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ORIGINAL ARTICLE

Exploring Environmental Factors to Introduce Occupational Therapy Practice at Semi Public Trauma Center in Sindh

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Abstract

Background: Occupational therapy is an essential process in acute care environments that allows initiating functional recovery and ensuring successful discharge planning. Nevertheless, in poor and middle-income nations such as Pakistan, the process of occupational therapy integration in trauma centers is still confined by a number of factors in the environment. This paper discusses the environmental facilitators and barriers that influence occupational therapy practice in a semi-public trauma center in Sindh, Pakistan.

Methods: It was a cross-sectional study carried out over an 8-9-month period, in a tertiary care semi-public trauma center in Sindh. The study involved 10 occupational therapists who worked in five wards. A self-designed digital checklist was used to collect data via Google Forms at the end of 9-10 months of service of therapists. The checklist evaluated both the environmental facilitators and barriers to the provision of occupational therapy services. Participants were recruited through convenience sampling.

Results: A total of 90 patients were sampled in 5 wards: Orthopedic Surgery (n=18), Neurosurgery Female (n=22), Neurosurgery Male (n=20), Plastic Surgery (n=18), and Vascular Surgery (n=12). Management support, positive attitudes of patients, positive feedback, availability of equipment, and inter-professional collaboration were found to be key facilitators. The major obstacles were poor ward hygiene, overcrowding, poor privacy, low awareness of occupational therapy, and a language barrier.

Conclusion: Occupational therapy services are being recognized in acute trauma units in Pakistan despite the serious environmental problems. One of the most important facilitators proved to be management support and feedback with the patient, whereas the infrastructural and awareness-related barriers need specific interventions. The research offers the basis of setting up occupational therapy services in such an environment in low and middle-income nations.

Keywords: *Occupational Therapy, Traumatology, Acute Care, Environmental Factors, Rehabilitation.*

Introduction

The contribution of Occupational Therapy (OT) in acute care hospital units has been known and accepted by the international community over the decades.[1] The modern healthcare advancements have enabled the survival of patients who once would have been viewed as terminally ill, which has created the necessity of a comprehensive approach to rehabilitation. Patients in acute care often have worsened Basic Activities of Daily Living (BADLs) due to critical injuries, illnesses, or surgery and require more specific occupational therapy services to return to functional independence and reintegrate into the community.[2-3]

In acute care, occupational therapists provide intensive care, grounded on an early intervention approach, to enhance functional recovery in a steady manner, facilitate a discharge process, and avoid hospital readmission.[4-6] The intervention of OTs in acute care usually includes cognitive rehabilitation, an early mobility program, retraining self-care tasks, and discharge planning. Studies continually prove that occupational therapy services in acute care facilities lead to better patient outcomes, reduction of hospitalization, and patient satisfaction.[7-9] Among the range of abilities that are displayed by the occupational therapists, one may distinguish their ability to combine the instruction of patients, assessment, and treatment in a way that cannot be detected. Nonetheless, role ambiguity in the acute care setting remains a problem for many practitioners.[10-11] Research in other countries reveals that occupational therapists have dominated using assessing patients and coming up with a discharge plan, to be considered the main occupation because of the time limitations of acute care settings.[12-14]

It is especially the elderly patients who are admitted to hospitals because of trauma that are at especially high risk of functional deterioration as a result of deconditioning, and the longer the stay, the higher the risk of poor results. There is mounting evidence that, by offering timely, rehabilitative-oriented interventions, trauma units can reduce the risk of disability considerably by increasing patient functionality and allowing a direct discharge of patients out of the hospital to their homes, without further transfers between hospitals and homes.[15-16] Occupational therapy services administered early, particularly when timely and condition-specific, have been shown to reduce the length of hospital stay, and ease patient discharge out of hospitals into their homes without the need for an intermediate transfer between hospitals and their homes.[17] Although there are strong arguments and support in the use of occupational therapy in acute care and trauma units, there are significant challenges to service integration, especially in Low and Middle-Income Countries (LMICs).[15-16] In such environments, the rehabilitation services are considered as additional and not vital aspects of healthcare. A good illustration of this problem is Pakistan, where formal occupational therapy interventions in traumatology did not start until recently. Reentering the trauma patients into normal functional activities is a very important challenge and has been complicated by a lack of awareness, scarcity of resources, and poor rehabilitation facilities.

