Responsiveness and predictive validity of the self-identified goals assessment with individuals in skilled nursing facilities

Laura R. Schofield
The University of Toledo

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Responsiveness and Predictive Validity of the Self-Identified Goals Assessment with Individuals in Skilled Nursing Facilities

Laura Schofield
Research Advisor: David L. Nelson, PhD., OTR/L
Occupational Therapy Doctorate Program
Department of Rehabilitation Sciences
The University of Toledo
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Abstract

This study explores the responsiveness and predictive validity of the Self-Identified Goals Assessment (SIGA), a client-centered tool designed to elicit goals that have meaning and purpose to the rehabilitation client. An occupational therapist recruited 18 participants in a subacute rehabilitation facility, and these data were combined with results from 21 persons studied in a previous study by Hasenmeier (2008). Altogether, 9 were male and 30 female. The research design involved a three-step process through semi-structured interviews: (a) postadmission administration of the SIGA by the occupational therapist, (b) predischarge administration of the SIGA by the same occupational therapist, and (c) postdischarge administration of the SIGA with a follow-up interview conducted in a masked way by the student investigator. Responsiveness as measured as the difference between the overall SIGA scores at admission versus discharge was found to be statistically significant ($p < .0001$), with a mean gain from postadmission to predischarge of 3.3 ($SD = 2.4$) and a very large effect size. The SIGA at predischarge was not found to be a statistically significant predictor of a) the self-reported amount of help time needed at home ($r = .04, p = .81$), or b) postdischarge overall SIGA ($r = .18, p = .28$). However, individual SIGA goals rated at predischarge were statistically significant predictors of home-based ratings of the same goals. Results from this study provide further evidence of the responsiveness of the SIGA to monitor changes in the patient throughout the inpatient stay. The partial failure of predischarge SIGA scores to predict functions after discharge in the home might be due to differences between the institutional environment and the home and to clients’ lack of insight into these differences.
Introduction

Client-centered practice is becoming the focus of occupational therapy professionals all over the world. It has been defined as “a process in which the client is the focal point around which occupational therapy treatment evolves” (Maitra & Erway, 2006, p. 298). Client-centered practice has grown into a distinguishing factor for occupational therapy. Principle 3 of the Occupational Therapy Code of Ethics states, “The right to make a determination regarding care decisions that directly impact the life of the service recipient should reside within that individual” (American Occupational Therapy Association, 2010, p. 5). Occupational therapists and clients work together to determine the best method of treatment for the individual. The therapist is responsible for matching the client’s meanings and purposes with the best suited occupation. Townsend, Langille, and Ripley (2003) discussed the issue as follows “Client-centered practice involves working with people as citizens in contrast to doing things to or for people” (p. 18).

In client-centered practice, open communication between therapist and client is essential. This is obtained by the therapist's knowledge and experience in developing communication skills throughout his or her career. Client-centered practice allows the therapist to create goals that are specific to the client’s desires. Goal setting involves clients and therapists collaborating on achievable states of the client in the future. Achieving these goals is the purpose of rehabilitation. There are different ways that therapists use for goal setting. Regardless of method, a client-centered approach shows that patients’ needs are being acknowledged. In a study on the effectiveness of goal setting when working with clients, a common theme was that clients believed the goals provided structure for therapy (Doig, Fleming, Cornwell, & Kuipers, 2009). Other themes were (a) the goals they created made them feel motivated, (b) making a
goal made them feel responsible for completing it, and (c) the clients felt more aware of their problems which led to greater recognition of their progression over time.

The Conceptual Framework for Therapeutic Occupation (CFTO) (Nelson & Thomas, 2003), describes the need for collaboration between therapist and clients for successful treatment. The therapist synthesizes occupational forms for the client based on an assessment to determine what occupations will provide meaning and purpose. In a recent study of client-centered assessments, Stuber and Nelson (2010) wrote, “Client-centered models of practice emphasize personal success as the most important dynamic of occupational therapy” (p. 14). According to CFTO, occupations have to be challenging to the client. The degree of challenge has to balance the level of difficulty of the occupational form and the amount of competency in the client’s developmental structure. Synthesis of the occupational form by the therapist will create the just right challenge and promote success by the client. CFTO states that there are two types of success. Sociocultural success occurs when the client’s performance and impact match society’s norms. Personal success can be attained when the client’s occupational performance and impact match the client’s purpose. In CFTO, assessment of the client is a problem solving process. Occupational forms are provided for the client, and after the client’s performance, inferences can be made about meanings and purposes. A client-centered approach is necessary for the therapist to use so that personal success can be achieved.

