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Client Outcomes: The Relationship Between Satisfaction and
Functional Change in Occupational Therapy

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Abstract

In 2019 CMS required occupational therapy (OT) practitioners to use the Quality Payment Program (QPP) and the Merit-Based Incentive Payment System (MIPS) to relate quality of care to cost-efficient care. OT practitioners must report information on Medicare B beneficiaries using outcome measures to assess functional change and client satisfaction with therapy services. The purpose of this study was to investigate potential correlations between outpatient OT patients' Focus on Therapeutic Outcomes (FOTO) scores and National Research Corporation Health Real-time (NRCHRT) responses to examine relationships between functional change and client satisfaction. Researchers analyzed retrospective data collected from OT patients with orthopedic upper extremity injuries seen from October 2017 to March 2019 at a large hospital-based outpatient therapy department. Wilcoxon signed-rank test determined a statistically significant median improvement of 20 points in FOTO change scores following therapy for all participants, $z = 20.98, p < .001$. The participants were grouped into promoters, passives, and detractors based on NRCHRT Net Promoter Score (NPS). A Kruskal-Wallis H test was conducted to determine if there were differences in FOTO change scores between the three groups of participants: promoters ($n = 591, Mdn = 21$ points), passives ($n = 36, Mdn = 19$ points), and detractors ($n = 22, Mdn = 14.50$ points). The promoter group had a greater FOTO median change compared to the detractor group. While this was not statistically significant, clinically significant differences were present between groups.

Client Outcomes: The Relationship Between Satisfaction and Functional Change in Occupational Therapy

According to the Medicare Payment Advisory Commission (2018), the amount of money Medicare is spending on beneficiaries is projected to increase due to the aging Baby Boomer generation. Due to the current economic and sociopolitical climates, the Centers for Medicare and Medicaid Services (CMS) desires to eliminate unnecessary expenses by replacing current fee-for-service reimbursement models with value-based reimbursement (Medicare Program, 2012). Proponents of value-based reimbursement claim these new payment models will reduce healthcare costs by linking the amount of reimbursement given to hospitals to the quality of care patients receive (Leland, Crum, Phipps, Roberts, & Gage, 2014). In addition, experts suggest this will promote an increase in the use of evidence-based practices by healthcare providers, which will in turn lead to improved patient outcomes (Leland et al., 2014).

In 2019, CMS required occupational therapy (OT) practitioners to use the Quality Payment Program (QPP), a value-based reimbursement model (QPP, 2019a). In this new payment model, OT practitioners who meet certain criteria must use the Merit-Based Incentive Payment System (MIPS), to relate quality of care to cost-efficient care, by requiring OT practitioners to report information on Medicare B beneficiaries in two performance categories: quality measures and improvement activities (QPP, 2019a). CMS currently accepts multiple outcome measures to fulfill these reporting requirements (QPP, 2019b). Two commonly used outcome measures in outpatient OT include Focus on Therapeutic Outcomes (FOTO), to measure functional change (quality of care), and the National Research Corporation Health Real-time (NRCHRT) feedback survey, to measure patient satisfaction (an improvement activity). FOTO is used nationally by healthcare professionals to measure a client's functional change in

therapy, and clinicians use the functional outcome measures created by FOTO to assess a patient's functional status at various times during the episode of care (FOTO, 2018). NRCHRT is a valid and reliable tool commonly used to measure patient satisfaction with therapy services (Co, Sternberg, & Homer, 2011). The purpose of NRCHRT is to provide a platform for patients to voice their opinions, values, and concerns to assist healthcare organizations in improving patient care outcomes (NRC Health, n.d.).

Upon a review of the literature, researchers did not find existing studies exploring correlations specifically between patients' FOTO scores and NRCHRT satisfaction ratings with outpatient OT services; however, previous researchers have investigated relationships between general functional status and overall satisfaction with healthcare (Custer, Huebner, & Howell, 2015; Hart & Wright, 2002; Müller et al., 2020; Pekarik & Guidry, 1999; Schrier et al., 2019). Therefore, the purpose of this study was to investigate potential relationships between outpatient OT patients' FOTO change scores and NRCHRT responses to better examine links between functional change and patient satisfaction.

