

**Official Title:**

The Effect of Hand Hygiene Education With Cognitive Behavioral Therapy on Hospital Infection Awareness: a Randomized Controlled Trial

**NCT Number:**

Not yet assigned (pending registration at [ClinicalTrials.gov](https://clinicaltrials.gov))

**Document Type:**

Study protocol

**Document Date:**

12 Aug 2025

## **Overview of the Study**

AHIEVRAN-2025- HAND HYGIENE

**Brief title:** The effect of cognitive behavioral therapy and hand hygiene education on hospital infection awareness

**Official Title:** The effect of hand hygiene education with cognitive behavioral therapy on hospital infection awareness: a randomized controlled trial

**Sponsor:** no

**Collaborators:** no

## **Oversight**

**U.S. FDA-regulated Drug:** No

**U.S. FDA-regulated Device:** No

**U.S. FDA IND/IDE:** No

**Human Subjects Review: Board Status:** Approved

**Approval Number:** 2025-13/167

**Board Name:** Kırşehir Ahi Evran University Health Sciences Scientific Research Ethics Committee

**Board Affiliation:** no

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**Data Monitoring:** No

**FDA Regulated Intervention:** No

## **Study Description**

### **Brief Summary**

The aim of this study is to investigate the effect of hand hygiene training applied using cognitive behavioural therapy techniques on healthcare workers' attitudes and beliefs regarding nosocomial infections. Another aim is to increase the effectiveness of hand hygiene training and to instil correct hand hygiene behaviour by utilising cognitive behavioural therapy to raise awareness of nosocomial infections among healthcare workers. This is a single-centre, double-blind, randomised, controlled trial with a single parallel group. The hypothesis is that hand hygiene training using cognitive behavioural therapy techniques will influence healthcare workers' attitudes and beliefs regarding nosocomial infections.

### **Detailed explanation**

Although hand hygiene is a significant factor contributing to nosocomial infections, the problem of failure to implement effective hand hygiene has not yet been fully resolved. Hospital infections are generally defined as infections that develop in a patient who has been admitted to hospital for reasons other than infection. If the patient is not in the incubation period when admitted to hospital or does not have the signs and symptoms of that infection, infections that occur in hospital are hospital-acquired infections. Supporting hand hygiene training with Cognitive Behavioural Therapy represents a relatively new approach in the literature. Like many health behaviour interventions developed based on Ajzen's Theory of Planned Behaviour, this study also aimed to achieve lasting behavioural change by targeting cognitive attitudes and norms. Similar interventions have been found to be effective particularly in areas such as diabetes management, smoking cessation, and increasing physical activity. Von Lengerke et al. observed hand hygiene behaviour in their randomised controlled trials. Boscart et al. also utilised psychological theories to promote hand hygiene behaviour. However, the number of studies employing a cognitive behavioural therapy-based approach specifically for hand hygiene is limited. In this respect, this study makes an important contribution to the literature. This study goes beyond classical education models and focuses on transforming healthcare workers' attitudes towards nosocomial infections through an education approach based on a cognitive behavioural foundation. Given the scarcity of hand hygiene training supported by CBT in the current literature, this study presents a novel theoretical approach and proposes a robust strategy for preventing hospital infections in practice.

**Communication and locations**

Ayşegül Turan

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Kırşehir Ahi Evran University, Faculty of Health Sciences, Department of Nursing

Work address: Kırşehir Education and Research Hospital

**Conditions**

Hand hygiene training using cognitive behavioural therapy

Intervention / Training

Education: Hand hygiene training using cognitive behavioural therapy techniques

**Participation Criteria****Inclusion criteria:**

1. Being a healthcare worker
2. To have been actively working in a hospital for at least 1 year
3. Agreeing to participate in the research