The Canadian Occupational Performance Measure (COPM) (Law, Baptiste, McColl, Opzoomer, Polatajko, & Pollock, 1990) is “an outcome measure for use by occupational therapists to assess client outcome are the areas of self care, productivity and leisure” (p. 83). The COPM is a self-report measure and allows clients to establish their own areas of improvements based off of their satisfaction of their performance and the importance of the performance. The process of administering the COPM consists of five steps: defining the
problems of the occupational performance, weighting the importance of the problems, scoring satisfaction, and re-assessing by way of semi-structured interviews. This client-centered approach allows therapists to make goals based on the importance of the performance to the client. Therefore the client is an integral part of the therapy process and can feel responsible for his or her actions throughout rehabilitation.

The COPM has been shown to have validity and reliability. The COPM manual reported that test-retest reliability using intra-class correlation coefficients was .63 for Performance and .84 for Satisfaction (Law, Baptiste, Carswell, McColl, Polatajko, & Pollock, 1998). Additional studies also support the validity and reliability of the COPM. A study with clients with strokes found test-retest reliability correlation coefficients of .89 for Performance and .88 for Satisfaction (Cup, Thijssen, & van Kuyk-Minis, 2003). The utility of the COPM in practice has been debated. A study on the feasibility of the COPM followed three occupational therapists for five months, who routinely used the COPM. The therapists reported that although the measure helped focus treatment and improve the degree of client-centered care, it also created an increased time burden and the process was too therapist-driven (Colquhoun, Letts, Law, MacDermid, & Edwards, 2010).

Another assessment that uses a client-centered approach to elicit client goals with meaning and purpose is the Self-Identified Goals Assessment (SIGA) (Melville, Baltic, Bettcher, & Nelson, 2002). The SIGA was developed to help clients determine meaningful goals for therapy. It was developed in subacute rehabilitation and nursing homes. This assessment is designed to be used as a structured interview between the occupational therapist and the client. The therapist elicits one to five self identified occupational goals from the client. Once the goals have been identified, the therapist asks the client to rate each goal on a 0-to-10-point scale
pertaining to performance, and also gives a rating for overall level of performance for everything the client wants to do.

Clients’ perspectives of the SIGA have been studied. Clients in a subacute facility reported that the SIGA helped them report to the therapist what was personally important to them in therapy (Melville et al., 2002). They also found that “the SIGA process encouraged participants to reflect on their recently changed and still changing personal capacities and how these capacities matched up with their past patterns of occupation…” (p. 656). Similarities and differences can be seen between the SIGA and COPM. Stuber and Nelson (2010) studied the convergent validity of these two assessments as well as the Occupation Self Assessment (OSA). Thirty participants were administered the assessments in a counterbalanced order in a traditional care center. They found, “The mean of the SIGA self-identified goals was highly correlated with the COPM performance scores (p. 18). This is to be expected because the SIGA was modeled after the COPM. In clinical utility, the study found the SIGA’s mean number of minutes to complete assessment was 5.6 while the COPM was 18.8 minutes. The SIGA was designed to specifically for practical use in rehabilitation settings.

Clinical assessments should be tested for responsiveness and predictive validity. Responsiveness can be seen when an accurate quantifiable change has occurred from first assessment to follow-up. Kielhofner (2006) stated, “Predictive validity involves evidence that a measure is a predictor of future criterion” (p. 168). It can be achieved by administering the assessment first, collecting information, and later following up to see if the criteria are met. Predictive validity is necessary for assessments so therapists will know how well clients will do in the future.