Literature Review

Medicare and Value-Based Reimbursement

By way of the Affordable Care Act, CMS has attempted to shift the healthcare system from fee-for-service reimbursement to value-based reimbursement (Leland et al., 2014). The goals of value-based reimbursement are to improve health outcomes, enhance patient satisfaction, and to reduce the costs of healthcare (Leland et al., 2014). CMS initiated the QPP and the MIPS to reform reimbursement procedures and amounts dispensed to Medicare B providers (QPP, 2019a). As of 2019, OT practitioners who treat Medicare B beneficiaries, and who meet certain other inclusion criteria, are required to report data in two categories per the

QPP: quality measures and improvement activities (QPP, 2019a). To satisfy reporting requirements for quality, clinicians must measure patients' functional change scores using appropriate outcome tools (QPP, 2019a). Additionally, providers must demonstrate evidence of process improvement activities including "beneficiary engagement" (QPP, 2019c, p. 2). One example of this is the "collection and follow-up on patient experience and satisfaction data on beneficiary engagement, including the development of improvement plans" (QPP, 2019d, p. 4). CMS currently accepts a variety of tools to measure both quality and improvement activities including FOTO and NRCHRT (QPP, 2019a).

Quality Measures and FOTO

FOTO is used nationally by healthcare professionals to measure and assess a patient's functional status at various times during the therapy episode of care (FOTO, 2019). FOTO created their own regional assessments specific to parts of the body, but it also exists as a database that allows collection and analysis of scores (FOTO, 2019). The FOTO database was created so that data could be obtained more efficiently and effectively (FOTO, 2019). Responses from the FOTO assessments are collected via surveys using a computerized adaptive testing (CAT) process to determine patient demographics and self-perceived functional status (FOTO, 2019). FOTO allows "risk-adjusted, benchmarked reporting and quality management" (p. 1) and uses a patient's functional status to predict outcomes (FOTO, 2019).

FOTO's Elbow, Wrist, Hand Functional Status 10-Item Short Form (EWHFS) was created specifically for patients with conditions or injuries of the upper extremity (FOTO, n.d.). While the EWHFS does not have reported psychometric properties, it was adapted from the Disabilities of the Arm, Shoulder, Hand questionnaire (DASH) and the Upper Extremity Functional Index (UEFI), two outcome measures commonly used in upper extremity

rehabilitation (FOTO, 2018). Both patient-reported outcome measures are valid and reliable (Raven et al., 2008; Solway, Beaton, McConnell, & Bombardier, 2002) tools to assess symptoms and upper extremity function with daily tasks (Chesworth et al., 2014; Franchignoni, et al., 2014; Gummesson, Atroshi, & Ekdahl, 2003). Some items that patients are asked to rate their ability on include “tying or lacing shoes” and “opening a jar” (Hamilton & Chesworth, 2013, p.1513). Additionally, the DASH has been used to determine significant changes in patients’ occupational performance following OT services (Case-Smith, 2003).

Using the CAT delivery method, FOTO asks relevant questions to each patient depending on the stated disability and displays questions about varying levels of difficulty completing tasks (Hart, Deutscher, Werneke, Holder, & Wang, 2010). For example, patients may be asked if they experience difficulty when “gripping or opening a can” or “turning a key;” the next question will then be specifically selected based on the client’s previous response to capture their current specific level of function (FOTO, 2019). According to Hart (2001), the measures included in FOTO generally have internal consistency, construct validity, and are responsive to changes in health and functional abilities, though research is limited on FOTO’s upper extremity measures.

Additionally, FOTO provides patients and insurers with the ability to compare and contrast the services of different rehabilitation clinicians, clinics, and organizations (FOTO, 2019). Hart and Connolly (2006) found that FOTO data reduced reimbursement for low-performing companies by 12% and financial incentives were used to promote better patient care outcomes. According to the researchers, patients who received care based on the pay-for-performance model had a more significant change in their functional status than those receiving traditional fee-for-service care (Hart & Connolly, 2006). Pay-for-performance promoted significant change in functional status because it held the therapist accountable for the factors

they have control over during their therapy session to promote patient satisfaction (Hart & Connolly, 2006).

