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Patients' Experience of PET-CT Scan at Armed Forces Institute of Radiology and Imaging Rawalpindi

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ABSTRACT

Objective: To evaluate the patients' feedback for potential improvements in the patient management of PET-CT Department.
Study Design: Cross-sectional survey.
Place and Duration of Study: Armed Forces Institute of Radiology and Imaging, Rawalpindi Pakistan, from Sep to Dec 2020.
Methodology: A total of 350 participants were investigated in the study. Structured proforma was utilized for collecting patient feedback, and the ages ranged from 4 to 89 years. The collected data were arranged systematically to apply statistical tests using Microsoft excel.
Results: Explicitly, 14(4%) patients communicated their reservations about further development in PET-CT scan practice. In this regard, 4(1.14%) patients suggested overall improvement in the department. Further, 4(1.14%) and 3(0.86%) patientss' suggestions were towards staff behaviour and building of the department, respectively. Additionally, 2(0.57%) patients were not contented with the available prerequisite equipment, and 1(0.29%) patient suggested a reduction in scanning charges.
Conclusion: More than 95% patients were satisfied with their experience. The studied data can be utilized to establish patient management protocols for similar PET-CT departments.

Keywords: Patient feedback, PET-CT, Patient management, Prerequisite equipment.

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INTRODUCTION

The departments of hybrid imaging use radiopharmaceuticals for diagnostic purposes, and the primary target for such departments are cancer patients.[1,2] Cancer is a disease that brings anxiety and discomfort in patients. This anxiety can further increase due to the long and unfamiliar diagnostics procedures such as PET/CT scans. The procedure includes an inspection of blood sugar levels after six hours of fasting, and then an injection of radioactive FDG is administered to the patient. The uptake time of radioactive FDG is almost 50 minutes, during which patients have to wait in an alone shielded room. The scanning also takes almost 30 minutes; therefore, the total time taken for the scan is more than 4 hours.[3-5]

Thorough planning is required for the PET-CT scan, and staff and patients should be adequately educated about the process. Although many studies are available on a variety of cancer, very little information is present about patient experiences of PET-CT scan.[6] There is a possibility of fear, threat, anxiety and stress in cancer patients during medical imaging as it could ascertain the diagnosis and change the therapeutic course.[7,8] Patients may also feel discomfort, stress and claustrophobia due to the experience of intimidating and less acquainted technology and the limited nature of the imaging process.[9,10]

This study aimed to investigate the patient experiences of hybrid imaging scans and evaluate their satisfaction level. Subsequently, analyze their valuable suggestions to identify key areas of improvement and implement countermeasures to enhance the overall quality of healthcare provided at the facility.

METHODOLOGY

This study was conducted in a PET-CT facility at PET/CT Department, Armed Forces Institute of Radiology and Imaging (AFIRI), Rawalpindi Pakistan. Approval from the ethical committee of AFIRI (IERB certificate no. 0034) was taken. Sample size was calculated using WHO sample size calculator taking confidence interval 95%, margin of error 5% reported prevalence of cancer patients in Pakistan 8.76%.[11] Sampling was accomplished using the convenience sampling technique. A total of three hundred and fifty patients participated in this study for four months, from September to December 2020.

Inclusion Criteria: All patients of age 3 to 90 years who have cancer were included in the study.

Exclusion Criteria: Patients with a height of more than 180cm and those who were unwilling to participate in the study were excluded from this study.

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The patients were informed about the purpose of the study and given an evaluation proforma. The evaluation proforma consisted of two parts. Firstly patients were asked about their experience in PET/CT department. In the second part of the questionnaire, patients were asked if they would like to give suggestions to improve the overall process of the procedure, and they were divided into two groups, X and Y. Group-X patients were those who gave some suggestions that could help enhance the overall scan experience, and Group-Y patients were who did not give any suggestions. This study was performed, including respective the gender identity of the patients. The patient feedback was taken utilizing a patient experience proforma inquiring about their overall experience of PET-CT scan and their recommendations for improvement.

All the patients willing to provide suggestions for the department's improvement were included in this study. Patients were divided into two groups corresponding to their provided suggestions. One of the groups was satisfied with the nursing staff's scan procedure and professional expertise. The other group had observations about their interactions with the staff of the PET/CT scan. The survey was also used to outline satisfaction in different age groups. The unsatisfied patient group was further divided into two groups; the first set gave valuable suggestions, while the second group had no recommendation for improving the procedural approach at PET/CT department. The patient groups were distinguished for male and female patients for the usefulness of the study.

