Psychological Problems Experienced by Patients Undergoing Magnetic Resonance Imaging (MRI)

Thesis

Submitted for partial fulfilment of the requirement of the Master degree in nursing science (psychiatric mental health nursing)

By

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Sahar Ibrahim Hamad

Abstract

Background:-Magnetic Resonance Imaging (MRI) became an increasingly common form of examination for both adults and children. They are experience anxiety during the examination. **Aim of the study:** This study aimed to assess the psychological problems experienced by patients undergoing (MRI). **Design:** A descriptive research design was utilized in this study. **Setting:** This study was carried out in the (MRI) department of Ain Shams specialized hospital. **Study subjects:** A convenient sample of all available patients who are undergoing (MRI) in the previous setting (no=100) were included in the study. **The study tools were used** 1-Interviewing questionnaire sheet. 2- Needs questionnaire of patients undergoing (MRI).3-The magnetic resonance imaging anxiety questionnaire. **Results:** revealed that the majority of the sample needs information about (MRI) and slightly less than three quarters of the patients had moderate anxiety. **Conclusion:** There was a positive significant correlation between total patients' needs and anxiety level. **Recommendations:** An observational cohort study should be performed to evaluate whether newly designed (MR) scanners with Acoustic noise reduction and a patient friendly short magmatic bore reduces the rate of anxiety reduction.

Key words: patients' needs - Magnetic Resonance Imaging (MRI) - Anxiety

List of Contents

List of Abbreviations

Abb.	Full term
MRI	Magnetic Resonance Imaging
NMRI	Nuclear Magnetic Resonance Imaging

List of Tables

List of Tables Cont...

List of Figures

Fig. No.	Title	Page No.

INTRODUCTION

Magnetic Resonance Imaging (MRI) is non-invasive imaging technique that uses a large, powerful magnet and radio frequency coil to obtain cross-sectional images of the body tissue, it is based on biochemical differences between cells and uses the electric fields to atoms in cell nuclei ***(Markl, 2012).***

MRI of the body uses a powerful magnetic field, radio waves and a computer to produce detailed pictures of the inside of patient's body. It may be used to help diagnose or monitor treatment for a variety of conditions within the chest, abdomen and pelvis ***(Barker et al., 2012).***

MRI has become an increasing common form of examination for both adults and the children. Although it is non-invasive and considered painless, both adult and children experience anxiety during the examination. The technique is sensitive to motion and for the reason many children are anaesthetised ***(Funk et al., 2014).***

MRI has been described as the most important medical innovation in the last 25 years. There has been an enormous increase in the usage of this modality in the clinical sitting. For an (MRI) scan, patients typically have to be placed in a long narrow tube ***(Augustyniuk et al., 2013).***

Anecdotal evidence from different institutions show that 1% to 5% of all patients who received (MRI) of the head may experience a sensation of anxiety, this is caused by the

introduction of the patient into confined tube with a limited field of vision ***(Bluemke & Breiter, 2000).***

MRI carries biological risk to patients with ferromagnetic implants and many patients experience psychological distress and / or panic reaction during the scan ***(Bluemke & Breiter, 2000).***

According to ***Dziuda (2015)*** who explained that a variety of anxiety reactions can occur among patients during this type of examination, including nervousness, fears, palpitations or a sensation of choking. These anxiety reactions are characterized by fears specific to the constraints of the scanner, may mean that the scan cannot be completed. Additionally, patients have attributed their anxiety to two sources, the first involves physical reaction to (MRI) such as not being able to see out of the tube not being able to move and hearing unbearable noise like metal being crushed, the other source of anxiety is the fear of what the (MRI) might discover, for example brain tumour ***(Dziuda et al., 2013).***

Radiology nurses play a pivotal role in the administration of ultrasounds, MRI for patients. Nurses are responsible for the safety and comfort of patients during procedures. They insert IVs, monitor patients' vital signs, and explain the results of exams to patients and their families. Successful radiology nurses are calm, sympathetic, intelligent, and interested in health care technology ***(Justin, 2016).***

Significance of the study:

Magnetic resonance imaging (MRI) has become a standard procedure for the diagnosis of central nervous system and muscular-skeletal system disorders. Although (MRI) provides valuable clinical information, in some patients the procedure can cause psychological effects such as discomfort, anxiety and fear associated with the necessity to remain motionless in a closed space of the (MRI) chamber that is why assessment of the psychological problems experienced by patients undergoing (MRI) is important in order to plan for the alleviation of patients' problems.

AIM OF THE STUDY

This study aimed to assess the psychological problems experienced by patients undergoing Magnetic Resonance Imaging (MRI).

Research questions:

This study was based on answering the following questions:

1. What are the psychological problems experienced by patients undergoing Magnetic Resonance Imaging (MRI)?
2. What are the needs of the patients undergoing (MRI)?

REVIEW OF THE LITERATURE

What is Magnetic Resonance Imaging (MRI)?

Overview about MRI

It is also known as Nuclear Magnetic Resonance Imaging (NMRI. Magnetic resonance imaging (MRI) is a non-invasive medical test that physicians use to diagnose medical conditions. (MRI) does not use ionizing radiation (x-rays) ***(Augustyniuk et al., 2013).***

MRI uses a powerful magnetic field, radio frequency pulses and a computer to produce detailed pictures of organs, soft tissues, bone and virtually all other internal body structures. On exam of Magnetic Resonance Imaging (MRI) produces dozens or sometimes hundreds of Images. Detailed MR Images allow physicians to evaluate various parts of the body and determine the presence of certain diseases. The images can then be examined on a computer monitor, transmitted electronically, printed or copied to a CD or uploaded to a digital cloud server ***(Barker et al., 2012).***

MRI exam causes no pain. If the patient has difficulty lying still or very nervous, the patient may be given a medicine to relax. Too much movement can blur Magnetic Resonance Imaging (MRI) images and causes errors ***(Ahlander, 2015).***