

Performance-Based Cognitive Assessment Implementation in Acute Care: A Feasibility Study

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Abstract

Patients who have experienced neurological events often demonstrate independence in activities of daily living, including functional mobility, and are discharged from occupational therapy (OT) services. Although such patients are independent in some areas, they may demonstrate impairments in instrumental activities of daily living because of undiscovered to mild cognitive impairments. The objective of the study was to determine the feasibility of implementing two subtests (medication management and bill paying) of the Executive Function Performance Test (EFPT) and determine the ability to detect cognitive impairments in the acute care hospital setting. Two EFPT subtests were administered to a non-randomized cohort of 50 patients during an acute care hospitalization following neurological events. The two subtests were administered together in an average of 17 minutes, and cognitive impairments were detected in 49 of 50 patients (98%). Therapy discharge recommendations were changed after assessment to address functional cognitive impairments. The EFPT can be administered during the acute phase of recovery and provide information to support more robust and functional cognition-related discharge recommendations.

Keywords: Cognition; functional cognition; acute care hospital; performance-based cognitive assessment

Introduction

Patients who experience medical or neurological events often demonstrate independence with activities of daily living (ADLs), including functional mobility, upon initial evaluation and are subsequently discharged from occupational therapy (OT) services (Ballard et al., 2012; Choi et al., 2019). Although patients may demonstrate independence with ADLs, independence with more challenging tasks of instrumental activities of daily living (IADLs) may be impaired. IADLs that include, but are not limited to, meal preparation, medication management, financial management, and community mobility skills are necessary for independent living and require intact cognitive functions for successful performance. Those with a cognitive function impairment may not recognize impairments or the potential impact of impairments on their ability to perform ADLs and IADLs safely and independently (Morrison et al., 2015). Patients who do recognize impairments may potentially restrict engagement in preferred occupations, which can lead to decreased quality of life. Babulal et al. (2015) found that among 41 patients who had experienced stroke, 50% reported that cognitive impairments profoundly affected their daily activities, and 40% had documented cognitive function impairments. Similarly, Lipskaya-Velikovsky et al. (2018) reported that 19% to 75% of patients with acute stroke had cognitive function impairments, and a significant portion of those patients experienced impairment years after their initial injuries. Among patients with brain injuries, cognitive impairment and limitations in IADLs may lead to poor functional outcomes and result in hospital readmission. Evidence suggests that patients with mild cognitive impairment have a 17% greater rate of hospitalization than those with normal cognition (Callahan et al., 2015).

Cognitive functions are high-level abilities that allow people to design, plan, and execute goals successfully. Executive functions, which control and coordinate other cognitive abilities and behaviors include the skills of planning, decision-making, judgment, safety, and self-correction and are considered essential for successful performance of ADLs and IADLs (Baum et al., 2008; Johnston et al., 2019). Functional cognition includes the contexts of person and environment within which activities are performed daily (Al-Heizan et al., 2020). Functional cognition is defined as “the ability to use and integrate thinking and performance skills to accomplish complex every day activities” (Giles et al., 2017, p. 1). Wesson et al. (2016) noted that functional cognition is key to IADLs and to understanding whether a patient can safely and effectively complete IADLs (e.g., food preparation, community mobility skills, medication, or financial management). Assessments of functional cognition measure executive functioning abilities in real-life situations and allow clinicians to assess each patient’s level of independence with more cognitively taxing tasks necessary for IADLs. Understanding whether a patient can safely and effectively complete IADLs (e.g., medication management) is necessary to determine self-neglect potential and to guide discharge recommendations, including the need for either patient or caregiver training (Giles et al., 2017).

