

# Radiation protection of patients in dental radiology

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## Abstract for literature review

Despite there is a rapid growth in the technology that has myriad benefits in improving the interventions of dental health, only a few dentists are well aware of the risk hazards of some of these modern technologies (Praveen, et. al. 2013). Large body of evidence suggests the lack of knowledge in dentists in regards to the risks associated with ionising radiation while giving dental service (Rout and Brown, 2012). More importantly, only a handful of studies have attempted to unveil the facts and current state of knowledge and awareness associated with detrimental effects of ionising radiation in Australian and Jordanian dentists. This study, through questionnaires and interviews, examined the dentists that are giving services in Australia and Jordan and assessed their knowledge of such effects that are linked with ionising radiations. The study was carried through intense literature review was carried out to collect the current background in the subject area and the findings of these studies were critically reviewed.

Focus of the literature review was based upon the different factors, such as the complications of ionising radiation, complications in different age group people, preventive measures and the current state of knowledge in the dentists all around the globe. Praveen, et. al (2013) suggests that radiation in dentistry is mainly used for diagnostic purposes and in a dental set-up usually the practicing dentist exposes, processes and interprets the radiograph. Although the exposure to such radiation is kept as very less, it is essential to reduce the exposure to the minimum to the dental personnel and patients in order to avoid the carcinogenic and organ damaging effects that can be produced by it.. Several radiation protection measures have

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been advocated to ameliorate these effects. Dose dependent radiation exposure was identified as a one of the key measures in limiting the use of ionising radiation. As suggested by White and Mallya (2012), wise selection of patients to treat with ionising radiation and implement patient-specific reason, which ensures greater benefits than the harms are the two easiest ways to tackle with the risks associated with ionising radiation.

However, Ayatollahi et. al (2012) suggests that this practice is not adequately implemented in majority of the dental clinics. Secondly, the review identified children as most susceptible to radiation exposure. Preventive measures such as use of special radiation protection equipments and dose dependent exposure were suggested to be central in minimising the effects of ionising radiation in children in dental clinics. Moreover, it was suggested that knowledge of such risks in dentists can make a significant contribution in the improvement of safe dental practice, ensuring adequate safeguards of both patients and dentists.

The literature came up with a conclusion that up to date and evidenced based knowledge is still lacking in dentist regarding the risks of radiation hazard. This will need re-educating and re-training the dentists, make them aware of ionising radiation risks, and make them able to answer any queries from patients about the risks of ionising radiations (Praveen, et. al. 2013). As part of the clinical practice, all dentists are required to undertake radiography as part of the clinical practice in which dentists and members of the dental team, must understand the basic principles of radiation physics, hazards and protection, and should be able to undertake dental radiography safely with the production of high quality, diagnostic images (Rout and <https://assignbuster.com/radiation-protection-of-patients-in-dental-radiology/>

Brown, 2012). Although the grey area that was identified was that, dentists are poorly informed on how to use medical imaging tools safely and efficiently. Furthermore, they are found to underestimate the radiation risk and their devastating effects in patients' long term health. In addition, some of the studies revealed that despite some knowledge on the harmful effects of ionising radiation in patients, as well as in their own health, the knowledge of patient's protection including the exposure distance and prevention of radiation leakage, protection of personnel, i. e. the occupational risk hazards of ionising radiation, dentists were reluctant to employ these safety measures in day to day practice (Rout and Brown, 2012)).

Considering the context of this study, no research has evaluated Australian and Jordanian dentists' knowledge on the risks associated with ionising radiation in the dental clinics; suggesting the importance and need to carry out this study. This puts patients of different age groups in significant risk of developing pathological conditions that are induced by the exposure to ionising radiation. Thus, designing a training module to teach dentists about radiation safety and risk is mandatory for safe dental health practice. This study provides insights into developing new strategies, policies and practices to minimise or even avoid such risks in the future.

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