

# Establishing an Acute Care Occupational Therapy in Pakistan: An Innovative and Reformed Practice as one of the Dynamics to Reduce Functional Disability

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## Abstract

**Introduction:** Patients admitted to acute care has decrease functional independence and are unable to regain their healthy lifestyle functional level. It is an experimental study that promoted the reflection of occupational therapy on the functional capacity of patients at time of admission, discharge and follow-up.

**Methodology:** A quasi experimental study was conducted on sample of 384 patients from major hospitals of Karachi to evaluate the efficacy of occupational therapy on the functional recovery. Functional Independence Measurement (FIM) score was applied to evaluate the functional status at the time of admission, discharge and follow up.

**Result:** Patients receiving occupational therapy at the acute care set up showed significant recovery in functional independence at the domain of self-care, sphincter control, transfer, locomotion, communication and social cognition.

**Conclusion:** The service of Occupational Therapy should be an integral part of multidisciplinary team for early functional recovery.

**Keywords:** Functional independence measurement • Acute care • Sphincter • Social cognition • Multidisciplinary

## Introduction

Occupational Therapists (OTs) help their clients recover health and quality of life by facilitating involvement in meaningful occupations or work. OT defines occupations as anything/ activities that occupy ones time. The role of occupational therapy due to lack of professional recognition is vague and unrecognized which indicates that the perspective of health definition is unmet while treating the patients [1]. The Patients who are admitted for short period to an acute care setup do have functional loss due to their critical condition at that particular time [2]. These patients come across with sudden decline in their functional status and medical condition; the cause may be a traumatic event or a progressive disease or any new condition. Such as a road traffic accident leading to complex fracture and inability to perform activities of daily living or a pregnant woman not capable to drive due to inability to reach accelerator or a stroke survivor unable to accomplish his daily task and perform independently. The primary purpose of acute care is to stabilize the patient's medical status and address life-threatening issues [3]. Later the second most essential goal is to maintain or improve the quality of life by enhancing functional status and providing safety to avoid physical, social and cognitive complications, these are the domains of occupational therapy [3].

Occupational therapists get the most variety of roles as professional at acute care not only conventional therapist but also an advocator, counsellor,

vocational therapist and explore community rehabilitation [4]. Occupational therapy approaches the client or the patient as a whole phenomenon of mind and body, this holistic approach works on Maslow's hierarchy of need. It focuses on client and formulates individual therapy plans based on occupations to improve patient's activity level in the rehabilitation process [5]. For example, if sitting up in bed for short periods is suggested by the physician, the occupational therapist will establish customized motivators to do so, such as eating a meal, doing basic Activities of daily living and general everyday jobs as per age, gender and social role related. There are many conditions that may be varied person to person. Even before discharge through support groups with family or the care taker are conducted to train them for the management of patient and meeting the special needs of the loved ones at home [6].

Many of the studies have been carried out at west to rule out the efficacy of early intervention, one of them presented Occupational Therapy as the only category that reduces the hospital readmission and improve the functional capability of the admitted patients. Since it facilitated early mobilization, promoted customized functional activity that inhibit further decline. Besides coordinating with other care, it also includes transition and discharge planning to make sure safety and management of the patient at home. Fall risk assessment and management is one of the total quality care approach. Though it overlaps with nursing domain but adaptation and modification is always suggested by the Occupational therapist after the evaluation of fall risk of the patients and home modification assessment [7]. It doesn't only involve adaptation but also recommendation of best suited adapted devices to promote maximum functional level and promote participation.

The studies have shown that acute care rehabilitation (physiotherapy, occupational therapy and speech therapy) may improve the quality and functional health of the patient. Hospitalization-associated disability is regrettably frequent occurrence with significant consequences for patients and caregivers. Impaired functional recovery, and planning for discharge, home with the support needed to harmonize a patient's functional capacity, may reduce the frequency of hospitalization related disability. As per one of the study 35% of the patients after discharge were readmitted due to fall injury mainly hip fracture and 5% died due to fall incident [7]. The model of acute care may not only decrease hospitalization-associated disability but also reduces the managing challenges for special need at home. Thus it should be a high concern for hospitals and clinicians to promote acute care occupational therapy at the Multidisciplinary care approach. Medical rehabilitation in the acute care setting is a challenging yet necessary for high quality medical care. Occupational therapy assessment Handicap Assessment and Resource Tool (HART) may clinically assist in admission decision for old age people due to inability of managing them at home. Geriatric patients are generally overlooked for the utilization of occupational therapy services [8].