OT practitioners are well-positioned to assess cognitive impairments, specifically those related to medication management. Specific OT assessment of patients’ medication management abilities, with subsequent intervention to improve patient independence, has assisted in reducing hospital readmissions (Bradley et al., 2013). The Improving Medicare Post-Acute Care Transformation (IMPACT) Act of 2014

highlights the need to prioritize cognition for patients across post-acute settings to ensure positive outcomes (Giles et al., 2017; United States House of Representatives, 2014). Identifying cognitive impairments in the acute care hospital setting would support IMPACT initiatives. Detecting functional cognitive impairment is important in acute care hospital patients because they have yet to return to their communities where they use functional cognitive skills. The 2016 revision of the Current Procedural Terminology codes for OT recognizes cognition as a reimbursable practice area (American Medical Association, 2017). Although the role of OT in assessing cognition is supported in the literature, formal cognitive assessments are underused (Blattman & Stephenson, 2021; Burns & Neville, 2016). While the OT community consensus is that cognition is a valuable component of occupational performance and is important to investigate, OTs often rely on non-standardized cognitive screens or observations to determine cognitive status (Blattman & Stephenson, 2021; Burns & Neville, 2016).

OTs working in acute care have a unique role in discharge planning. Due to the acute care hospitals' environment and medical priorities, practitioners are often under time constraints to quickly evaluate and provide discharge recommendations on level of care or patient performance with daily occupations. These pressures may lead either to cognition not being prioritized or to the use of rapid non-standardized assessments (Blattman & Stephenson, 2021). One hospital campus-based study found that of responses by 28 OTs to a survey over a 6-month period, more than 80% of cognitive assessments were non-standardized versus 14% standardized (Blattman & Stephenson, 2021). OTs reported both the ease of administering cognitive screens and their limited ability to correlate results to predict ADL and IADL performance (Blattman &

Stephenson, 2021; Sansonetti & Hoffmann, 2013). Investigators (Blattman & Stephenson, 2021) found that in the acute hospital setting, OTs identify functional cognitive impairments but continue to use non-standardized means (i.e., observations of functional activities) to do so. This lack of standardized testing limits their ability to detect mild impairment in patients, which may have an important effect on patients' independent living and safety in performing IADLs (Bottari & Dawson, 2011; Sansonetti & Hoffmann, 2013).

A challenge with the overuse of non-standardized cognition evaluations is the lack of sensitivity to detect impairment in higher-level executive functions. The Saint Louis University Mental Status (SLUMS) Examination and the Montreal Cognitive Assessment (MoCA) are both valid and reliable screens (Nasreddine et al., 2005; Tariq et al., 2006). However, these screens cannot identify how cognitive impairments affect a person in real-life situations, and patients frequently perform well on cognitive screens but continue to display functional cognitive impairments that are not detected by these screens (Morrison et al., 2015).

Although evidence supports the use of performance-based functional cognitive assessments in the stroke population, few studies have determined the feasibility of using these assessments in the acute care hospital setting. Jekel and colleagues (2015) found that performance-based assessments were promising tools and advantageous in identifying group differences between patients with cognitive impairments versus controls. The feasibility of the performance-based assessment, the Executive Function Performance Test (EFPT), has not yet been assessed in the acute care hospital setting. The researchers had three objectives for this study, which include 1) feasibility in terms

of the time required to complete two EFPT subtests, 2) determine whether cognitive function impairments were detected, and 3) understand any effect on discharge recommendations from occupational therapy after administering EFPT subtests.

Methods

Design

This prospective cohort study included 50 participants from a single acute care hospital and was approved by the institutional review board of St. Joseph's Hospital and Medical Center, Phoenix, Arizona (IRB #PHXA-17-0021-71-21; initial approval date 6/27/2017), and a ceded review was approved by Northern Arizona University's institutional review board (IRB #1094592-1; initial approval date 7/20/2017). The study followed the protocol and standards set forth by the boards. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guidelines were followed. Over a five-week period, six OTs were trained to administer the EFPT. Training included watching video instruction on the administration and scoring of the EFPT, scoring a video of the EFPT administration, and administering the EFPT under supervision. After five successful administrations and scorings, the study's principal investigator (PI) (A.J.B.) designated the OT as competent to administer the EFPT to study participants.