Patient Satisfaction

According to CMS (2015), it is important for healthcare providers to collect and interpret data that relates to patient satisfaction. Junewicz and Youngner (2015) stated three different factors were present that influenced patient satisfaction: necessary medical care that the patient received, medically unnecessary interventions the family or patients requested that could negatively impact functional outcomes, and factors related to soft skills and the environment. These environmental factors included the communication style of the healthcare provider, the design of the parking lot, the quality of the hospital gowns, and/or the design of the facility's lobby (Junewicz & Youngner, 2015). Al-Abri and Al-Balushi (2014) concluded that a physician's communication style was the most important factor in patient satisfaction.

Angerud, Boman, Ekman, and Brannstorm (2017) explained that the "patient's experience of and satisfaction with care is used as indicators of quality" (p. 831). Based on the literature, patient education was found to be one of the leading factors in patient satisfaction (Junewicz & Youngner, 2015; Suurmeijer et al., 2005). When a healthcare practitioner educated the patient and their family on what to expect following discharge, it reduced the development of depression and anxiety (Suurmeijer et al., 2005). Additionally, a family that received education felt more prepared and in a better mental state at the time of discharge and was more satisfied with their therapy services (Suurmeijer et al., 2005). Glowacki (2015) concurred that education about pain management increased patient satisfaction and stated that when patients were able to manage their signs and symptoms, their level of satisfaction improved.

Additionally, patient satisfaction can be impacted by expectations of treatment services, health status, personal characteristics, and the characteristics of the healthcare system (Hsieh & Kagle, 1991). According to Graham, Green, James, Katz, and Swiontkowski (2015), the relationship among patients, caregivers, treatment settings, and any variety of additional components may sway a patient's level of satisfaction with their provided care. The resulting data could be used to improve customer service and therefore increase the likelihood of retaining patients and increasing reimbursement (Graham et al., 2015). Graham et al. (2015) also noted that when patient satisfaction data was used to improve overall processes and outcomes, the number of patient lawsuits was reduced. Therefore, it is important for healthcare providers to collect and interpret data that relates to patient satisfaction. One tool that researchers have used to collect this data is the NRCHRT (NRC Health, n.d.).

NRC Health Real-time

The NRCHRT satisfaction tool is used to collect data on a patient's overall satisfaction with their care and allow organizations and healthcare providers to understand what is most important to their patients (Co et al., 2011). The NRCHRT demonstrates "good criterion-related validity, with high correlation between the dimensions of care assessed and overall satisfaction, as well as, to whether or not the patient recommended the hospital to their family or friends" (Co et al., 2011, p. S64). Additionally, the tool has appropriate internal consistency and reliability to capture patient satisfaction (Co et al., 2011).

Historically, healthcare systems categorize NRCHRT client responses based on the rating given to the question "How likely would you be to recommend this facility to your family and friends?" (Krol, De Boer, Delnoij, & Rademakers, 2014, p. 3100). To determine the Net Promoter Score (NPS), clients answer this question on a scale of 0-10 with zero being 'not at all

likely' and ten being 'extremely likely' (Graham & Maccormick, 2012; Krol et al., 2014).

Clients are considered 'promoters' if they answer with nine or ten, 'passives' if they answer with seven or eight, and 'detractors' if they answer with zero through six (Krol et al., 2014).

The Relationship Between Patient Satisfaction and Functional Outcomes

Patient satisfaction and functional outcomes are important to consider as they relate to the quality of healthcare, but especially since providers must report this data to receive Medicare B reimbursement (QPP, 2019a). For decades, patient satisfaction has been acknowledged by researchers and healthcare professionals as a predictor of a patient's willingness to fully participate in treatment services; as such, this may affect the patient's overall functional outcome (Pefoyo & Wodchis, 2013). Past researchers sought to find correlations between general satisfaction and functional outcome measures, but no results were statistically significant (Pekarik & Guidry, 1999).