Occupational therapist also work as developmental screener at primary health care of acute care promoting education and awareness among mothers regarding developmental milestone and the challenges of motherhood in the era of technology [9]. In Pakistan many of researches have been conducted that concluded lack of awareness, education and postnatal care is one of the reason for the high risk factor of infant mortality and negligence towards sensory, cognitive and motor development of children [10]. Acute care occupational therapy may contribute in promotion of pre and post natal rehabilitation [11]. More over women after menopause are not guided enough and are unaware of physical and psychiatric problems that may affect the quality of life (QoL). Women admitted in acute care obstetric ward mostly need to attended educational or awareness session [12]. Regarding the changes in their body since they spend 1/3 of their life in this phase [13]. Variety of studies been conducted that emphasize on need of mass awareness on the issues like disability, infant care, women health, children

sensory, cognitive and motor development [14]. Though Pakistan is an Islamic country but only 27% of women promote breast feed, around 12% mothers are educated for the developmental milestone through any professional or pre and post natal classes or electronic media [15]. There is an intense need to utilize the occupational therapy in the advocacy and promotion of awareness in this specific area. Family sessions, support groups and educational material to promote family centered approach can be adapted as per the cultural requirement with the involvement of occupational therapy at primary health care of the acute care [16]. It will provide the preventive measures to overcome the issues due to ignorance and treatment centered approach. The acute care model of occupational therapy does impact the functional recovery and reduces the threat of readmission [17]. Since the discharge of patient is ordered only when the functional independence is scored higher. The senior citizens are usually admitted with pre admission decline in the functional position which may be associated to aging [18,19]. They must be guided and trained for energy conservation, alternate mode of performing every day task in order to have productive aging. The acute care model of occupational therapy provides all the support for independence functional performance in daily life. The transition of care after discharge whether it is home or an alternative residential care, if looked poorly may be harmful to health and increase the financial burden too [20]. This shift of care is one of the domain of occupational therapy that promotes safety, energy conservation and functional independence while keeping the culture of and individual intact [20-24]. At present the acute care rehab practices requires amendment to make the transition from hospital to home and later to community much smoother and safer. It must promote physical, psychosocial and occupational alternative facilitate the personal activities. It's always the patient who deals with the cost of health events for the rest of their remaining life rather than the health professional. Thus it is important to create strategies and build skills that assist in coping mechanism and learning the limits to develop alternative modes [25]. The improvement in the collaboration between practitioners, researchers and family must start from acute care discharge to overcome wide range of health impairment followed after hospital discharge [25-28].

The introduction of quality improvement model from the intensive care unit or acute care hospitalization will also cut down the length of stay [29]. This will involve the complete collaboration of acute care rehab team to motivate the patient to struggle for reintegration of previous life role quicker.

The researches that are been conducted to rule out the functional recovery pace are not from Pakistan since very few offers the service of occupational therapy thus the need of early functional recovery is not yet identified. This study is specifically done for the acute care service where the patients are receiving occupational therapy and do get functional recovery assessment at the time of admission and discharge [30]. They undergo an occupational therapy service for the functional regain. In the study we compare the difference in functional independence measurement at the time of admission, discharge and follow up to find the efficacy of early intervention of occupational therapy at the acute care setting. This study promoted acute care occupational therapy to reduce functional disability.

## Materials and Methods

**Study Design:** Quasi experimental.

**Setting:** Tertiary care hospitals.

**Duration of study:** It is comprised of 6 months after the approval of synopsis.

**Sampling Technique:** Convenience sampling.

**Sample size:** It is calculated by EPI software for a population of one million at confidence interval of 95% with 5% level of significance.