Participants were recruited over 12 months by OTs who identified potential study participants. OT is a consultative service at the study hospital, with referral initiated by a prescribing provider. Patients found to be exhibiting signs of possible cognitive impairment upon initial OT evaluation, whether after a neurological event or any general diagnosis, were considered for study enrollment. Cognitive impairment can be

associated with a variety of diagnoses, and therefore non-neurological diagnoses were also included in an attempt to highlight the need to formally assess cognition with patients exhibiting impairments, irrespective of diagnosis. To be enrolled, participants were required to be ≥ 18 years old, score ≥ 21 on the SLUMS Examination, be a current acute care hospital patient, and be medically stable (defined by hospital parameters). Participants were excluded from the study if they were non-English speaking, unable to read or write, had a terminal diagnosis, scored < 21 on the SLUMS Examination, had aphasia, did not know how to use a checkbook, or had a documented chronic cognitive impairment or intellectual disability.

The SLUMS is routinely used by OTs and speech language pathologists at the study institution. A SLUMS score of ≥ 21 was selected as an inclusion criteria to screen for severe cognitive impairment. Timing of when the EFPT was administered to participants varied based on patient availability, medical stability, patient tolerance, and appropriateness for this cognitive assessment. Given multiple attributes that therapists cannot control in the hospital (e.g., timing of surgeries, treatments), researchers were unable to mandate a specific postadmission day for EFPT administration. However, the mean time from admission to EFPT administration was calculated. Informed consent was obtained from participants who met study criteria, and consent information was provided to each participant before EFPT administration.

Outcome Measures

The medication management and bill paying EFPT subtests were administered. Each has scores ranging from 0 to 25; a score of ≥ 1 indicates executive function impairment, and higher scores indicate more severe impairment. The subtests

represent typical tasks necessary for independent living and are deemed practical to implement at the hospital bedside. Each subtest assesses five areas of executive function: initiation, organization, sequencing, safety and judgment, and completion. Scores are based on what patients can do, not what they cannot do; thus, a hierarchical cueing system determines the amount and types of cues needed to successfully complete the task. Five cueing levels can be delivered, and they are scored as follows: 0=no cue required; 1=indirect verbal guidance; 2=gestural guidance; 3=direct verbal assistance; 4=physical assistance; and 5=do the task for the patient. A higher score reflects the need for more cueing and indicates a more significant executive function impairment. The highest level of cueing needed to successfully complete each executive functioning component is recorded and added to calculate the subtest score (Baum & Wolf, 2013; Wolf et al., 2010).

The EFPT subtests selected are reliable, valid, and demonstrate good internal consistency, construct validity, and criterion validity (Baum et al., 2008). The EFPT also has moderate to significant correlations with standard neuropsychological measures assessing working memory, verbal fluency, and attention (Baum et al., 2008). The bill paying subtest correlation with neuropsychological measures of executive functioning abilities makes it an appropriate subtest to administer in acute care hospitals (Wolf et al., 2010). Each individual subtest is scored and provides a rating of the patient on initiation, organization, sequencing, safety and judgment, and completion. Because not all subtests of the EFPT were administered, no total score was determined for study participants; however, each subtest can be used independently to evaluate executive functioning.

OT documentation of discharge recommendations was reviewed, and three specific data points of recommendations were recorded. Recommendation language was recorded as either present (yes) or not (no) by the PI: (1) reference to cognition in therapists' discharge recommendations; (2) reference to participants' cognitive impairment (e.g., stating a specific area of cognitive impairment, such as sequencing, or a general statement that cognition is impaired); and (3) statements identifying the participants' need for assistance to complete IADLs, which was included in the frequency count.

