PROTOCOL

Effectiveness of Debriefing After a Short Training on Brief Tobacco Intervention for Nursing Students: A Randomized Clinical Trial

Aim:

The aim of this study was to determine the effectiveness of debriefing after objective evaluation of a brief tobacco intervention (BTI) training in nursing students, and its progression at 3 and 9 months.

Method:

Design

A randomized controlled clinical trial with block randomization was used to evaluate the debriefing intervention versus no debriefing, with five measurements taken over 9 months.

Sample and Setting

The study was conducted with second-year nursing students at the University of Murcia, Spain, during the 2021-2023 academic years. Inclusion criteria were being enrolled in the second-year course "Bases de Enfermería Comunitaria," where BTI training is provided, and agreeing to participate in the study. In the two academic years during which the research was conducted, 300 students were enrolled. The sample size was calculated using Pass 11 (Power Analysis & Sample Size) software for repeated measures ANOVA. For a repeated measures design with 1 between-factor and 1 within-factor, with 2 groups and 65 subjects each (total 130 subjects), each subject was measured 5 times. This design achieves 100% power to test the AB interaction if a Geisser-Greenhouse Corrected F Test is used with a 5% significance level and the actual effect standard deviation is 1.

Developmental Process

Of the 300 eligible students, 145 agreed to participate. Block randomization was used for the random assignment of students to the experimental group (EG) and control group (CG). The unit of randomization was small groups (13-16 students/group), with all enrolled students assigned accordingly. Block randomization was performed using a random number generator, assigning 5 blocks to the experimental group (80 students) and 5 blocks to the control group (65 students).

Both groups (EG and CG) received BTI training in a brief format of 2.5 hours in groups of 13-16 students. The content included 1) general information and epidemiology of smoking, 2) passive smoking, 3) evidence of the effectiveness of smoking cessation interventions, and 4) the WHO's approach to smoking in Primary Care based on the 5 As and 5 Rs model to help patients quit smoking (World Health Organization, 2014). This model outlines the five main steps of the 5 As (Ask, Advise, Assess, Assist, and Arrange) for providing brief interventions in primary care and the 5 Rs (Relevance, Risks, Rewards, Roadblocks, and Repetition) to be addressed for a smoker who is not ready to quit at that moment.

The methodology included a phase of evaluating the students' learning using the Videotape Objective Structured Clinical Examination (VOSCE). Students were shown 3 recorded clinical scenarios (video-problems) with standardized patients in which a nursing professional performs a brief tobacco intervention (BTI) on a patient visiting a primary care clinic, following the 5 As and 5 Rs model. The videos depicted common errors in this type of intervention, and students were required to detect them using the validated BTI-St® assessment tool. The scenarios included the patient was not ready to quit smoking (scenarios 1 and 2) and was ready to quit (scenario 3).

The data collection protocol was similar in both the EG and CG, with five measurements conducted each time after viewing the 3 video-problems and assessing learning through the BTI-St®. At baseline, before BTI training (T0); followed by training in BTI in Primary Care (T1). Subsequently, in the experimental group, an expert instructor conducted a structured debriefing lasting 10-15 minutes for each clinical scenario, whereas no further intervention was provided in the control group. At the end of the first day, all participants viewed the videos and completed the tool again (T2). At three and nine months, students viewed the videos and measurements were taken at T3 and T4, respectively.

The debriefing used had the following characteristics: short (≤ 15 minutes), educator present, educator with debriefing experience, the context was related to health management or decision-making, and the method used was the plus-delta tool, which asks participants to reflect on the simulation event and evaluate their performance by identifying strengths and areas for improvement.

Method of Measurement

To assess the change in learning regarding brief tobacco cessation counseling among nursing students, the Brief Tobacco Intervention BTI-St© tool was used, incorporating the standardized patient videos described earlier. This instrument is based on a criterion-referenced or competency test model, enabling an objective evaluation of students' BTI performance and identifying learning deficiencies. It is presented as an algorithm consisting of 23 dichotomous items organized according to the 5As and 5Rs model and has demonstrated adequate validity and reliability (Ramos-Morcillo et al., 2022). Students must view a recorded clinical scenario and determine whether the brief intervention criteria for smoking cessation are met. Responses are corrected according to the gold standard defined during the scenario validation, with item scores ranging from 0 (incorrect) to 1 (correct). The maximum total score for each scenario ranges from 0 to 1 point if the student answers all items correctly.

Data Analysis

Descriptive analyses were conducted, calculating the mean and standard deviation for quantitative variables, and frequencies and percentages for qualitative variables. To compare the variables studied between the control and experimental groups, the t-Student test and Chi-Square test were used depending on the nature of the comparison variable.

The overall score of each student was calculated for each of the three cases and weighted according to the number of items they had to answer. Thus, the score in each case could range between 0 and 1. A two-factor repeated measures ANOVA was used to analyze the differences in within-subject and between-subject measures. The assumptions of this test include the condition of sphericity; if this assumption was violated, the multivariate approach, which does not require the variance-covariance matrix to be spherical, or the F statistic with modified degrees of freedom using the ε correction factor (Greenhouse-Geisser estimate), was applied (Pardo Merino & San Martín Castellanos, 2011). A significance level of 5% ($p \leq 0.05$) was utilized in the statistical analysis. Data analysis was performed using SPSS® v. 25 (Statistical Package for the Social Sciences).

Ethical Compliance

The study was approved by the Ethics Committee of the University of Murcia (ID: 1968/2018). All procedures were conducted following the ethical guidelines of the

Declaration of Helsinki. The students' participation was voluntary, following an explanation of the study's purpose and ethical assurances. The anonymity of the students was maintained, and the confidentiality of the data obtained was ensured by creating a personal code.