ELSEVIER

Journal of Medical Imaging and Radiation Sciences xx (2016) 1-8

Journal of Medical Imaging and Radiation Sciences

Journal de l'imagerie médicale et des sciences de la radiation

www.elsevier.com/locate/jmir

Addressing the Patient Experience in a Magnetic Resonance Imaging Department: Final Results from an Action Research Study

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ABSTRACT

Introduction: Patients undergoing magnetic resonance imaging (MRI) can experience anxiety and claustrophobia. A multimethod action research study was conducted to determine how patient care was currently being delivered in an MRI department and to determine whether this could be improved.

Methods: This action research study used both quantitative and qualitative methods. Changes were introduced into the department after baseline data collection to address areas for improvement. A survey was conducted of patients to establish their level of satisfaction and/or anxiety and to determine whether this improved during the course of the project. Staff practice was qualitatively observed over the course of the project and observations recorded in a field diary. Finally, focus groups were held with staff.

Results: The project resulted in improved satisfaction and lower anxiety for patients, and increased the amount of patients receiving information compared with the results of a baseline survey. However, these findings were not statistically significant. Among staff, qualitative observations portrayed a renewed focus on the patient in MRI including changes in their actions such as increased use of touch, improved communication, and focused efforts to maintain privacy.

Conclusions: This study was able to achieve a change in practice through an action research cycle in a MRI department. Over the course of the project, improvements were made to the department, and radiographers changed the way they acted and interacted with patients.

Keywords: MRI; action research; patient experience; anxiety

RÉSUMÉ

Introduction : Les patients qui passent un examen d'IRM peuvent ressentir de l'anxiété et de la claustrophobie. Une recherche-action multiméthodes a été menée afin de déterminer comment les soins aux patients étaient actuellement assurés dans un service d'IRM et si des améliorations pouvaient être apportées.

Méthodologie : Cette étude de recherche-action applique à la fois des méthodes qualitatives et des méthodes quantitatives. Des changements ont été mis en place dans le service après la collecte de données de référence afin d'apporter les améliorations dans les domaines identifiés. Un sondage a été effectué auprès des patients afin de mesurer leur niveau de satisfaction ou d'anxiété et déterminer si cela avait évolué au fil du projet. La pratique du personnel a fait l'objet d'une observation qualitative sur la durée du projet et les observations ont été consignées dans un journal. Enfin, des groupes de discussion ont été tenus avec le personnel.

Résultats : Pour les patients, le projet a permis d'améliorer la satisfaction, d'abaisser l'anxiété, et d'augmenter le nombre de patients recevant de l'information par rapport aux données de référence. Cependant, ces constats ne sont pas statistiquement significatifs. Au sein du personnel, les observations qualitatives indiquent un centrage sur le patient accru en IRM, incluant des modifications comportementales comme une utilisation accrue du toucher, une amélioration de la communication et des efforts concertés pour préserver la vie privée.

Conclusions : Cette étude a permis d'apporter des changements dans la pratique par un cycle de recherche-action dans un service d'imagerie par résonance magnétique. Au fil du projet, des améliorations ont été apportées au service et les radiographes ont modifié la façon dont ils agissent et interagissent avec les patients.

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1939-8654/$ - see front matter
http://dx.doi.org/10.1016/j.jmir.2016.04.007

Background

Patients undergoing magnetic resonance imaging (MRI) can often experience anxiety during the scanning procedure [1]. In some cases, this anxiety can result in a claustrophobic event, with the scan requiring termination early, or the patient simply refusing to be scanned, with recent literature suggesting this occurs in 12 of 1,000 patients [2]. In a survey of radiographers, 71.6% of respondents stated that patient anxiety was a common issue in their imaging department when patients presented for MRI [3]. Causes of anxiety during scanning include the enclosed nature of the scanner leading to a claustrophobic reaction, anxiety regarding results, or having to keep still for long periods of time when in pain or discomfort [1, 4]. It is imperative that the patient remains motionless during scanning to acquire optimal images because of the artefacts that appear as a result of moving, which lowers the quality and diagnostic value of the scan [5–9]. However, high levels of anxiety during imaging can lead to increased patient movement during scanning [10]. In extreme cases, scans may need to be aborted or patients may refuse to have the scan, sedation may need to be used, or additional sequences performed [11]. These missed or increasingly difficult scans have financial implications because valuable staff and equipment time is lost [11, 12].

Anxiety and satisfaction was investigated in an MRI department as part of an action research project. Action research "is a form of research that investigates and describes a social or work situation with the aim of achieving a change which results in improvement."[13] Action research is a cyclical process that can include many phases, including a process of diagnosis, action planning, action taking, evaluating, and learning [13]. The results of the diagnosis stage of this action research project have been published previously [13–15]. During the diagnosis stage, the investigators found high levels of patient satisfaction and low levels of anxiety within the department, but also identified a number of areas where there was potential for improvement. This article reports on the final phases (action taking and evaluation) of an action research project aiming to investigate and improve the patient experience (with a particular focus on satisfaction and anxiety) within an MRI department.

Methods

Study Design

The project took place in the MRI department of a major metropolitan hospital in an Australian capital city. A multimethod action research approach was taken to determine how patient care was currently being delivered in the department and to determine whether this could be improved. This was conducted in five phases: (1) diagnosis, (2) action planning, (3) action planning, (4) action taking, and (5) evaluating and learning. The methods used in the diagnosis stage included patient and staff surveys, focus groups, and participant observation, with the results of these phases being reported in previous publications [13–15]. It was found during the diagnosis phase that the delivery of patient care was of a high standard, although there was room for improvement. The data collected during the diagnosis phase was then fed back to staff via a focus group, one-on-one discussions, and printed materials. Based on discussions with staff, strategies were implemented into the department where there were areas for improvement (phases 3 and 4, action planning, and action taking). After the implementation of these strategies, another phase of data collection (phase 5 and evaluation) was undertaken. Ethical approval was granted for this study. The lead researcher for this project was an external researcher and was not an authority figure in the department.

Data Collection

Both quantitative and qualitative approaches to data collection were used. The survey of patients conducted during phase 1 (diagnosis) was repeated during phase 5 (evaluation) among a new sample of patients to evaluate the effectiveness of the strategies used during phases 3 (action planning) and 4 (action taking). The sample frame consisted of all outpatients during the data collection period (August and September). Outpatients were phoned by the administration staff on the day before their examination to determine whether they were willing to take part. All participants willing to take part signed a consent form. Patients were told that saying no to the survey would not impact on their scan or the treatment they received. Surveys were anonymous, and participants placed them in a sealed box once complete. There was no way to link an individual patient to a survey, and patient confidentiality was maintained. The survey questions and their method of answering are reported in Table 1. Further detail on the questions and measurement methods is provided elsewhere [14].

Qualitative observations were collected at baseline and once again after implementation of improvement strategies by a participant observer. The degree of participation ranged from passive participation (observing but not taking part in any activities) to moderate participation (taking part in

Table 1
Survey Questions

Question	Measurement
Did you receive information explaining the procedure and what to expect before your scan (either written or verbal)?	Yes/no
If yes, did you find this information useful?	Likert scale
How anxious were you during your scanning experience?	Visual analog scale (VAS)
How satisfied were you with your scanning experience?	VAS
If you were anxious, did the actions of hospital staff within the department reassure you?	Likert scale
Have you previously had a scan, either here or in another department?	Yes/no
If yes, how anxious were you during your last scanning experience?	VAS
How satisfied were you with your last scanning experience?	VAS