Data Collection

The SLUMS Examination was administered to all prospective study participants before study enrollment by any OT or speech therapist on staff. Following eligibility determination, informed consent was obtained, and the EFPT subtests were administered by study personnel. EFPT data were collected by six trained OTs and coded by the PI. A stopwatch was used to report the time needed for participants to complete each subtest, and time was started once participants began engaging in the activity and was stopped as soon as participants indicated they were finished or moved away from testing materials. Standard EFPT recording forms were used, which display each subtest step with the area of executive function in rows and the type of cue needed to complete each step in columns. The PI recorded participants' scores into a secure spreadsheet for analysis and interpretation. The documentation review was completed before EFPT use and after the EFPT was administered. The frequency of the three documentation data point ratings before and after EFPT use were compared to determine if using the EFPT expanded discharge recommendations to include specific

mention of cognitive impairments. The OTs were blinded to the study's purpose, but the PI was not blinded to the study participants, EFPT scores, or the study's purpose. Patient demographic data and information about discharge recommendations were obtained from the electronic medical record by the PI.

Data Analysis

Data are presented as mean (standard deviation [SD]). Cronbach alpha was used to determine the internal consistency of the two EFPT subtests. Excel 2013 (Microsoft Corp., Redmond, WA) and SPSS statistics software, version 26 (IBM, Armonk, NY) were used for data analysis.

Results

Patient Demographics

60 participants met the inclusion criteria over the 12-month study period and provided consent. Ten participants were excluded from final analyses: three were discharged before EFPT administration, three had a neurological change prior to study initiation, one was not administered the SLUMS before the EFPT, two did not meet the inclusion criteria, and one had a deviation from standardized administration of the EFPT. The final study cohort consisted of 50 participants with neurological and non-neurological diagnoses (Table 1). Non-neurological diagnoses included cardiovascular disease, rhabdomyolysis, and urinary tract infection. Although individual SLUMS scores are not reported in the tables, all participants met the inclusion criteria and scored in either the "mild neurocognitive dysfunction" or "normal" range on this cognitive screen. Of the 50 participants, 26% (n=13) scored in the normal range (27–30 points). Of those 13 participants, 12 demonstrated impairments on at least one subtest of the EFPT.

Table 1*Demographic Characteristics*

Characteristic	Value (n=50)
Age, mean (SD), y	60.0 (15.3)
Sex	
Male	23 (46)
Female	27 (54)
Diagnosis	
Stroke	18 (36)
Tumor	11 (22)
Subdural hematoma	8 (16)
Other neurological	8 (16)
Non-neurological	5 (10)

Note. Data are presented as number (%) of participants unless otherwise indicated.
Abbreviation: SD, standard deviation.

EFPT Administration and Results

Participants were administered two subtests of the EFPT at a mean (SD) of 5.7 (3.8) days after their hospital admission date; the earliest time of administration was the same day as their admission date and the latest was day 14 (Table 2). Cognitive impairments were detected on an EFPT subtest in 49 of 50 participants (98%). Only two participants (4%) demonstrated cognitive impairment on the bill paying but not the medication management subtest, and only four participants (8%) demonstrated cognitive impairment on the medication management but not the bill paying subtest (Table 2).

Table 2*Discharge Recommendations after EFPT Subtest Administration*

Variable	Result (n=50)
Time from admission to EFPT administration, days	
Mean (SD)	5.7 (3.8)
Minimum, maximum	1, 14
No. pt. demonstrating cognitive impairment	
On either subtest	49 (98)
On BP but not MM subtest	2 (4)
On MM but not BP subtest	4 (8)
OT's discharge recommendations addressed cognition	
Before EFPT administration	12 (24)
After EFPT administration	31 (62)
Change in OT's discharge recommendations	
No—recommendations remained the same	21 (42)
Yes—more cognition recommendations made	27 (54)
Yes—fewer cognition recommendations made	2 (4)

Note. Data are shown as number (%) of participants unless otherwise indicated.
Abbreviations: BP, bill paying; EFPT, Executive Function Performance Test; MM, medication management; OT, occupational therapist; SD, standard deviation.

Executive Function Performance Test Subtest Results

Participants scored an overall mean (SD) of 3.7 (3.6) on the medication management EFPT subtest. The mean (SD) time to complete the medication management was 4 minutes 29 seconds (SD 2:37; Table 3). Of the 50 participants, 33 (66%) demonstrated impairments in the judgment and safety component of executive function. Although the frequency of the type of cue varied based on the executive functioning component being measured, overall, most participants required an indirect

cue, and indirect cues accounted for 52% of the cues provided (54 of 103 cues).