**Exclusion criteria:**

1. Working on the infection control committee
2. Refusing to participate in the research

**Work Plan****Design Details**

**Study Type:** Interventional

**Primary Objective:** Change in beliefs and attitudes

**Study Phase:** N/A

**Separation:** Randomise

**Interventionist Model:** Parallel Assignment

**Number of Arms:** 2

**Masking:** Double (participant and statistician)

**Allocation:** Randomized

**Enrolment:** No participants yet. Power analysis was performed using the G-Power 3.1.9.4 programme to determine the sample size for the study. According to the calculations made based on the independent samples t-test, the required total sample size was determined to be 128 individuals, based on an effect size of 0.50, a margin of error ( $\alpha=0.05$ ) and 80% power. Considering any potential setbacks that may occur during the study, the target sample size is 140 individuals.

**Interventionist Model Description:** single-centred, parallel group

**Control and Interventions Group**

**Arms and Interventions**

A double-blind technique will be used in this study. Neither the participants nor the researcher collecting the data will know whether the participants are in the intervention or control group. Healthcare professionals will be included in both the intervention and control groups.

**Experimental: Interventions Group**

The intervention group will receive hand hygiene training using cognitive behavioural therapy techniques. Hand hygiene training using cognitive behavioural therapy techniques will be delivered by a specialist psychologist certified in cognitive behavioural therapy from among the researchers. The training consists of three 1-hour sessions. The information on hand hygiene included in the training has been obtained from data provided by the Turkish Ministry of Health and the World Health Organisation.

The aim of this training is to convince healthcare workers of the importance of hand hygiene in the prevention of hospital-acquired infections and to boost their confidence in their ability to adhere to hand hygiene guidelines. A strong commitment to hand hygiene will be possible through the development of self-regulatory behaviour. The objective is to foster self-regulatory behaviour through hand hygiene training integrated with Cognitive Behavioural Therapy techniques.

## **No Intervention: Control Group**

The control group will receive routine in-service training provided by the hospital training unit, the content of which has been approved by the Ministry of Health.

**Assigned Interventions:** Hand hygiene training prepared with cognitive behavioral therapy method. Cognitive Behavioural Therapy aims to help individuals recognise their incorrect or dysfunctional thoughts and develop more realistic and healthy ways of thinking in their place. This approach, which argues that cognitive beliefs must be transformed to change health behaviours, also underpins the Theory of Planned Behaviour. According to this theory, attitudes, subjective norms and perceived behavioural control directly influence an individual's behaviour.

The objectives of the training:

Learning the scientific principles of hand hygiene

Recognising the seriousness of nosocomial infections

Recognising one's own misconceptions

Learning about the role of education in the scope of research

The sample will consist of healthcare workers employed in the clinics of Kırşehir Training and Research Hospital. Power analysis was performed using the G-Power 3.1.9.4 programme to determine the sample size for the study. According to calculations based on the independent samples t-test, the required total sample size was determined to be 128 individuals, based on an effect size of 0.50, a margin of error ( $\alpha=0.05$ ) and 80% power. Randomisation will be provided by nQuery Adviser, version 7.0. A double-blind technique will be used in this study. In the double-blind technique, participants do not know whether they are in the intervention or control group. At the same time, the researcher evaluating the data does not know who is in the intervention or control group. The data for the study will be collected twice, before and after the training, through face-to-face questionnaires (provided in the appendix), following institutional and ethics committee approval. The obtained data will be loaded into the SPSS 29 programme, and in addition to descriptive statistics, the differences between the pre-test and post-test averages of the intervention group and the differences in attitudes towards nosocomial infections according to socio-demographic characteristics will be examined using variance analysis.