384 patients

Sample size  $n = [DEFF * Np (1-p)] / [(d2/Z21-\alpha/2*(N-1)+p*(1-p)]$

**Target Population:** Acute care patients receiving occupational therapy and following in outpatient department.

**Inclusion criteria:** Acute care patients with GCS level minimum 2 at eye opening, verbal response and motor response.

**Exclusion criteria:** Patients enrolled at clinics and rehabilitation unit six months after the incident of injury or admission to hospital.

**Ethical consideration:** All participants gave their written consent regarding the use of assessment scores and images for research purpose.

**Data Collection Tool:** Functional independence measure scale (FIMS), it evaluates the functional class of a person on the basis of level of assistance requires by an individual (sup figure). The scale consists of 18 items, therapist assess the functional ability in six areas comprise of self-care, continence, mobility, transfers, communication and cognition. Each of the item is score between 1 that is complete dependence or assistance to 7 indicating total independence in functional activities. It is score at the time of initial assessment or start of therapy than discharge and later at follow up. The difference in score over all informs about the functional independence level and individual comparative score at different intervals reflects the improvement or decline in the ability status at each item. Following six self-care activities is the main concern at the acute care.

- Feeding
- Grooming
- Bathing
- Upper Body Dressing
- Lower Body Dressing
- Toileting

### Data Collection Procedure

The data was collected by the therapist during the occupational therapy assessment keeping the ethical consideration intact. Initially patients were assessed at the time of referral at the acute care for their functional independence level later they were provided occupational therapy as per their individual need and before the discharge the FIM score was recorded again. There are many other initial assessments too as per the individual need, but this study is only focusing on the FIM Scores and its improvement after Occupational therapy intervention. They were provided with a home discharge plan for safety measurement and functional assistance at the time of discharge that need to be followed till their follow-up visit at outpatient department of the respective hospital. On average the stay of patients was for 8 to 15 days. Whereas number of session vary from one to two per day depending on the need of the admitted patients. They were reassessed on the FIM Score at the first day of follow-up. The difference of FIM score between the discharge and follow-up visit indicate the performance level at follow up session.

During the scoring all the domains of the FIMs (self-care, sphincter control, transfer, loco motion, communication, and social cognition) were filled and the cumulative score of FIM was calculated.

### Data Analysis Procedure

**SPSS version 20** software is applied, ANOVA is applied to analyze the differences among the group means in the samples; it is one way repeated measure ANOVA since the comparison of means is within the subject variable. It gives pair wise comparison of the subject groups. Line graph is plotted in the reading to visualize the difference in the performance level of the function within the same subject. Pie chart demonstrates the demographic information regarding the gender of the patients and it is also plotted to rule out the major domains of specialty for occupational therapy at tertiary care hospital.

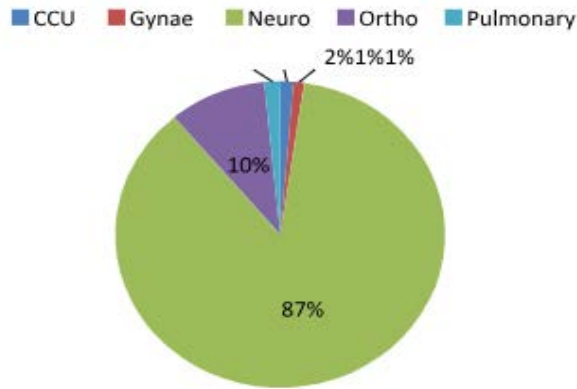
## Result

The study was conducted among the acute care patients as per the calculated sample size of 384 patients across the hospital admitted in different specialties. Figures 1-3 indicates the domain of the occupational therapy utilization for functional recovery at the hospital.

