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**QUESTION A**

**RESEARCH STEPS:**

**Step 1:**

Locating and Defining Issues or Problems. ...

**Step 2:**

Designing the Research Project.

Research design involves the following steps.

•Secondary data analysis

•Qualitative research

•Methods of collecting quantitative data

•Definition of the information needed

•Measurement procedures

•Questionnaire design

•Sampling process and size

•Data analysis planning

**Step 3:**

Collecting Data.

**Step 4:**

Interpreting Research Data.

**Step 5:**

Report Research Findings.

**REASONS:**

We have to follow all these five steps in a sequence during our research because it will help us to complete our research in a best way, leaving a single step will not full fill the criteria as well as our research will not accepted.

**QUESTION B:**

**QUALITY PARAMETER AND ASSESMENT METHODS OF DIGITAL RADIOGRAPHY IMAGES:**

**INTRODUCTION AND LITRATURE REVIEW:**

Digital radiography is the most widely used technology in the field of radiology. Screen and film radiography systems are almost replaced by digital radiography. The principles of data acquisition and image processing of digital radiography differ from those of conventional radiography.

Digital images have vital advantages in health services. Image quality was improved and the patient's radiation dose was reduced by introducing digital imaging systems including computed radiography (RC) and digital radiography (DR). Additionally, digital imaging modalities have revolutionized communication between radiographers, radiologists, and physicians.

There are several parameters that characterize the quality of digital images. Resolution, noise and artifacts are the main parameters of image quality. Some studies include optimal image quality that is achieved with the lowest radiation dose possible for the patient. The high flexibility of CR and DR increases the opportunity to optimize image quality and reduce radiation dose. The minimum level of image quality and radiation dose should be determined based on the diagnostic purpose.

The relationship between the quality parameters of digital radiographic images, including resolution (spatial resolution and contrast resolution), noise and artifacts is complicated, meaning that there is a trade-off between them, improving one parameter can deteriorate another. Therefore, optimizing these parameters is not a simple task. Optimizing image quality parameters with respect to radiation dose makes it a more complicated task. Furthermore, the effect levels of these parameters on the image quality of different digital radiography systems and units are not exactly the same, although they share the principles of the image quality parameters. The only way to optimize image quality parameters while keeping low

Radiation dose is a deep understanding of the effects of these parameters on each other, influencing factors, and their impact on radiation dose for each different digital radiographic system. Each of the available evaluation methods has its own advantages and limitations. Therefore, each evaluation method should be used and employed according to its abilities to improve the image quality and the image process.

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