SIIC101

A REVIEW ON THE PERSONAL PROTECTIVE EQUIPMENT (PPE) USED IN OCCUPATIONAL RADIATION PROTECTION

Jawidah Adiba binti Kamarolzeman[1], Nur Maizatul Azra binti Mukhtar[2,3]

[1]*Faculty of Chemical Engineering (Environment), Universiti Teknologi MARA, Cawangan Pulau Pinang, Kampus Permatang Pauh, 13500 Permatang Pauh, Pulau Pinang*

[2]*Faculty of Health Sciences, Universiti Teknologi MARA, Cawangan Pulau Pinang, Kampus Bertam, 13200 Kepala Batas, Pulau Pinang*

[3]*Department of Applied Sciences, Universiti Teknologi MARA, Cawangan Pulau Pinang, Kampus Permatang Pauh, 13500 Permatang Pauh, Pulau Pinang*

**Corresponding author: nurmaizatul038@ uitm.edu.my (Supervisor)*

Abstract:

The use of personal protective equipment is compulsory as a personal protection and control measure from radiation hazard. The hazard can be a high exposure of primary radiation or could be a low dose of the scattered radiation from the patients' body. Therefore, the workers must wear proper and the best quality of PPE to mitigate the radiation harmful. There are a lot of PPE available in the market with a particular based material, such as lead aprons, latex gloves, thyroid shield, and glasses. All these PPE have their property in terms of design, radiation characteristic, based-materials and others. Therefore, this study is conducted to gather information and findings from the previous study as a systematic review. As a result, 82 articles were retrieved from seven databases and screened out their eligibility. Of these, only 18 articles were eligible and included. Three of them discussed on theoretical such as survey and ten discussed on experimentally study.

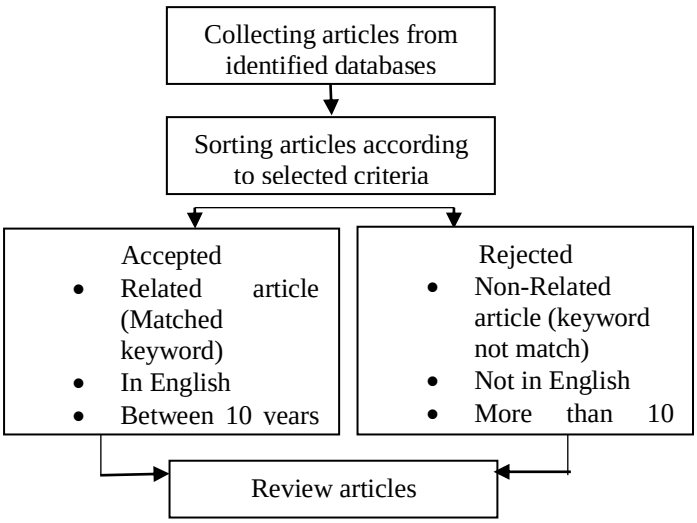
***Keywords*:**

Radiology, radiation protection, radiation risk, ALARA, PPE.

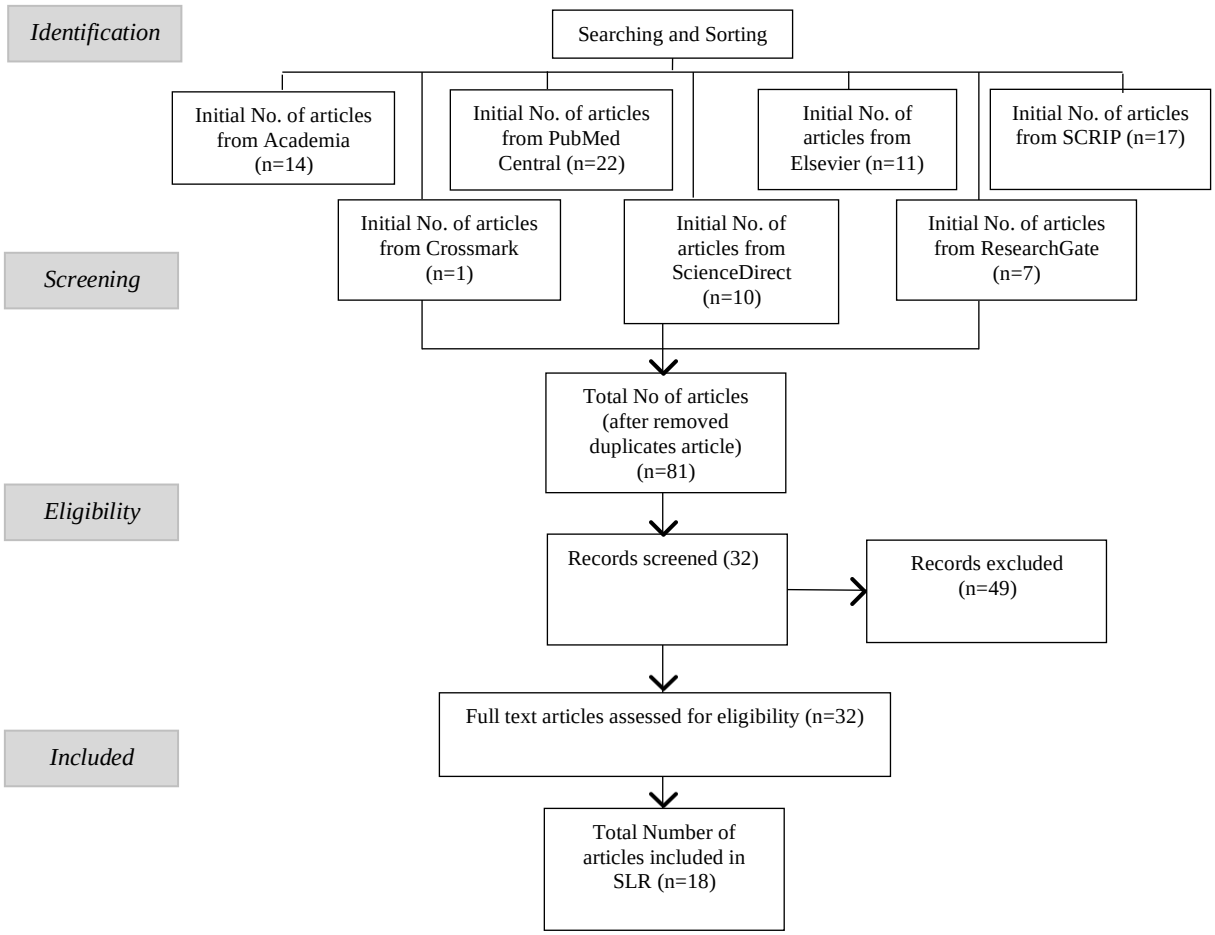
Objectives:

- To review and present the findings comparatively by using systematic review method.

Methodology



Results:



Conclusion:

As a conclusion, the lead is the best based material for the manufacturing of PPE as it can provide a great percentage of radiation reduction to the body. However, this material is found to be dangerous to health because of its toxicity. Not only that, the lead apron also causes an ergonomic problem to the radiation workers such as back pain and musculoskeletal problem. Therefore, futher study is necessary to identify lead equivalent material to overcome the present lead-based material.