This research fills this gap by discussing environmental factors that support or restrict occupational therapy integration in a semi-public trauma care in Sindh, Pakistan. These factors should be understood to come up with strategies of overcoming the barriers, improving services delivery, and eventually improving functional outcomes of trauma patients in other similar healthcare settings in the LMICs.

Methodology

Study Design and Setting

It was a cross-sectional observational study that was carried out in one of the tertiary care semi-public trauma centers in Sindh, Pakistan. The center is a key referral center in terms of trauma, offering both emergency and surgical care to the traumas around the region.

Target Population

The research was limited to occupational therapists who were serving in the semi-public trauma center in an active manner and had served at least 9-10 months of the current period in the facility.

Study Duration

The 8-9 months of the time frame of data collection provided therapists with enough time to acquire a

considerable amount of clinical experience and form in-depth knowledge about the environmental factors that influence their practice.

Sampling Technique

All the available occupational therapists who met the inclusion criteria were recruited to participate in the study through convenience sampling. The reason why this non-probability method of sampling was suitable was that there are only a few occupational therapists who engage in trauma settings in Pakistan.

Sample Size

In the study, ten (10) occupational therapists were used as they were all the eligible therapists occupying their positions in the facility during the period of the study.

Inclusion Criteria

- The occupational therapists of the semi-public trauma center.
- Minimal nine to ten months of experience at the facility.
- Able to give informed consent.

Exclusion Criteria

- Occupational therapists who are less than 9 months of service.
- Other rehab professionals (speech therapists, physiotherapists)
- Occupational therapists in other departments other than the trauma center.

Tool for Data Collection

To measure environmental facilitators and barriers influencing occupational therapy practice, a self-designed digital checklist was created to fit the focus of the study. The checklist was developed with the help of Google Forms and contained:

- Therapist demographics and patients.
- Environmental facilitator structured questions (management support, patient attitudes, equipment availability, inter-professional collaboration)
- Environmental barriers (hygiene, crowding, privacy, awareness, communication) were bivariate-structured.
- Open-ended questions to get more insights about it.

Data Collection Procedure.

The self-administered checklist was drawn and pilot-tested on two occupational therapists, who were not part of the final sample. The Institutional Review Board (IRB) approved the ethical conduct of the study. The purpose, procedures, and rights of all the occupational therapists were explained to them about the research. All participants signed an informed consent form. The online checklist was distributed to the occupational therapists who participated in the study through email and messaging. The collection of the data took place following the completion of 9-10 months of service in the trauma center by therapists. The answers were automatically gathered and saved safely on Google Forms. The data were taken out and examined through descriptive statistics.

Data Analysis

The data collected was analyzed using descriptive statistics. The frequency of frequency and the perceived effect were used to rank environmental facilitators and barriers. Distribution of patients in wards was tabulated, and facilitators and barriers were visualized using bar graphs.

Ethical Considerations

The purpose and procedures of the study were explained to all occupational therapists before they participated in it. The participation was strictly voluntary, and participants were not penalized if they wanted to withdraw at any time. The study was conducted with the principle of confidentiality and anonymity, and no identifying information was gathered or given.

Results

The study was conducted in a semi-public trauma facility in Sindh, Pakistan, and 10 female occupational therapists were involved in five separate specialized wards. A total of 90 patients who were provided with occupational therapy services were used to collect data within the study period. The semi-public trauma center had 5 specialized wards, which provided different patient groups with different trauma presentation and surgical requirements.

The wards with the highest number of patients (46.6% summed up) were the Neurosurgery wards (both male and female), then Orthopedic and Plastic Surgery wards (20 and 20, respectively), and the Vascular Surgery ward (13.3). This distribution indicates the emphasis of the trauma center on the cases of neurosurgical and orthopedic traumas (Table 1).

Table 1. Demographic Characteristics	
No. of Therapists	**10**
Gender	**Female**
No. of Wards	**5**
Orthopedic Surgery	18
Neurosurgery (Female)	22
Neurosurgery (Male)	20
Plastic Surgery	18
Vascular Surgery	12
No. of Patients	**90**

Environmental Facilitators

The digital checklist revealed that there were major environmental facilitators that positively impacted occupational therapy practice in the trauma center. These facilitators were ordered in terms of highest to lowest impact according to the responses of therapists (Figure 1).