Predictive validity and responsiveness of the SIGA were studied by Hasenmeier (2008). Twenty-one participants in subacute rehabilitation and nursing homes were assessed at
postadmission, predischarge, and postdischarge. The SIGA was administered by the patient’s regular occupational therapists and follow-up interviews were done by the student investigator. The study found evidence that the SIGA was responsive to the changes made through the inpatient stay. The mean gain from postadmission to predischarge was statistically significant, $t = 13.78, p < .0001$. For predictive validity there was no significant correlation ($r = .23, p = .31$) between predischarge and postdischarge overall SIGA scores. They found “evidence for predictive validity from predischarge to home was not strong; patients’ predischarge perceptions of function may change once the patient is in the home environment (p. 2).

As suggested for future research by Melville et al. (2002), and based on the study by Hasenmeier (2008), the following study investigates the following properties of the SIGA: (a) responsiveness in changes from admission to discharge and (b) predictive validity of follow-up SIGA scores after discharge to the home environment.

**Method**

**Participants**

Participants for this study were from Fireland’s Regional Medical Center in Sandusky, Ohio. One licensed therapist recruited participants and conducted the SIGA assessment throughout the course of the study. There were 34 participants who agreed to participate in the current study and met inclusion criteria. The following criteria includes: current recipient of occupational therapy services, 50 years of age or older, voluntary consent to participate in the study, voluntary consent to release necessary medical records (age, gender, primary diagnosis), a plan for discharge to a private residence (home, relative’s or friend’s home, or assisted living facility), and a planned minimum stay of seven days in the skilled nursing facility.

Of the 34 participants, 18 had completed data sets. Reasons for an incomplete data set were as follows: one expired, three wished to be discontinued from the study, seven were unable
to be contacted via the number provided by the participant for follow-up, four went to the hospital or other skilled nursing facility, and one participant was discharged before SIGA scores could be obtained. Out of the 18 completed data sets, 12 were female and 6 were male with a mean age of 75.5 ($SD = 12.36$). Common diagnosis of participants include: total knee replacement, total hip arthroplasty, respiratory exacerbation, generalized weakness, sepsis, cerebral vascular accident and renal failure.

Participant information will be combined with data from the previous study by Hasenmeier (2008). A $t$-test was conducted to determine differences between data sets from the previous to the current study. There were no statistically significant differences in terms of age or overall admission SIGA scores between the previous and current sample; therefore, both samples were used to complete data analysis.

**Instrument**

The occupational therapist administered the Self Identified Goals Assessment. This assessment is also available on the internet (Melville, & Nelson, 2001). The occupational therapist asked the participant about prior functioning, home situation, life work, interests, and routines. The therapist then asked the participant to identify occupations “you would like to work on or improve on in therapy before you go home.” The therapist used interviewing skills with the patient to elicit up to five goals, if possible. When the participant could not identify specific goals, then the therapist would ask about prior routines and “things that seem difficult to you now.” If the goals identified by the participant include improving strength, balance, or any other component ability then the therapist asked, “What will the increased ability help you to do in everyday life?” If the participant reports a desire to walk, then the therapist would inquire about the destinations and related routines or tasks the participant would walk to. The therapist did not judge the participant’s goals and recorded whatever the person stated.
The therapist then asked “How well can you do all of the things you want to do on a scale from 0 to 10, with 0 being that you can’t do them at all and with 10 being you can do them your very best.” The therapist showed the participant a figure depicting the 0-to-10 scale in large print, with a smiling face on one end and an unsmiling face at the other to help participants interpret the meanings of the two ends of the scale. If the participant did not understand the scales then the therapist provided further explanation. The therapist asked the patient to give a single number and not a fraction (e.g., not “3 1/2”). Lastly the therapist questioned the participant to rate each goal from 0-to-10 using the same scale. The overall scores reported by the participants are primarily used, and the individual goal scores are used secondarily for data analysis.