More recently, however, Schrier et al. (2019) analyzed patient satisfaction and clinical outcomes among patients who underwent carpal tunnel release surgery. Researchers used the Boston Carpal Tunnel Assessment Questionnaire as an outcome measure to determine symptoms and functional status and compared these results with patient-reported experiences (Schrier et al., 2019). Schrier et al. (2019) found that the greatest impact on patient reported-experiences was physician communication and treatment information. In another study, Custer et al. (2015) utilized the Functional Independence Measure (FIM) and found that patients who scored higher on the FIM at discharge and were more independent with functional tasks, were more likely to express satisfaction about clinical quality and client-centeredness subscales. In another study, Tsehaie et al. (2019) aimed to "investigate the association between patients' experiences with trapeziometacarpal arthroplasty and treatment outcomes in terms of patient-reported outcome

measures, grip and pinch strength” (p.714). The researchers utilized the Michigan Hand Outcomes Questionnaire and pinch and grip strength measurements to determine functional outcome status (Tsehaie et al., 2019). By using regression analysis, researchers found significant positive associations between the Michigan Hand Questionnaire and patient-reported experience measures (Tsehaie et al., 2019). Additional researchers have focused on the relationships between the quality of service, satisfaction, and treatment effectiveness and found satisfaction had a statistically significant ($p < .05$) effect on the patient’s functional outcome (Kim et al., 2017).

Researchers have focused heavily on functional change as related to the level of satisfaction using a variety of different tools, but not with the popular FOTO or NRCHRT. Additionally, research conducted on the relationships between patient satisfaction and functional outcomes among patients receiving outpatient OT for upper extremity rehabilitation is limited. Therefore, the purpose of this study was to investigate potential relationships between outpatient OT patients’ FOTO change scores and NRCHRT responses to better examine links between functional change and patient satisfaction.

Methodology

Procedures

After receiving permission from hospital leadership and exempt study approval by the University of Indianapolis Human Research Protections Program, researchers used a quantitative, cross-sectional study design to investigate possible relationships between FOTO scores and NRCHRT responses. Researchers analyzed retrospective data from patients treated between November 2017 through March 2019 at a large hospital-based outpatient therapy department located in the Midwest to determine if initial satisfaction scores impacted overall

functional change. FOTO and NRCHRT data used in the study were previously collected for normal operating procedures at the facility; therefore, no participants were recruited, screened, or randomized, so informed consent was not necessary to obtain. Both tools have been used for many years at this facility for management, leadership, development, marketing, and reimbursement purposes.

NRCHRT

NRCHRT was used to measure the patient experience and satisfaction of care. At this facility, the NRCHRT survey was sent to patients through text messaging the same day as their initial evaluation. Patients were asked ten questions about their experience at the therapy clinic and answered questions based on a Likert scale (no; yes, somewhat; yes, mostly; or yes, definitely) or rating scale (zero through ten). Patients were also asked the question “How likely would you be to recommend this facility to your family and friends?” (Krol et al., 2014, p. 3100) and answered on a scale of zero through ten, with zero being “not at all likely” and ten being “extremely likely” (Krol et al., 2014). Based on their responses, patients were grouped into one of three categories: ‘promoters’ if they answered with a nine or ten, ‘passives’ if they answered with a seven or eight, and ‘detractors’ if they answered with zero through six (Krol et al., 2014).

FOTO

FOTO was used to measure a patient’s functional change from their initial therapy visit to discharge. The FOTO intake survey was given to clients when they arrived for their therapy evaluation by front office staff. Patients completed the initial FOTO on a tablet in the waiting room before meeting their therapist. The FOTO discharge survey was given to patients by their therapist on the final day of the therapy episode using either a tablet or computer, dependent on clinic set-up. Patient responses to FOTO were collected via a survey using CAT processes to

determine patient demographics and self-perceived functional status (FOTO, 2019). FOTO delivers relevant questions to each patient depending on the stated disability and displays questions about difficulty completing tasks (Hart et al., 2010). For example, on the Hand or Wrist FOTO assessments, patients are asked if they experience difficulty when “gripping or opening a can” or “turning a key” (FOTO, 2019). The design of the CAT process is to provide questions in varying order to specifically determine the level of functional impairment (Hart et al., 2010).

Participants and Data Collection

Participants of the study previously received outpatient OT services for hand, wrist, elbow, or upper arm injuries and completed the NRCHRT on the day of their evaluation. To meet inclusion criteria, participants were 18 years or older and completed FOTO at therapy evaluation and discharge. Exclusion criteria consisted of patients with incomplete NRCHRT, those not seen by OT hand therapists, or those who did not have a hand, wrist, elbow, or upper arm orthopedic impairment.