Participants scored an overall mean (SD) of 5.7 (3.8) on the bill paying EFPT subtest. The mean time to complete the bill paying subtest was 12 minutes 42 seconds (SD 6:38; Table 3). Overall, 45 of 50 participants (90%) demonstrated impairments in organization and 42 of 50 (84%) demonstrated impairments in safety and judgment. Although the frequency of the type of cue varied based on the executive functioning component being measured, overall, most participants required either indirect cues (50/136 cues; 37%) or direct cues (48/136 cues; 35%). Of note, the frequency of cue use during the bill paying subtest exceeded the frequency of cue use during the medication management subtest (136 cues for bill paying compared to 103 cues for medication management; 33 participants each needed one additional cue to complete the bill paying subtest successfully).

The Cronbach alpha coefficients showed a good-to-excellent internal consistency for both the medication management ($\alpha=0.76$) and bill paying ($\alpha=0.79$) subtests

Table 3

Executive Function Performance Test Scores

Parameter	Medication management	Bill pay
Score		
Mean (SD)	3.7 (3.6)	5.7 (3.8)
Min, max	0, 15	0, 18
Minutes to complete		
Mean (SD)	4:29 (2:37)	12:42 (6:38)
Min, max	1:09, 11:22	9:29, 23:15

Note. Abbreviations include Max, maximum; Min, minimum; SD, standard deviation

Discharge Recommendations and Identification of Cognitive Impairments

OT documentation was reviewed to evaluate how frequently the therapists addressed cognitive concerns in support of their discharge recommendations before and after administration of the EFPT. Discharge recommendations were more likely to include cognitive-specific language after implementation of the EFPT (n=31, 62%) than before (n=12, 24%; Table 2). After EFPT administration, 27 recommendations (54%) changed to include more cognition recommendations, and 21 (42%) were unchanged. The discharge recommendations for two (4%) participants had fewer references to cognitive recommendations than the initial notes; both participants were discharged to a rehabilitation setting rather than a home setting.

Several factors impacted therapist recommendations. Participants provided insight on recommendation details by discharge location and the use of cognitive language before and after EFPT subtest administration (Table 4). After EFPT implementation, therapists were more likely to report cognitive concerns to further justify recommendations despite discharge location.

The changes in discharge recommendations related to cognition as a result of EFPT subtest administration varied between the pre-EFPT group and the post-EFPT group. Descriptions of cognitive language after EFPT administration revealed that OTs used more specific examples of impairments and made more specific recommendations. Examples of cognitive language used before the EFPT included the following:

- Participant 1: “Anticipate home with spouse/friend/family support.”
- Participant 2: “Discharge plan pending progress with therapy, pt [patient] may benefit

from short stay at post-acute rehab program for three hours/day to address functional deficits and family training. However pending progress, pt [patient] may be safe to d/c [discharge] home with home health occupational therapy.”

Examples of post-EFPT discharge recommendations for the same two participants included the following:

- Participant 1: “Home with spouse/friend/family support, recommend direct S [supervision] for all IADL tasks like med mgmt. [management], bill paying, cooking, etc to ensure pt’s [patient’s] safety.”
- Participant 2: “Recommend d/c [discharge] home with family supervision for dynamic ADLs such as bathing and bathroom transfers, as well as supervision for functional mobility to ensure safety and fall risk prevention. Recommending outpatient OT [occupational therapy] for IADL completion and cognition tasks with emphasis on safety.”