Procedure

Data collection for the current study took place between September 2011 and July 2012. The research design consisted of a three-step process: (a) postadmission administration of the SIGA, (b) predischarge administration of the SIGA, and (c) postdischarge administration of the SIGA with follow-up interviews. The postadmission and predischarge administrations of the SIGA were administered by the occupational therapist, and the postdischarge administration with follow-up interview were be completed by the student investigator who was masked to the previously collected scores by the occupational therapist.

Informed consent was attained by the occupational therapist who was also responsible for gathering the following information from the participant: age, gender, primary diagnosis, and anticipated discharge site. The SIGA was administered after the initial occupational therapy assessment was conducted. During the postadmission administering of the SIGA, the therapist followed the Self-Identified Goals Assessment (SIGA) Protocol (Melville & Nelson, 2001). At predischarge (the day of or day prior to discharge), the therapist once again administer the SIGA,
following the SIGA protocol. The therapist also gathered postdischarge contact information from the participant and provided to the student investigator for the completion of data collection. The information was provided to the student investigator via email in order to complete the postdischarge administration of the SIGA and follow-up interview. The student investigator was masked to the postadmission and predischarge SIGA scores of the participant. The student investigator completed interviews with participants within 5 to 14 days after discharge. Interviews with the participant by the student investigator were conducted over the phone from the contact information provided by the occupational therapist.

Re-administration of the SIGA by the student investigator included the following questions during the postdischarge follow-up interview: a) “How much help [in time] did you receive yesterday with your everyday tasks?” b) “How much help [in time] did you receive the day before yesterday with your everyday tasks?” c) How much help [in time] did you receive two days before yesterday with your everyday tasks?” The student investigator spoke directly with the participant by telephone and occasionally would need to provide cueing if participants did not understand questions. Participants would state, “ I do not understand the question?” and the student investigator would reply, “ How much assistance do you need throughout the day from another person for things such as; bathing, making meals, getting dressed or anything else you do throughout the day.” The final score for help time needed was determined by calculating the mean duration across the reported three days.

**Plan for Data Analysis**

Data analysis will follow that of the study done by Hasenmeier (2008), whose data was combined with data from the current study. The analysis of responsiveness was gathered from data collected from postadmission and predischarge SIGA scores in each data sample. Predictive validity was analyzed by comparing predischarge and postdischarge SIGA scores as well as the
relationship of scores to the duration of help time needed as reported by the participant. All data analysis included data collected from the previous study done by Hasenmeier (2008).

Responsiveness of the SIGA was assessed from postadmission to predischarge in three ways: a) \( t \) test for related measures (postadmission and predischarge scores; b) effect size in accordance with Stratford, Binkley, and Riddle (1996); and c) Cohen’s effect size (1998, p. 48).

For analyzing predictive validity, a Spearman rank-ordered correlation was used between the SIGA overall score at discharge and two factors at follow-up: the mean amount of help needed per day, and the overall in-home SIGA score. Specific SIGA scores were studied for predischarge and home correlations.

**Results**

After combining data collected in the current study with data collected from Hasenmeier, there were 49 persons who were measured at postadmission and predischarge. As depicted in Figure 1, there were 38 total participants from the previous and current study who had complete data sets. The mean number of days for these 38 persons from postadmission to predischarge was 19.4 days \((SD=12)\) at the skilled nursing facility, while the mean number of days from predischarge to postdischarge follow-up was 6.5 days \((SD=2.8)\). The length of stay decreased from a mean of 22.8 days in the Hasenmeier (2008) study to a mean of 19.4 days in the current study.

**Responsiveness**

Changes in postadmission to predischarge scores as well as gains made between the two scores from the previous and current data samples are displayed in Table 1. Of the 49 participants scores, the mean score for overall SIGA (everything the participant’s needed to do throughout the day) was 4.1 \((SD=2.3)\) at postadmission. The same participants’ mean score for overall SIGA at predischarge is 7.4 \((SD=2.4)\). The mean gain from postadmission to
predischarge is 3.3 with a standard deviation of 2.4. The mean gain was statistically significant \( t = 9.8 \) and \( p = <.0001 \). The effect size as described by Cohen (1998) for gain scores was 2.0, a large effect size but lower than the calculation of 5.0 by Hasenmeier’s study (2008). The effect size as calculated by Stratford et al. (1996) 1.5, which is lower than the Cohen effect size because it does not take into account the correlation between postadmission and predischarge scores.