In order to maintain patient and clinician privacy, a qualified hospital employee not associated with the research team paired FOTO and NRCHRT data for each participant. Once the data pairing was completed, the hospital employee removed all patient and clinician identifiers from the encrypted spreadsheet to provide the researchers with coded and de-identified data.

Data Analysis

Researchers received data from 1259 total participants. Upon preliminary analysis of the data, researchers removed 41.9% ($n = 528$) of participants who had incomplete FOTO scores. Additionally, researchers excluded 2.9% ($n = 37$) of participants who had a non-orthopedic

injury and 7.1% ($n = 89$) of participants who did not respond to the NPS question on the NRCHRT. Therefore, researchers analyzed a total of 649 participants. Researchers conducted the preliminary analysis multiple times to ensure the accuracy of the final sample.

Researchers used SPSS Version 23.0.0.0 for data analysis and first calculated the FOTO functional change score for each participant by calculating the difference between the discharge score and the intake score. Because of this, 6% ($n = 40$) of participants had negative FOTO change scores as their functional status worsened over the course of therapy. Researchers then set to determine if FOTO change scores were statistically significant and if there was a statistically significant difference in change scores between groups.

Results

Researchers ran descriptive statistics on FOTO functional change scores. Eleven outliers that were more than 1.5 box-lengths from the edge of the box in a boxplot were detected. The outliers were true measurements not due to error and were therefore kept for analysis. The Shapiro-Wilk's test ($p < .001$) assessed that FOTO change scores were not normally distributed. Upon further analysis, 598 participants (92%) had functional improvement according to FOTO, 40 participants (6%) had a decline in functional improvement, and 11 participants (2%) had no functional change.

A Wilcoxon signed-rank test was conducted to determine the effect of outpatient OT on functional change. FOTO change scores for all groups were approximately symmetrically distributed, as assessed by visual inspection of a boxplot. There was a statistically significant improvement in functional change ($Mdn = 20$ points) as measured by FOTO following therapy, $z = 20.98, p < .001$.

To determine if FOTO change scores differed based on initial satisfaction scores, researchers categorized participants into three distinct groups based on data output from the NRCHRT database. Researchers had to recode net promoter data from the question, “How likely would you be to recommend this facility to your family and friends?” (Krol et al., 2014, p. 3100) to change the computer-generated numbers to match the conventional scoring used in the rating scale (0-10). A Kruskal-Wallis H test was conducted to determine if there were differences in FOTO change scores between the three groups of participants with different satisfaction ratings: the ‘promoters’ ($n = 591$, $Mdn = 21$ points), the ‘passives’ ($n = 36$, $Mdn = 19$ points), and the ‘detractors’ ($n = 22$, $Mdn = 14.50$ points). Distributions of FOTO change scores were similar for all groups as assessed by visual inspection of a boxplot. Median FOTO change scores were not statistically significantly different between groups, $\chi^2(2) = 1.158$, $p = .560$.

Due to the large difference in the number of participants in the promoter group compared to the other two groups, researchers repeated the statistical analysis using a similarly sized promoter group to ensure accuracy. Thirty-eight randomized participants were selected from the original promoter group of 591 participants using the random number generator from Microsoft Excel. Researchers ran the Kruskal-Wallis H test again to determine if there were statistical differences in FOTO change scores using the smaller promoter group (new $Mdn = 22.5$ points). Again, median FOTO change scores were not statistically significantly different between groups, $\chi^2(2) = 3.088$, $p = .214$.

To further explore the data, researchers ran a Mann-Whitney U test to determine if there were differences in change scores only between the ‘promoter’ group, using the randomized pool ($n = 38$), and the ‘detractor’ group ($n = 22$). Distributions of change scores for both groups were not similar, as assessed by visual inspection. Change scores for promoters (mean rank = 33.14)

and detractors (mean rank = 25.93) were not statistically significantly different, $U = 317.5$; $z = -1.543$; $p = .123$.