Microsoft Excel was utilized to perform the statistical analysis of the gathered data. Quantitative variables were summarized as Mean±SD and qualitative variables were summarized as frequency and percentages

RESULTS

A total of 350 patients took part in this study. In general, 210(95.8%) of the male patients were satisfied with their experience at the department, while 9(4.2%) were not convinced by the experience they had at the department. On the other hand, 126(96.2%) female patients were satisfied with the overall treatment procedure, and 5(3.8%) patients were not satisfied with their experience of the PT-CT Scan (Table-I). The mean age of male patients who were satisfied with the procedure was 50.50±17.38 years (Table-II). The present study indicated the patient perception of different age groups and gender towards the healthcare experience they came across at the facility. Only 75(21.42%) out of 350 people gave their opinions about what changes could and should be made to improve the overall experience, while 275(78.57%) gave no observations.

Table-I: Number of Satisfied and Unsatisfied Patients (n=350)

Nomenclature	Satisfied	Unsatisfied
Male (n=219)	210(95.8%)	9(4.2%)
Female (n=131)	126(96.2%)	5(3.8%)

Table-II: Age Difference of Patients having Positive and Negative Feedback about their Experience (n=350)

Parameters	Male (n=219)	Female (n=131)
Mean age (satisfied patients)	50.50±17.38	47.23±18.12
Mean age (unsatisfied patients)	40.44±14.37	28.2±8.67

DISCUSSION

Cancer patients undergoing PET-CT scans are likely to face anxiety and nervousness before and after the procedure.[12,13] It was observed that the web-based information about the PET/CT scan procedure might not be helpful in the reduction of their anxiety.[14] Therefore, the patients rely on the support and awareness provided by the hospital staff to ease their anxiety.[15,16] Results from this study showed that most patients were satisfied with the scan procedure. The patients felt comfortable with the overall healthcare environment provided at the facility. Only a few people showed discomfort with the procedure and suggested improvement. Furthermore, patients gave various remarks about their diagnosis experience based on the second question asked in the questionnaire.

Anderson *et al.* studied patient anxiety during PET/CT scans in 2016. They found that 52(%) to 70(%) of patients were satisfied with the performance of the nursing staff, whereas our study showed that only 4 (1.14%) patients were unsatisfied with the nursing staff.[11] This issue could be due to a communication gap between staff and patients. This could be improvised by educating staff about patient guidance and training them to resolve patient-specific needs. Similarly, comparing our study, 4(1.14%) patients were not pleased with the environment of the department. In comparison, another study performed by Ana Grilo *et al.* in 2017 elaborated on the causes of anxiety before (79.1%) and after (86.9%) the FDG scan.[12] The difference between these two studies could be explained by the fact that our study was conducted in a completely new setup, so the environment is fresh, and all the equipment is newly installed, which provides the best

quality of healthcare and a minimal difference in the management of procedure during the patients.

The patients have raised some negative aspects regarding passing the cannula, and a vein visualizer was suggested to be acquired for this problem. The problems in the detection of veins could be either due to previous chemotherapy, past injuries & old age.[17,18]

This was the first study of this kind regarding patient feedback and suggestions in Military hospitals conducted at the Armed Forces Institute of Radiology and Imaging (AFIRI). This study aimed to improve the overall healthcare experience of the patients. Such studies could be used to improve the scanning procedure and the overall quality of patient care at other facilities.

STUDY LIMITATIONS

This study was limited to basic investigation, and a thorough study is required to cover all aspects of patients' satisfaction levels according to international standards.

CONCLUSIONS

The present study showed that most people had a comfortable experience with the PET-CT Scan procedure, excluding a small fraction of people who recommended improvement. We observed that people have negligible information regarding the procedure of PET-CT scan, so the guidance provided to the patients has great importance. The findings reflected the experience of this novel diagnostic modality and identified the areas of improvement in patient management. Furthermore, an improved procedure was introduced after removing unfavourable practices due to this distinctive investigation at AFIRI Rawalpindi. This study opens the platform for similar studies investigating the patient experience of similar PET-CT departments.

Conflict of Interest: None.

Author's Contribution

Following authors have made substantial contributions to the manuscript as under:

RB & MA: Study design, drafting the manuscript, data interpretation, critical review, approval of the final version to be published.

ARS & SAM: Data acquisition, data analysis, data interpretation, critical review, approval of the final version to be published.

MB & AJ: Conception, critical review, drafting the manuscript, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated & resolved.

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