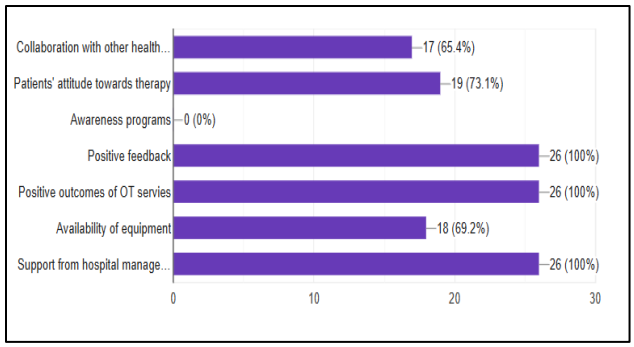

Fig.1 showing environmental facilitators

Environmental Barriers

It was found that there were five major environmental obstacles that prevented the delivery of effective. occupational therapy services. The following barriers were prioritized as the most important to the least important (Figure 2).

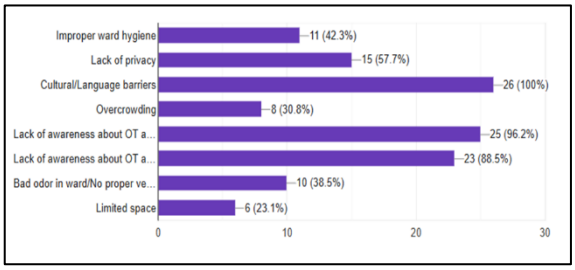

Fig.2 showing environmental barriers

Poor hygiene in the wards became the greatest impediment, not only to patient comfort but also to therapy provision. The close behind it was overcrowding and a lack of privacy which made it difficult to conduct a proper assessment and interventions. Poor understanding of the role of occupational therapy by the stakeholders limited patient referral and inter-professional cooperation. Although the language barriers were also observed, they were ranked as the least among the key barriers and yet they affected efficacious communication with some populations of patients. The findings indicate that although there are real environmental issues in the introduction of occupational therapy services in the acute trauma environment in Pakistan, important enabling factors, with the main one being the support of the management and patient receptiveness, offers a platform on which the services can develop and grow.

Discussion

This study explored environmental factors affecting occupational therapy integration in a semi-public trauma center in Sindh, Pakistan. Findings reveal that while occupational therapy services are gaining recognition in acute trauma care, implementation is significantly influenced by both facilitating and hindering environmental factors.

Management support emerged as the most significant facilitating factor. Administrative encouragement empowered occupational therapists to engage actively in patient care while establishing professional identity among nursing staff and other healthcare professionals.[10,18] This aligns with implementation

science literature emphasizing organizational support as fundamental for introducing new healthcare services.[13,19] Research in similar settings demonstrates that leadership commitment significantly predicts successful integration of rehabilitation services in acute care environments.[20]

In resource-constrained settings like Pakistan, where rehabilitation services have been viewed as supplementary, administrative endorsement becomes critical.[16] Management support extended beyond verbal encouragement to include the provision of basic resources, facilitation of ward access, and recognition of occupational therapy as a legitimate healthcare service. Future efforts should prioritize securing administrative buy-in through evidence-based presentations and clear communication of benefits, including reduced hospital stays and improved functional outcomes.[21]

Positive patient attitudes and favorable feedback emerged as significant facilitators. Once patients received education about occupational therapy's purpose and benefits, their cooperation improved substantially, leading to better functional outcomes.[22] This underscores the client-centered nature of occupational therapy and the importance of patient motivation for successful rehabilitation. Studies confirm that patient understanding of rehabilitation goals directly correlates with engagement levels and treatment adherence.[23] Occupational therapy requires patients to engage meaningfully in goal-setting and intervention activities. When patients understand how occupational therapy addresses their functional limitations, they become active partners rather than passive recipients of care. Therapists must allocate sufficient time for patient and family education, using culturally appropriate communication methods. Involving family members may further enhance engagement in collectivist cultures like Pakistan, where family input significantly influences healthcare decisions. While inter-professional collaboration was identified as a facilitator, it ranked lower than management support and patient attitudes, suggesting need for substantial improvement. Previous research documents similar challenges, with occupational therapists facing role ambiguity and limited awareness among healthcare professionals.[22-24] International studies indicate that role clarity and mutual understanding among team members are critical for effective interprofessional practice in acute settings.[25]

