COVER PAGE
Official Title: Digital Board Game-Based Psychological Empowerment Program for Nurses: A Randomized Controlled Trial
NCT Number: Not yet assigned
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STUDY PROTOCOL
1. Background and Rationale
Psychological empowerment has been shown to positively influence nurses' job satisfaction, innovative behaviors, and overall well-being. Digital interventions and gamified approaches may enhance engagement and sustainability of empowerment programs. This study aims to evaluate the effectiveness of a digital board game-based psychological empowerment program on nurses working in a university hospital.
2. Objectives
Primary Objective: To evaluate the effect of the intervention on psychological empowerment levels of nurses.
Secondary Objectives: To assess the effect of the intervention on job satisfaction and innovative behavior.
Exploratory Objective: To evaluate participants' perceptions of the intervention program (Program Evaluation Form).
3. Study Design
Prospective, randomized controlled experimental design with pre-test and post-test assessments.
Parallel assignment: Intervention group vs. Control group.
Randomization: Block randomization method using .
Masking: Single-blind (participants unaware of group allocation).
Study Duration: Approximately 6 weeks of intervention plus 3-month follow-up.
4. Study Setting
The study will be conducted at Afyonkarahisar Health Sciences University Hospital, Turkey, between 2025 and 2026.
5. Participants
Inclusion Criteria
Voluntary participation with signed informed consent.
Mixed shift work (day and night).
No concurrent psychological training or therapy.
No additional employment or programs.
At least 1 year of professional nursing experience.

No physical/mental illness preventing participation.
Bachelor's degree in nursing.
Currently employed as a nurse at the study site.
Access to and ability to use digital devices (PC, mobile phone, etc.).
Exclusion Criteria
Receiving psychological training/therapy during the study period.
Health issues preventing participation.
Not meeting inclusion criteria.
Withdrawal Criteria
Missing ≥2 sessions (<70% attendance).
Voluntary withdrawal.
New health problems preventing participation.
Inability to complete six sessions due to personal reasons.
6. Sample Size and Power Analysis
Universe: 596 nurses employed at the hospital.
Power analysis: G*Power 3.1, effect size d = 1.43, power = 90%, $\alpha = 0.05$.
Required sample size: 24 (12 per group).
With 25% attrition rate, minimum 15 per group required.
Final planned sample: 50 nurses (25 intervention, 25 control).
7. Intervention
Experimental Arm: Digital Board Game-Based Psychological Empowerment Program
6 weeks, 1 session per week, 2 hours each.
Delivered via Zoom.
Components:
Online psychological empowerment training.
Group discussions and experience sharing.
Digital board games (Board Game Arena).
Kahoot quiz (15 questions, rewards for top 3 participants).
Follow-up: Assessments at baseline, immediately post-intervention, 1 month, and 3 months post-intervention.
Control Arm: Standard Practice
No active intervention.
After study completion, control group receives printed booklet of the program content.
Assessments at the same time points as intervention group.
8. Outcome Measures
Primary Outcome
Psychological Empowerment (Spreitzer, 1995; Turkish adaptation Üner & Turan, 2010).
12 items, 7-point Likert (1–7).
Score range: 12–84.
Higher scores = greater empowerment.
Time Frame: From baseline up to 3 months after intervention.
Secondary Outcomes
Job Satisfaction (Brayfield & Rothe, 1951; shortened by Judge et al., 1998; Turkish validation Ba■ol & Çömlekçi, 2020).
5 items, 5-point Likert (1–5).
Score range: 1–5.
Higher scores = higher job satisfaction.
Time Frame: From baseline up to 3 months after intervention.
Innovative Behavior (Scott & Bruce, 1994; Turkish validation Çal■■kan et al., 2019).
6 items, 5-point Likert (1–5).
Score range: 6–30.
Higher scores = greater innovative behavior.
Time Frame: From baseline up to 3 months after intervention.
Other Outcome
Program Evaluation Form (developed by researchers).
Includes 3 structured items and open-ended feedback.
Evaluates satisfaction with program content, duration, and digital games.

Time Frame: At 6 weeks (immediately post-intervention).
9. Data Collection Tools
Demographic Information Form (researcher-developed).
Psychological Empowerment Scale.
Job Satisfaction Scale.
Innovative Behavior Scale.
Program Evaluation Form.
10. Ethical Considerations
Ethics approval obtained from the Afyonkarahisar Health Sciences University Ethics Committee.
Institutional permission obtained.
Participation is voluntary, and participants may withdraw at any time.
Confidentiality and anonymity guaranteed.

STAT■ST■CAL ANALYS■S PLAN
Descriptive statistics: mean ± SD, median (min–max), frequency, percentage.
Group comparisons: Independent samples t-test or one-way ANOVA (parametric assumptions met).
Non-parametric alternatives if assumptions not met.
Correlations: Pearson correlation coefficient.
Outcome analysis: Repeated measures ANOVA to compare within and between groups over time.
Significance level: $p < 0.05$.
Software: SPSS v.26.

INFORMED CONSENT FORM

1. Introduction

You are invited to participate in a research study conducted at Afyonkarahisar Health Sciences University Hospital. Please read this form carefully and ask any questions you may have before deciding to take part. Your participation is entirely voluntary.

2. Purpose of the Study

The purpose of this study is to evaluate the effectiveness of a digital board game-based psychological empowerment program for nurses. We aim to assess whether the program improves psychological empowerment, job satisfaction, and innovative behavior.

3. Procedures

If you agree to participate, you will be randomly assigned to either the intervention group or the control group.

Intervention group:

You will attend 6 weekly online sessions (2 hours each) via Zoom.

The program includes empowerment training, group discussions, digital board games, and quizzes.

Control group:

You will not attend training sessions during the study but will receive a printed booklet at the end of the research.

Both groups will complete questionnaires at four time points:

Before the program (baseline),

Immediately after the program (6 weeks),

1 month after the program,

3 months after the program.

The questionnaires include:

Demographic Information Form

Psychological Empowerment Scale

Job Satisfaction Scale

Innovative Behavior Scale

Program Evaluation Form (only for the intervention group after 6 weeks)

4. Duration of Participation

Your total participation will last approximately 4 months (from baseline to 3-month follow-up).

5. Risks and Discomforts

There are no known physical risks.

Possible minor discomfort may include:

Fatigue from completing questionnaires.

Mild stress during group discussions.

Participation will not affect your employment or professional status.

6. Benefits

You may gain increased awareness of psychological empowerment and new coping skills.

The program may contribute to higher job satisfaction and innovative behavior.

Although you may not benefit directly, your participation will help improve support programs for nurses.

7. Confidentiality

Your data will remain confidential and stored securely.

No identifying information will be shared.

Results will be reported collectively, without revealing individual identities.

Uploaded study documents will be publicly available on ClinicalTrials.gov, but participant names will never be included.

8. Voluntary Participation and Right to Withdraw

Participation is voluntary.

You may withdraw at any time without penalty.

Withdrawing will not affect your employment or any rights.

9. Compensation

No payment will be provided.

Small symbolic rewards (e.g., quiz participation gifts) may be given during the program.

10. Contact Information

If you have any questions about the study, please contact:

Principal Investigator: [Name, Title, Contact Information]

Ethics Committee: Afyonkarahisar Health Sciences University Ethics Committee [Contact Information]

11. Consent Statement

By signing below, you confirm that:

You have read and understood this form.

You had the opportunity to ask questions.

You voluntarily agree to participate in this study.

Participant’s Name & Surname: _____

Signature: _____

Date: ___ / ___ / _____

Researcher’s Name & Surname: _____

Signature: _____

Date: ___ / ___ / _____