Additional analyses of the differences between individual goal scores at postadmission and predischarge can be found in Table 1. All SIGA gain scores from postadmission to predischarge were statistically different. Effect sizes were large for each of the goals with exception of the fifth goal which was not calculated due to the small sample size. Hasenmeier (2008) had similar results when completing data analysis on her data alone.

**Predictive Validity**

Spearman correlation coefficients between overall predischarge SIGA and help time needed postdischarge, overall postdischarge SIGA, and postdischarge SIGA goals 1-4 are summarized in Table 2. SIGA scores at predischarge and amount of help time needed at home were not significantly correlated \( (r = .04, p = .81, n = 39) \). In the previous study, Hasenmeier (2008) found similar results. There was no significant correlation between the predischarge overall SIGA and postdischarge SIGA scores \( (r = .18, p = .28) \). There were statistically significant correlations between SIGA predischarge scores and postdischarge scores for SIGA goals one \( (r = .38, p = .02, n = 39) \), two \( (r = .39, p = .01, n = 39) \), and three \( (r = .47, p = .003, n = 36) \).

**Other Analysis**

As can be seen in Figure 1, SIGA scores from predischarge \( (M = 7.4, SD = 2.4) \) to postdischarge \( (M = 7.2, SD = 1.8) \), slightly declined; however, overall the mean postdischarge
score is still higher than postadmission scores ($M = 4.1, SD = 2.3$).

**Discussion**

Results from postadmission to predischarge displayed high levels of responsiveness with the SIGA. From postadmission to predischarge, the overall mean SIGA gain score was 3.3 ($SD = 2.4$). The responsiveness of the SIGA as determined by this study is parallel to the results found by Hasenmeier (2008). A recent study by Eyssen and colleagues (2011) also found responsiveness with the Canadian Occupational Performance Measure with participants from postadmission to predischarge. When using instruments which are tailored to individual respondents, responsiveness is needed to assess an instrument’s ability to measure change over time (Guyatt, Walter, & Norman, 1987).

In terms of predictive validity, overall predischarge SIGA scores had a low correlation with the help time needs postdischarge ($r = .04, p = .81$). These results are similar to the previous study done by Hasenmeier (2008), who also found little correlation. This might be a problem of predictive validity or it might be a problem of measurement. Many scores at predischarge were rated near perfection (9 or 10). This possible ceiling effect might prevent a correlation from being found. The high scores might also reflect an excess of optimism at the time of discharge. It is also possible that some individuals had a lack of insight into their abilities related to overall daily tasks and were unable to accurately rate their overall scores. It can also be argued that at the time of predischarge, the individuals’ daily tasks require decreased abilities as compared to postdischarge, when the help of nursing staff is not present. Once returned home, participants might gain a clear picture of their abilities which results in a lower overall SIGA score. Furthermore, perhaps the estimates of help time needed were not accurate (the student investigator noted that patients often seemed to have difficulty in making these
estimates). Finally, the rating of help time might have been influenced by the amount of help available as opposed to the amount of help that would have been optimal.

To counteract a lack of insight which some participants may have experienced, the use of naturalistic environments for occupational therapy becomes critical for patients to be successful at home. Because it may not be possible to practice each daily occupation before the predischarge SIGA scores, changes to the administration of the assessment can be made. At time of postadmission, the therapist could ask the participant to describe a typical day at home, listing all of the occupational tasks required of the participant. Then at the time of predischarge, the therapist could then restate the daily tasks before the participant gives a final overall SIGA score. This may result in eliminating false optimism at predischarge and allow participants to give more accurate scoring of overall abilities at predischarge.