Limited collaboration stems from multiple factors. Occupational therapy is relatively new in Pakistan's trauma settings, introduced formally only recently.16 Healthcare professionals may have a limited understanding of occupational therapy's scope. Traditional medical hierarchies may also marginalize allied health professionals.[17]

Healthcare professionals recognizing occupational therapy's value appreciate its contribution to functional independence and discharge planning.[10] However, limited awareness results in fewer referrals. This highlights the need for advocacy sessions, inter-professional education programs, and case conferences demonstrating occupational therapy's unique contributions.[15] Improving collaboration requires incorporating occupational therapy education into medical curricula, establishing formal referral pathways, and creating inter-professional practice guidelines.[11,24]

Resource accessibility significantly impacted practice, emerging as a primary barrier. Although basic equipment was available, therapists frequently improvised using patients' belongings, reflecting professional adaptability and resource constraints in LMIC settings.[11] Additional barriers—overcrowding, poor hygiene, and lack of privacy—restricted therapists' ability to conduct comprehensive assessments and interventions.[13-14] These infrastructural challenges reflect broader systemic issues in public healthcare facilities. Multiple caregivers, while culturally normative and beneficial for family education, created privacy concerns during therapy sessions. Patients may feel uncomfortable performing personal care tasks before numerous observers, compromising assessment accuracy.

Poor ward hygiene presents infection control concerns, particularly for post-surgical trauma patients. Addressing infrastructural barriers requires systemic healthcare reforms, though therapists can advocate for improved conditions and implement infection control measures

within their practice. Language barriers and limited awareness emerged as significant challenges. Pakistan's linguistic diversity creates communication difficulties, though many therapists in Sindh speak Urdu and Sindhi. Limited awareness about occupational therapy among patients, families, and healthcare professionals represents a substantial barriers.[16] Many have never encountered occupational therapy services and may confuse it with physiotherapy.

Addressing awareness barriers requires developing culturally appropriate patient education materials, conducting community campaigns, providing inter-professional education, and demonstrating occupational therapy's value through outcome measurement.[11-14] As occupational therapy becomes more established, awareness will likely increase through word-of-mouth and professional networks.

Future Practice Implications

These results can play a significant role in laying out the services in such trauma centers in LMICs. Therapists should be valued professionals in terms of outcomes measurement and should train stakeholders continuously. Nevertheless, with great difficulties, occupational therapy may be successfully applied in acute trauma settings in resource-limited settings. The strategies of tackling the barriers with specific interventions, systemic advocacy, and inter-professional cooperation will lead to an improved delivery of services and functional outcomes of trauma patients in Pakistan and other similar places worldwide.

Conclusion

This study has shown that the concept of integrating occupational therapy services in acute trauma environments is a special issue in low and middle-income countries, especially when it comes to the environmental aspect. Occupational therapy services are gaining momentum and acceptance within the Pakistani trauma care environment despite the issues of resources, infrastructural issues, and lack of awareness. Support of the management and positive patient feedback has become critical facilitators of service establishment and delivery.

The results demonstrate the significance of systemic intervention and advocacy to mitigate environmental obstacles and address overcrowding, hygiene problems, privacy concerns, limited awareness, etc. Service integration will be enhanced by further encouragement of inter-professional collaboration by educating and showing the special value of occupational therapy.

This study offers preliminary information to the upcoming occupational therapists determining their services within the same resource constrained environment. With an understanding of and proactive measures on the environmental facilitators and barriers, healthcare administrators and rehabilitation professionals can establish measures to streamline the occupational therapy service delivery, which will eventually lead to better functional outcomes and living conditions among trauma patients in LMICs.

The future research must focus on long-term results of occupational therapy in trauma facilities, cost-effectiveness studies, and the methods of sustainable expansion of services in various healthcare settings in Pakistan and other relevant countries.

Author Contributions

Hiba Khan: Study conception and design, data collection, data analysis, and manuscript preparation.

Shaikh Maria Tabassum: Literature review, participant recruitment, data collection, and manuscript review.

Syeda Arfa Fatima: Data analysis, interpretation of results, and critical manuscript revision.

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Conflict of Interest

The authors declare no conflicts of interest in relation to this research study.

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None

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