### Major areas of acute care occupational therapy

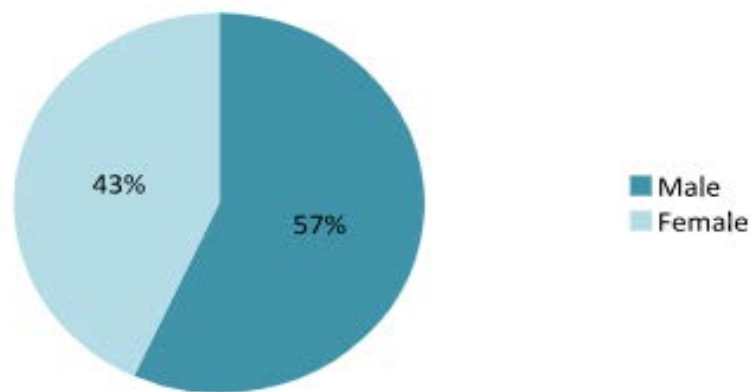
The pie chart illustrate that 87% of the patients referred for functional regaining purpose are from neurology that covers the major chunk of the patients. Whereas the least functional recovery referrals received for

### MAJOR AREAS OF OCCUPATIONAL THERAPY AT ACUTE CARE

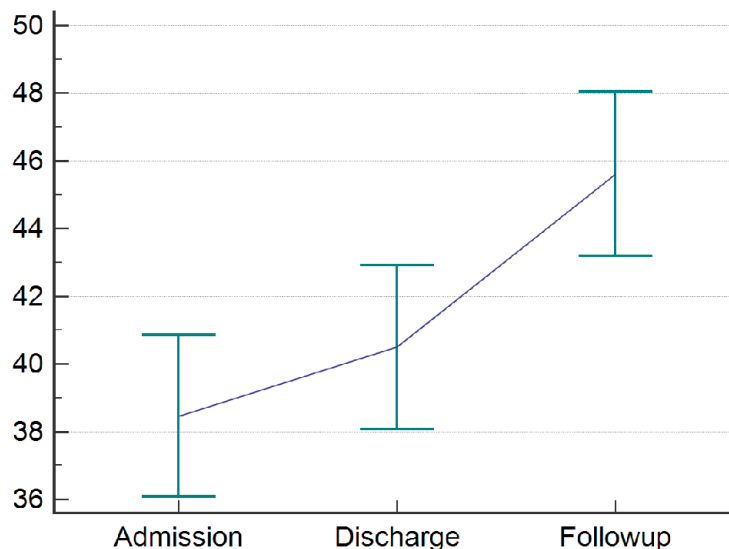


**Figure 1.** Majority of the occupational therapy services for functional recovery is used at neurology patients 87%, orthopedic service is second at utilizing the service for functional regain though it comprise 10% of the patients. 1% to 2% patients are referred for functional recovery from pulmonary, cardiac and gynecology. The other information drawn from demographic data is the dominance of gender for functional recovery referral, which is indicated in figure 2. Male gender for the functional recovery at tertiary care hospital is leading from 7% than female. Only 43% of female received the functional recovery referrals for occupational therapy where as 57% were male.

### Demographic Information



**Figure 2.** The FIM scores (cumulative of all domains) mean at the time of admission, discharge and follow up is shown in table 1, with standard error of 1.2 at 95% confident interval within the subject factor. The table 1 shows a continuous increase in the mean of the FIM score at the time of admission, discharge and follow-up. There is a difference of 2.06 in the mean and it increases the FIM score of the discharge from the admission. It indicated the improvement in the functional performance of the patient. Moreover, it increases later at follow up from a difference of 5.1.



**Figure 3.** The figure 3 is a line graph, X- Axis show the time of FIM scoring which is admission, discharge and follow up whereas at Y- axis the mean score of the FIM is indicated. There is a continuous gradual increase in the functional independence of the patient from the time of admission to discharge whereas; there is a bit faster increase after discharge till follow up. On average patients stayed at hospital 11 to 12 days as mentioned earlier in the methodology, it showed less FIM gain as compare to FIM gain between discharge and follow up.

**Table 1:** Discharge and follow up.

Within the subject factors			
Factors	Mean	Std. Error	95%CI
Admission	38.46	1.21	36.04 to 40.82
Discharge	40.50	1.23	38.07 to 42.92
Follow up	45.62	1.23	43.019 to 48.04

P < 0.05 and statistically highly significant at 95% confidence interval, it indicates that we may accept the hypothesis.