Table 4

Participants for Whom Discharge Notes Addressed Cognition Before and After EFPT Subtest Administration and Discharge Recommendation Changes

Discharge location	Discharge notes address cognition, No. (%)*				Discharge recommendations changed, No. (%)*
	<i>Before EFPT</i>		<i>After EFPT</i>		
	Yes	No	Yes	No	
Home	6/17 (35)	11/17 (64)	17/24 (71)	7/24 (29)	8/17 (47)
SNF	0/1 (0)	1/1 (100)	1/2 (50)	1/2 (50)	0/1 (0)
Inpatient rehab	3/18 (17)	15/18 (83)	4/14 (29)	10/14 (71)	9/18 (50)
Outpatient rehab	3/4 (75)	1/4 (25)	9/10 (90)	1/10 (10)	3/4 (75)
Pending progress	0/10 (0)	10/10 (100)	N/A	N/A	7/10 (70)

Note. *No. is number of participants in a particular subgroup/total number of participants in a final discharge destination group either before or after EFPT administration. Abbreviations: EFPT, Executive Function Performance Test; rehab, rehabilitation facility; SNF, skilled nursing facility.

Discussion

By implementing two EFPT subtests, this study showed that this specific, psychometrically sound, standardized, performance-based assessment is feasible to administer in terms of time to complete. Using this top-down assessment, therapists detected functional cognition impairments at a mean of 5.7 days after hospital admission. The implementation of two EFPT subtests has implications for patients as therapists are able to make more specific and individualized recommendations for safety in the performance of everyday tasks.

Previous researchers highlight the benefits and applicability of using performance-based cognitive assessments in individuals after neurological or medical events in inpatient rehabilitation, outpatient, and community-dwelling settings (Baum et al., 2008; Lau et al., 2021; Morrison et al., 2015; Wolf et al., 2010). Furthermore, evidence supports early detection of cognitive impairments to enhance discharge planning; ensure the plan is patient-centered; and reduce risks, such as hospital readmissions and failure to participate in ADL or IADL management (Power et al., 2017). Although several researchers have speculated about the types of functional assessments that are warranted in acute care hospital settings, few have attempted to implement these assessments to evaluate the feasibility and benefits of assessing executive functioning earlier after brain injury (Lunter et al., 2019).

The acute care hospital is notoriously fast-paced, and therapists are routinely restricted in terms of time with their patients (Britton et al., 2015). In the acute care hospital, patients are evaluated and treated in days if not hours, with the aim of care being to identify impairments and make recommendations for the next level of care

(Britton et al., 2015). As noted in the results section, there were two instances in which cognitive impairments were not indicated to support the therapists' recommendation for acute rehabilitation. Although it cannot be said with certainty why the therapists for these patients did not document cognition as a reason for the recommendation, this is an example of therapists perhaps overlooking or not prioritizing the role of OT in cognitive retraining to support discharge recommendations. Hospital-based therapists are expected to evaluate and treat numerous patients daily to address patients' immediate therapy needs and to meet department productivity demands. This fast-paced environment not only limits the time available for assessment and therapy but also often leads therapists to choose quick-to-administer yet limited cognitive screenings over more robust performance-based tests (Blattman & Stephenson, 2021). Often, cognitive screenings are not sensitive enough to capture subtle impairments in functional cognition (Britton et al., 2015; Lau et al., 2021). For this reason, patients may perform well on these assessments and be discharged without follow-up services. Often, patients' foundational cognitive abilities are intact, as evidenced by their performance on basic cognitive screenings, but they actually have impairments in higher-level functional cognition (Brothers & Suchy, 2021) that affect their ability to function independently in IADLs, which in turn affects their overall life satisfaction. By implementing robust, objective, and sensitive performance-based assessments, therapists are better equipped to identify impairments in functional cognition and to set patients up for success after discharge (Lau et al., 2021). This study's results indicate that both the medication management and bill paying subtests of the EFPT are feasible assessments to use in acute care hospitals to determine cognitive functioning

impairments early in a patient's recovery. The time needed to administer each subtest was short—on average, about four and a half minutes for the medication management and less than 13 minutes for the bill paying subtest. Clinicians likely have 17 minutes to spend with patients to administer an assessment that will highlight potential impairments affecting a patient and warrant ongoing OT intervention.