The investigators will administer the Nosocomial Infection Belief and Attitude Scale to the intervention and control groups before and after the training. The investigators will use the Research Randomizer application to select all participants to be included in the study. The investigators will number the list of healthcare workers who need to receive hand hygiene training in the hospital's training unit. The investigators will select 140 people using Research Randomizer. The investigators will renumber the 140 people The investigators have selected and select 70 people using Research Randomizer. The 70 people the investigators select will be our intervention group. The investigators researchers will not meet the healthcare workers. The investigators will not inform the intervention group that they are in the intervention group. The intervention group will receive training in the same manner as they received routine hand hygiene training. The hand hygiene training, prepared using Cognitive Behavioural Therapy techniques, will be delivered in three sessions. Each session will last approximately one hour.

Healthcare workers at Kırşehir Training and Research Hospital receive training on hand hygiene twice a year. Nurses from the infection control committee conduct hand hygiene training in the hospital's conference room. The training content is prepared by the Turkish Ministry of Health. The hospital training unit groups healthcare workers to be trained, preventing them from receiving training in crowded environments.

As part of this research, the investigators plan to provide hand hygiene training developed using Cognitive Behavioural Therapy techniques in collaboration with nurses from the education and infection control committee. This training will be delivered by our specialist psychologist researcher, who holds a Cognitive Behavioural Therapy certification. With this training, the investigators aim to convince healthcare workers of the importance of hand hygiene in preventing hospital infections and to instil confidence in their ability to maintain hand hygiene compliance. Strong commitment to hand hygiene will be possible through the development of self-regulatory behaviour. The investigators aim to develop self-regulatory behaviour through hand hygiene training integrated with Cognitive Behavioural Therapy techniques.

<b>Participant Group/Control</b>	<b>Participant Group / Intervention (Education)</b>
Routine hand hygiene in-service training approved by the Ministry of Health and provided by the hospital training unit	Hand hygiene training will be delivered using Cognitive Behavioural Therapy techniques. The training consists of three 1-hour sessions. The information on hand hygiene included in the training has been obtained from data provided by the Turkish Ministry of Health and the World Health Organisation. The programme, which applies Cognitive Behavioural Therapy techniques to the content, has been reviewed and approved by an expert professor in the field.

### Primary Outcome Measures

<b>Outcome Measurement</b>	<b>Measurement Definition</b>	<b>Time Frame</b>
Initial values obtained from the Nosocomial Infection Belief and Attitude Scale	The independent variables of the study are socio-demographic variables, while the dependent variables consist of items from the Hospital Infection Belief and Attitude Scale. Isolation, hand hygiene, ventilator-associated pneumonia, surgical site infection, and invasive procedures are measured using a five-point Likert scale consisting of 35 items, which assesses healthcare workers' beliefs and attitudes towards hospital infections. In the scale assessment, a score approaching 1 indicates low awareness of hospital-acquired infections, whilst a	The first measurement will be taken on the same day following the training provided to healthcare workers.



<b>Outcome Measurement</b>	<b>Measurement Definition</b>	<b>Time Frame</b>
	score approaching 5 indicates high awareness of hospital-acquired infections.	

### **Secondary Outcome Measures**

<b>Outcome Measurement</b>	<b>Measurement Definition</b>	<b>Time Frame</b>
Three-month change following the Nosocomial Infection Belief and Attitude Scale measurement	Following the provision of hand hygiene training via Cognitive Behavioural Therapy, the Nosocomial Infection Belief and Attitude Scale will be administered again.	The second assessment will take place three months after the training provided to

Outcome Measurement	Measurement Definition	Time Frame
		healthcare workers.

### **Collaborators and Researchers**

The individuals and organisations participating in this study

Dr Ayşegül Turan, Assistant Professor

Clinical Psychologist Furkan Turan

Professor Dr Gökhan Gözel, Infectious Diseases and Clinical Microbiology

The institution where the study will be conducted: Kırşehir Education and Research Hospital

### **Work Registration Dates**

### **Terms related to this study**

#### **Key words**

Nosocomial infection

Hand hygiene

Cognitive behavioural therapy

Keywords provided by Ayşegül Turan

Kırşehir Ahi Evran University

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Yeni kaynaklar 1000 karakter uzunluğunda

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