**Table 2:** The table 2 shows Pair Wise Comparison along with the p-value.

Pair Wise Comparison					
Factors		Mean difference	Std. Error	Pa	95% Cla
Admission-	Discharge	-2.03	0.674	0.0080	-3.660 to -0.417
	Follow up	-7.15	0.789	<0.0001	-9.055 to -5.260
Discharge	Admission	2.03	0.67	0.0080	0.417 to 3.660
	Follow up	-5.11	0.47	<0.0001	-6.269 to -3.968
Follow up	Admission	7.15	0.78	<0.0001	5.260 to 9.055
	Discharge	5.11	0.47	<0.0001	3.968 to 6.269

occupational therapy is from cardiology and pulmonary, only 1% from each of them. The orthopedic referral for functional recovery stands next to neurology and it makes 10% of the total sample. The women rehabilitation service of occupational therapy for functional recovery exceed from cardiology and pulmonary from 1% and it makes 2% of the total sample size (Tables 1 and 2).

## Discussion

The demographic data may be used to increase the referral turn over from other specialty too where the service is minimum used. One of the study reflected that Patient has been reporting lack of participation in daily activities of life due to chronic pulmonary obstetric disorder thus getting readmitted again and again but never get trained for functional recovery during their acute care stay 24.

We may also focus on the individual segment of FIM, such as self-help skills, cognitive, hygiene and toileting, transfer and locomotion. It will enhance our understanding of the pace of functional recovery in each segment can relate it to the disease prognosis too. Thus it may indicate that Stroke has fastest functional recovery over the cardiac or vice versa.

If the domains are focused separately, there is a possibility of more improvement and versatile intervention plan. The result concluded that early intervention of occupational therapy at acute care is a modern and improved practice for functional recovery. Though this study is very significant in order to establish occupational therapy in many other hospitals too throughout the country and reduce the burden of disability due to illness. Similarly, it promotes the awareness of role of occupational therapy at acute care.

In Japan, a study was conducted to explore the efficacy of tailored pulmonary rehabilitation program and occupational therapy that signify improved survival rate of patients by modifying the life threatening conditions. Thus acute care occupational therapy may promote the survival rate after discharge along with functional recovery.

Stroke units that combine good medical and nursing care with task oriented intense training in an environment that provides confidence, stimulation and motivation significantly improve outcome.

The study may also use for the comparison of functional recovery pace among men and women. Then we look into the factors that promote motivation and desire for functional regaining in different genders.

## Conclusion

This study provided significant improvement in the functional recovery of the acute care patients referred to occupational therapy. The study concluded that acute care occupational therapy will reduce functional disability among the admitted patients. However it is advisable to conduct follow up for complete functional independence.

## References

- Wilding, C. "Raising awareness of hegemony in occupational therapy: The value of action research for improving practice." *Aust Occup Ther J* 58.4 (2011): 293-9.
- Doig, E., et al. "Qualitative exploration of a client-centered, goal-directed approach to community-based occupational therapy for adults with traumatic brain injury." *Am Occup Ther* 63.5 (2009): 1.
- Eyres L., & Unsworth, C.A. "Occupational therapy in acute hospitals: The effectiveness of a pilot program to maintain occupational performance in older clients". *Aust Occup Ther J* 52.3 (2005): 218-24.
- Schweickert, W.D., et al. "Early physical and occupational therapy in mechanically ventilated, critically ill patients: a randomized controlled trial". *Lancet* (London, England). 30.373 (2009): 1874-82.
- Wressle, E., et al. "The Canadian Occupational Performance Measure as an outcome measure and team tool in a day treatment programme". *Disability and rehabilitation* 1.25 (2003): 497-506.
- Mizuochi, K. "Rehabilitation Medicine in the Acute Care Setting in Japan". *Japan Med Assoc J* 55.3 (2012): 246-52.
- Barbara, A., & Whiteford, G. "Clinical utility of the Handicap Assessment and Resource Tool: An investigation of its use with the aged people in hospital". *Aust Occup Ther J* 52.1 (2005): 17-25.
- Al-Aama, T. "Falls in the elderly: spectrum and prevention". *Can Fam Physician* 57.7 (2011): 771-6.
- Rydz, D., et al. "Screening for developmental delay in the setting of a community pediatric clinic: a prospective assessment of parent-report questionnaires". *Pediatrics* 118.4 (2006): e1178-86.
- Parveen, N., et al. "Socio-demographic and Reproductive Factors Affecting Utilization of Postnatal Services among Women in District Rahim Yar Khan". *J Fatima Jinnah Medi Uni* 11.4: (2017).
- Vergara, E., et al. "Specialized knowledge and skills for occupational therapy practice in the neonatal intensive care unit". *The Am J Occup Ther* 60.6 (2006): 659.
- Webber, G., et al. "Community member and policy maker priorities in improving maternal health in rural Tanzania". *Inter J Gynec & Obs* 141.1 (2018): 80-4.
- Changulani, R., & Trivedi, A. "A community based study of symptom profile in perimenopausal and menopausal women in india". *Inter J sci res* 7.6 (2018): 27
- Aly, Z., et al. "Missed opportunities in surveillance and screening systems to detect developmental delay: A developing country perspective". *Brain and development*. 32.2 (2010): 90-7.
- Asim, M., et al. "Impacts of socio-cultural values on children health: a systematic literature review". *Rawal Medi J* 42.4 (2017): 554-8.
- Samal, J. "Assessing the Family Centered Maternity Care Practices of a Community Health Center in Chhattisgarh, India". *Asian J Pharm* 10.3(2016): 10.