Discussion

In this study, researchers aimed to investigate potential relationships between outpatient OT patients' FOTO functional change scores and NRCHRT responses to better examine links between functional change and patient satisfaction. Several researchers have already conducted multiple studies examining the links between functional status and overall satisfaction with healthcare services (Custer et al., 2015; Hart & Wright, 2002; Müller et al., 2020; Pekarik & Guidry, 1999; Schrier et al., 2019). Researchers found patient satisfaction was higher in patients with significant improvement in physical ability, pain relief, and self-care (Imhoff, Feucht, Bartsch, Cotic, & Pogorzelski, 2018; Ray, Ekelund, Nemes, Rolfson, & Mohaddes, 2019). Researchers also found that patient satisfaction was partially dependent on treatment effectiveness more than interpersonal-based medical service encounters, such as the therapy environment (Kim et al., 2017). In another study, functional outcomes were greatly associated with overall patient satisfaction (Lizaur-Utrilla, Miralles-Munoz, Gonzalez-Parreno, & Lopez-Prats, 2019). Glasgow, Cox, Laracy, Green, and Ross (2019) explained that while upper extremity rehabilitation did not necessarily restore the patient's condition entirely in all cases, it often led to a reduction in pain and greater patient satisfaction and therefore led to a greater chance of functional improvement.

Not only was patient satisfaction able to predict better treatment outcomes, but it was also able to predict a higher-rated quality of life and better physical and mental health (Müller et al., 2020). Krol et al. (2014), concluded that there was a moderate to strong correlation between NPS, global ratings, recommendation questions, and overall patient experience scores.

Considering all the evidence, it can be concluded that an increase in functional change is related to satisfaction because there is marked improvement in the functionality and overall health of patients.

Although differences in functional outcome scores between net promoter groups were not statistically significant in our study, those in the ‘promoter’ group did have higher scores than those in the ‘passive’ group or the ‘detractor’ group. Therefore, we determined a clinically significant difference in FOTO change scores between the ‘promoter’ group ($Mdn = 21$ points) and the ‘detractor’ group ($Mdn = 14.50$ points) as a 21 point change in function is much greater than a 14.50 point change. It should also be noted that the median change in functional status for all participants ($n = 649$) was 20 points. FOTO researchers have defined functional change as a change in only six to 12 points (Resnik & Hart, 2003; Wang, Hart, Cook, & Mioduski, 2010; Wang, Hart, Stratford, & Mioduski, 2009; Wang, Hart, Stratford, & Mioduski, 2011); therefore, participants in our study had a greater level of functional change with OT services. Current OT practitioners should understand that while there were no significant correlations between satisfaction scores and functional outcome scores in our study, the differences were clinically relevant. Because of this, OT practitioners should aim not only to improve their client’s physical condition but ensure they are satisfied with their experience as well.

Limitations and Implications for Future Practice

A few limitations exist for our study. Upon reviewing the relevant literature, the researchers were unable to locate any information stating that FOTO was reliable or valid by anyone other than employees of FOTO. Therefore, FOTO should be validated by other sources, or a more thoroughly researched outcome measure should be used to determine functional change. Additionally, data was only collected from patients with musculoskeletal conditions of

the upper extremity; therefore, the findings of this study are not generalizable to other patient populations within the profession. The researchers recommend further data collection from a variety of patient populations to ensure that the findings are more applicable in all OT settings.

The researchers' use of NRCHRT to measure satisfaction also limited the conclusions that can be made from the study. Our participants' NRCHRT scores were only collected after the initial evaluation; therefore, the scores did not enable a complete view of the patient's entire therapy experience. Also, researchers used groupings of patient satisfaction consistent with the literature and regarded those with NPS of nine and ten as 'promoters.' Because the groups were not evenly categorized, this may have led to skewed results. The researchers recommend future studies more thoroughly investigate responses given on the NRCHRT.

Conclusion

In conclusion, researchers did not find statistically significant relationships between outpatient OT patients' FOTO change scores and NRCHRT responses when examining links between functional change and patient satisfaction. However, clinically significant differences were present. Researchers recommend further exploration of patient satisfaction and functional change with therapy services as reimbursement continues to change. As always, OT practitioners need to be aware of such policies and procedures regarding reimbursement and continue to strive towards best practice to ensure satisfaction and functional improvement in their patients.

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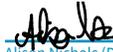
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