 minutes per week for 4 weeks. Before the training and at the end of the training (at the end of the 4th week), the students will be applied personal information form and a behavior scale for safety precautions in school accidents.

Control Arm

Control group will be selected from the branches 3rd and 4th grade. 3 branches for the control group. Branches will be determined by drawing. In order not to interfere with the education of students during the training, the groups will be designated as class branches. After the training of the experimental group is completed and the final data are obtained, a 40-minute training will be given to the control group about prevention from school accidents. This training was planned so that the control group would not be devoided of the intervention.

Data Collection Tools

The data will be obtained with the personal information form and the behavior scale for safety measures in school accidents.

Personal Information form

In this form prepared by the researchers, there are questions that determine personal characteristics such as age, gender, educational status of parents, school accident status.

The Scale of Behavior of Students towards Safety Measures in School Accidents

This scale, developed by Gür and Yıldız (2009), consists of 4 factors. Factor 1 is Unsafe Behaviors, Factor 2 is Safe Behaviors, Factor 3 is Safe Behaviors Towards Outside, and Factor 4 is Behaviors in the Service Vehicle. The questions are scored in the opposite direction. The scale consists of 40 items and is a 5-point Likert type scale. For each item, it is required to tick one of the options “Always”, “Often”, “Sometimes”, “Rarely”, “Never”.For each question, “Always” receives 5 points, “Often” receives 4 points, “Sometimes” 3 points, “Rarely” 2 points, and “Never” receives 1 point.2nd, 3rd, 4th, 5th, 7th, 10th, 12th, 20th, 21st, 22nd, 26th, 32nd, 34th, 36th, 37th, 38th, 39th. Questions are scored in the opposite direction.The lowest score that can be obtained from the scale is 40, and the highest is 200.The highest score obtained from the scale shows that the student takes the security measures for school accidents at the highest level.

Ethical Considerations

Ethical permission was obtained from the Ethics Committee of Afyonkarahisar Sağlık Bilimleri Üniversitesi (Afyonkarahisar Health Sciences University) (date: 03.June 2022; Number: 2022/340)

Statistical Analysis

In the evaluation of the data, percentage, arithmetic mean, t-test for independent samples and t-test for dependent samples will be used. Significance level will be taken as $p<0.05$.

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