

Clinical Trial Protocol

Iranian Registry of Clinical Trials

28 May 2026

Effect of Radiation Protection Module on Knowledge, Attitude and Practice among Radiation Workers in Ministry of Health Facilities Negeri Sembilan and Malacca

Protocol summary

Study aim

The aim of this study is to develop, implement and evaluate the effectiveness of an educational intervention module based on Protection Motivation Theory (PMT) on the level of knowledge, attitude, and practice of radiation protection among radiation worker in the Ministry of Health facilities Negeri Sembilan and Malacca.

Design

a two-armed, single-blinded, parallel, randomised, controlled field trial, with pre-intervention and post-intervention evaluation.

Settings and conduct

34 healthcare facilities in Negeri Sembilan and Malacca. responded and field supervisor is blinded

Participants/Inclusion and exclusion criteria

Inclusion Criteria: a) A radiation worker with a minimum of 1-year of working experience in health services. b) A radiation worker, who are provided with a dosimeter by the employer. c) A radiation worker, who is working in the radiology department under the Department of Health, Negeri Sembilan and Department of Health, Malacca facilities. Exclusion Criteria: a) A radiation worker in the Department of Health, Negeri Sembilan and Department of Health, Malacca, who was absent during data collection 3 times. b) A radiation worker in the Department of Health, Negeri Sembilan and Department of Health, Malacca, who was not complete answering self-administered questionnaire during data collection.

Intervention groups

The intervention group consisted of radiology staffs that will be trained on ; • 2-hour interactive talk session consist of the principle, fundamental, epidemiology, prevalence, causes, consequences and prevention of radiation hazard. • Short videos related to radiation protection • Pamphlet. • Collateral as a reminder (WhatsApp) The control group consisting of radiology

staffs that will be trained on a 2-hour interactive talk on radiation protection by their state physicist.

Main outcome variables

Level of knowledge, attitude and practice of radiation protection

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20210116050043N1**

Registration date: **2021-04-24, 1400/02/04**

Registration timing: **retrospective**

Last update: **2021-04-24, 1400/02/04**

Update count: **0**

Registration date

2021-04-24, 1400/02/04

Registrant information

Name

KHAIRUL ANUAR ABDULLAH

Name of organization / entity

Universiti Putra Malaysia

Country

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drkhairulanuar84@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2020-12-01, 1399/09/11

Expected recruitment end date

2021-02-28, 1399/12/10
Actual recruitment start date
2020-12-01, 1399/09/11
Actual recruitment end date
2021-02-28, 1399/12/10
Trial completion date
2021-04-01, 1400/01/12

Scientific title
Effect of Radiation Protection Module on Knowledge, Attitude and Practice among Radiation Workers in Ministry of Health Facilities Negeri Sembilan and Malacca

Public title
Effect of Radiation Protection Module on Knowledge, Attitude and Practice among Radiation Workers in Ministry of Health Facilities Negeri Sembilan and Malacca

Purpose
Education/Guidance

Inclusion/Exclusion criteria

Inclusion criteria:

A radiation worker, who are provide with dosimeter by the employer. A radiation worker with minimum 1-year working experience in health services. c) A radiation worker, who are working in the radiology department under the Department of Health, Negeri Sembilan and Department of Health, Malacca facilities.

Exclusion criteria:

A radiation worker in the Department of Health, Negeri Sembilan and Department of Health, Malacca, who was absent during data collection for 3 times.

Age
From **18 years** old

Gender
Both

Phase
3

Groups that have been masked

- Participant

Sample size

Target sample size: **184**

Actual sample size reached: **158**

Randomization (investigator's opinion)

Randomized

Randomization description

Random allocation of radiation worker to either intervention or control arms were conducted by dividing in opaque envelopes containing colour-coded cards (white for 'controls', red for 'intervention' groups). Both State Physicist in the Department of Health Negeri Sembilan and the Department of Health Malacca were randomly picked the envelopes which divided the respondents into intervention and control arms. In each state, the radiation worker in the Participants' Name List will be number coded by the researcher. Only the researcher had access to the radiation workers' names and the codes and is solely responsible for the safekeeping and confidentiality of all the records. For concealment of allocation, both state physicist from the Department of Health, Negeri Sembilan and Department of Health, Malacca did not know their group allocation.

After randomisation complete, the researcher has done systematic random sampling in each group to achieve 79 respondent in each arm. Then, State Physicist invited radiation worker in the intervention group to attend the intervention programme. Thus one of the states was the intervention arm and the remaining state was control arms.

Blinding (investigator's opinion)

Single blinded

Blinding description

A single-blinded technique was employed where the participating radiation worker and the State Physicists were unaware of their group allocation. During the recruitment of radiation worker, prior to the randomisation, all participating radiation workers were informed that the intervention module was provided by the group and stage of study to all participating radiation worker. Thus, the radiation worker was unaware of the group allocation throughout the study. Blinding of the radiation worker was done because awareness of being in the control group might influence their answers in the questionnaires.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Medical Review & Ethics Committee (MREC), Ministry of Health Malaysia

Street address

Kompleks Institut Kesihatan Negara Blok A, No 1, Jalan Setia Murni U13/52, Seksyen U13, Bandar Setia Alam, 40170 Shah Alam, Selangor.

City

Shah Alam

Postal code

40170

Approval date

2019-11-18, 1398/08/27

Ethics committee reference number

NMRR-19-2860-49849

Health conditions studied

1

Description of health condition studied

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

practices of radiation protection

Timepoint

pre intervention, 1 month post intervention and 3 month post intervention

Method of measurement

questionnaire

Secondary outcomes

1

Description

Attitude and knowledge of radiation protection

Timepoint

pre intervention, 1 month post intervention and 3 month post intervention

Method of measurement

questionnaire

Intervention groups

1

Description

Intervention group : • 2-hour interactive PowerPoint slide presentation was developed base on the baseline results from previous research in Negeri Sembilan. Respondents were informed on the principle, fundamental, epidemiology, prevalence, causes, consequences and prevention of radiation hazard. • Short videos related to radiation protection was attached to the PowerPoint slide presentation. • Reading material for references (pamphlet). • Collateral as reminder (WhatsApp broadcasting). Respondents were reminded to read the pamphlet every 4 weeks until intervention end. The role of the WhatsApp group is to share information, problems and address any misunderstanding regarding radiation protection.

Category

Other

2

Description

Control group: The Control Group were received 2-hour interactive talk on radiation protection by their state physicist.

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

UNIVERSITI PUTRA MALAYSIA

Full name of responsible person

Khairul Anuar Bin Abdullah

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

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Full name of responsible person

Associate Professor Dr Ahmad Azuhairi Ariffin

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Grant name

Fundamental Research Grant Scheme

Grant code / Reference number

FRGS/1/2019/SKK01/UPM/02/4

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Universiti Putra Malaysia

Proportion provided by this source

100

Public or private sector

Public

Domestic or foreign origin

Domestic

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

Academic

Person responsible for general inquiries

Contact

Name of organization / entity

Universiti Putra Malaysia

Full name of responsible person

Khairul Anuar Bin Abdullah

Position

Doctor

Latest degree

Medical doctor

Other areas of specialty/work

Occupational Medicine

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

The data is private and confidential. Most respondent denied sharing their data

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

No - There is not a plan to make this available

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

Not applicable

Analytic Code

Not applicable

Data Dictionary

Not applicable

Title and more details about the data/document

When the data will become available and for how long

To whom data/document is available

Under which criteria data/document could be used

From where data/document is obtainable

What processes are involved for a request to access data/document

Comments