

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

17 Sep 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

Malaysia

##### Phone

+60 6-954 0410

##### Email address

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

#### Street address

FAKULTI PERUBATAN DAN SAINS KESIHATAN,  
SERDANG, SELANGOR

#### City

SERDANG

#### Postal code

43100

#### Phone

+60 3-9769 2300

#### Email

drkhairulanuar84@gmail.com

## Sponsors / Funding sources

### 1

#### Sponsor

##### Name of organization / entity

Universiti Putra Malaysia

##### Full name of responsible person

Associate Professor Dr Ahmad Azuhairi Ariffin

##### Street address

Fakulti Perubatan dan Sains Kesihatan, Universiti  
Putra Malaysia

##### City

Serdang

##### Postal code

43100

##### Phone

+60 3-9769 2300

##### Email

drkhairulanuar84@gmail.com

#### 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

**Street address**

Fakulti Perubatan dan Sains Kesihatan, Universiti  
Putra Malaysia

**City**

Serdang

**Province**

Selangor

**Postal code**

43100

**Phone**

+60 3-9769 2300

**Email**

drkhairulanuar84@gmail.com

**Person responsible for scientific 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

**Street address**

No 16, Jalan SW 27, Taman Sutera Wangi,

**City**

Melaka

**Province**

Melaka

**Postal code**

75150

**Phone**

+60 3-9769 2300

**Email**

drkhairulanuar84@gmail.com

**Person responsible for updating data**

**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**

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**Email**

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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**