Three SIGA scores on specific occupations were predictive from predischarge to postdischarge, whereas the overall SIGA scores were not. It is possible that individuals were better able to rate their abilities when being asked about a particular task that was an important personal goal. On the other hand, these client-centered goals may have been a focus of treatment throughout therapy. A recent study by Colquhoun et al. (2012) found that, when clinicians used the COPM and client-directed goals, clinicians made improvements in areas such as knowledge of client perspective, clinical decision making, and identifying more client occupation-focused issues. When participants identified specific goals at postadmission of the SIGA, the occupational therapist had the opportunity to incorporate these tasks into therapy treatment sessions. Through practice of individual SIGA goals, participants could give more accurate scoring at predischarge with individual goals as compared to overall SIGA scores.

Common goals identified by participants were found by McNulty and Beplat (2008) when they studied the validity of the COPM. Five client-identified occupational performance
concerns that were common include walking and/or transfers, self-care (bathing, dressing), travel (visiting and transportation), house cleaning tasks, and shopping (grocery or other). Roberts et al. (2008) examined problem areas reported by individuals using the COPM; out of 240 total responses, 142 were related to self care. Areas identified by participants at postadmission in this study also focused on self-care. In combination with the previous study by Hasenmeier (2008), a total of 204 self-identified areas by 63 participants, can be analyzed in terms of self-care, instrumental occupations, and leisure. Self-care includes; dressing (29), walking to a particular place (45), transfers (28), toileting (10), bathing (21), standing for engagement in a specific occupation (13), and feeding (1). Instrumental occupations include; meal preparation (24), home management tasks (18), and driving (5). There were seven goals related to leisure, including pet care, socializing, and hobbies.

Several implications for occupational therapy can be drawn from this study. As previous studies have shown, collaboration between the occupational therapist and patient during the initial assessment and goal making stage has several benefits. This provides the occupational therapist with insight into occupations meaningful to the client, providing a base for occupationally embedded sessions to be planned that are of interest to the client. Identification of goals can also enhance clients' knowledge of their abilities. When clients identified specific goal areas for improvement, their expectations for performances at home were more realistic.

Perhaps most importantly, the SIGA was responsive to changes in participants’ performance throughout the in-patient stay. The therapist can gain perspective as to whether or not the patient sees progress in valued goals. The very process of identifying goals might well motivate goal achievement.

There are several limitations to this study. First, there was a high rate of refusal for participation in this study. Also, individuals were excluded from the study based on decreased
cognitive status. There was one occupational therapist responsible for recruitment of participants from an individual facility, who also administered the postadmission and predischarge SIGA assessments. Another limitation in terms of external validity pertains to the inability to reach all participants for postdischarge SIGA scores. The method for data collection postdischarge was by telephone from a stranger, while the postadmission and predischarge information was gathered in person by the participant’s regular occupational therapist. Another limitation is that the occupational therapist administering the predischarge scores was not masked from knowledge of postadmission scores.

Suggestions for future research include reaching out to additional skilled nursing facilities and several occupational therapists to administer the SIGA assessment. When asking participants about overall ability for SIGA scoring, researchers could ask more probing questions into daily tasks to obtain more accurate scores. Future studies may also require a different method for gathering data pertaining to help time needed at home. Follow-up calls could include asking for a description of tasks where assistance is needed and using clinical judgment to determine accuracy of the response. Because of the difficulty in gathering information via telephone postdischarge, additional mailed surveys could be useful.

Acknowledgments

Thanks and sincere appreciation for co-investigator Melissa Gibboney, OTD, OTR/L, at Firelands Regional Medical Center for her commitment in recruiting participants and gathering data for the completion of this study.
References


occupational performance and client priorities in the community: the COPM.


Table 1.

*Responsiveness of the SIGA from postadmission to predischarge.*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Postadmission</th>
<th>Predischarge</th>
<th>Gain</th>
<th>t</th>
<th>p</th>
<th>Cohen’s Effect Size</th>
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<sup>a</sup>Cohen’s effect size is calculated as the change score divided by its standard deviation and then divided by the square root of the difference between 1 and the correlation between the postadmission and predischarge score (Cohen, 1988, p. 48).

<sup>b</sup>Stratford, Binkley, and Riddle (1996) recommended calculating the effect size as the change score divided by the standard deviation of the postadmission score.

<sup>c</sup>Statistics are not appropriate because of small sample.