17. Hoyer, E.H., et al. "Association of impaired functional status at hospital discharge and subsequent rehospitalization". *Journal of hospital medicine* 9.5 (2014): 277-82.
18. Brown, R.T., et al. "Functional Disability in Late Middle Aged and Older Adults Admitted to a Safety Net Hospital". *J Am Geriatrics Soci* 62.11 (2014): 2056-63.
19. Improving Care Transitions Better coordination of patient transfers among care sites and the community could save money and improve the quality of care. (2012): 10.1377/hpb20120913.327236.
20. <https://www.aota.org/Practice/Children-Youth/Transitions.aspx>
21. Gage, M., et al. "Understanding the transition to community living after discharge from an acute care hospital: An exploratory study". *Am J Occup Ther* 51.2 (1997): 96-103.
22. Punwar, A.J., et al. "Improving long-term outcomes after discharge from intensive care unit: report from a stakeholders' conference". *Critical care med* 40.2 (2012): 502-9.
23. Mouradian, L.E., & Als, H. "The influence of neonatal intensive care unit caregiving practices on motor functioning of preterm infants". *American Journal of Occupational Therapy* 48.6(1994): 527-33.
24. Needham, D.M., & Korupolu, R. "Rehabilitation quality improvement in an intensive care unit setting: implementation of a quality improvement model". *Topics in stroke rehabilitation*. 17.4 (2010): 271-81.
25. Kripalani, S., et al. "Promoting effective transitions of care at hospital discharge: a review of key issues for hospitalists". *Journal of hospital medicine* 2.5 (2007): 314-23.
26. Landefeld, C.S., et al. "A randomized trial of care in a hospital medical unit especially designed to improve the functional outcomes of acutely ill older patients". *New England Journal of Medicine* 332.20 (1995): 1338-44.
27. Crennan, M., & MacRae, A. "Occupational therapy discharge assessment of elderly patients from acute care hospitals". *Physical & Occupational Therapy in Geriatrics*. 28.1 (2010): 33-43.
28. Atwal, A., et al. "Risks with older adults in acute care settings: UK occupational therapists' and physiotherapists' perceptions of risks associated with discharge and professional practice". *Scandinavian Journal of caring sciences* 26.2 (2012): 381-93.
29. Maekura, R., et al. "Personalized pulmonary rehabilitation and occupational therapy based on cardiopulmonary exercise testing for patients with advanced chronic obstructive pulmonary disease". *International journal of chronic obstructive pulmonary disease* 10 (2015): 1787.
30. Johansson, B.B. "Current trends in stroke rehabilitation. A review with focus on brain plasticity". *Acta Neurologica Scandinavica* 123.3 (2011): 147-59.