A primary responsibility of OT practitioners in acute care is to provide recommendations (Britton et al., 2015; Pritchard et al., 2019) on safe discharge destination with assist level required as well as potential services or equipment the patient might need for occupational engagement. Acute care therapists may be the only health care team member that identifies and addresses cognitive impairments that influence a patient's safety and performance in daily activities in various contexts. It is imperative to provide holistic patient care to ensure possible areas of dysfunction are identified before discharge in order to provide and recommend the proper follow-up care.

The objective of the study was to highlight the important role OTs have in identifying cognitive impairments, using standardized assessments to support discharge recommendations, and identifying the need for follow-up therapy services after hospitalization. Such follow-up therapy may help maximize a patient's functional independence and occupational performance. As these results show, after implementing a more robust performance-based cognitive assessment, OTs increased the number of cognition-specific recommendations by more than 2.5-fold (from 24% of cases before EFPT use to 62% afterward). Before the EFPT was used, OTs were less likely to highlight cognitive concerns to support their discharge recommendations, but

after EFPT administration, OTs had access to information that allowed them to be more specific in their discharge recommendations. This information is important in terms of any discharge destination because performance-based assessments delve deep by assessing the more nuanced and potentially impactful cognitive skills that will affect a person's overall daily function and recovery (Pritchard et al., 2019). If a patient is set to return home with family, a robust performance-based assessment such as the EFPT will allow OTs to be prepared with concrete evidence that supports the need for specific supervision for IADLs affected by cognitive functioning impairments (Tiznado et al., 2021). Patients and families will be better prepared to transition to a next level of care (rehabilitation or home), and families can receive education that focuses on challenges a patient with cognitive impairment may experience.

Implications for Occupational Therapy Practice

Functional cognition falls within the scope of practice of OT because of its specific ties to IADL performance. OTs should understand the impact that cognitive impairments have on functional engagement and should prioritize evaluating and treating these cognitive impairments to maximize a patient's overall independence. The following points are of particular importance. First, during the evaluation process, OTs should routinely screen for cognitive impairments and, if impairments are suspected, complete a more robust and comprehensive functional performance-based assessment to determine how identified cognitive impairments affect a patient's performance in function. Second, by completing a performance-based assessment, such as the EFPT, clinicians will have concrete evidence of a functional cognitive impairment, which will allow them to provide the proper support, family education, and follow-up services

needed for patients to regain independence. Third, the EFPT is feasible to implement during the acute phase of recovery because of the time needed to complete the assessment and ability to detect cognitive and executive functioning impairments days after injury.

Study Limitations

The discharge recommendation and decision process is multifactorial and includes considerations outside of a clinician's purview, such as funding sources, patient and family preference, and acceptance to an external facility. As such, this study was unable to determine the exact impact of the administration and results of the EFPT with regard to changes in discharge destination. Although data were collected regarding the onset of patient symptoms, this information was not documented consistently in participants' charts and thus could not be analyzed for statistical impact. Further research should include severity and onset of symptoms to better determine the sensitivity of the EFPT in detecting functional cognitive impairments during the acute phase of recovery.

Furthermore, there was selection bias, which is inherent in the study design because OTs referred participants for study participation who they believed exhibited cognitive impairments. Observation bias is also possible because all participants were aware they were part of a research study that was specifically designed to assess their cognitive status. Finally, confirmation bias is likely because the study aimed to discover cognitive-specific verbiage in discharge recommendations after EFPT use and not before EFPT use.

Conclusion

Researchers highlight the practicality of implementing these two EFPT subtests in terms of time to complete the assessment and the EFPT's ability to identify cognitive function impairments during hospitalization. These results may shed light on the impact that EFPT subtest administration has on OT discharge recommendations. On average, OTs needed less than 20 minutes to complete two EFPT subtests, making this a viable option in the acute care setting. Cognitive impairments were identified by the subtests, which allowed clinicians to provide expanded, cognitive-specific discharge recommendations as noted in the health records. The assessment provided results that allowed clinicians to better understand if and how an identified cognitive impairment impacts a patients' performance in routine IADL tasks that are necessary for independent living.

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