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Utilization of the Swedish Version of the Assessment of Communication and Interaction Skills

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Abstract

Introduction: The Assessment of Communication and Interaction Skills is based on the Model of Human Occupation, and is used when observing a client's skills to communicate and interact with others while performing an occupation. The utility and psychometric status of an assessment is critical for treatment planning in occupational therapy. The aim of the current study was to examine the utility of the Swedish version of the Assessment of Communication and Interaction Skills from the perspective of occupational therapists working in the field of mental health, considering its clinical relevance and potential for implementation.

Method: **Eight occupational therapists performed 116 assessments. Most of the 58 clients had affective or anxiety disorders.** Descriptive and qualitative analysis were performed.

Results: In 76% of the assessments, the occupational therapists perceived that they had obtained a deeper knowledge of the client's communication and interaction skills. This supports the clinical relevance of the assessment. Concerning the implementation potential and time required for using the assessment, all occupational therapists considered it reasonable.

Conclusion: The Swedish version of the Assessment of Communication and Interaction Skills is appropriate to use in the field of mental health for supporting occupational therapists in the treatment planning process.

Introduction

The basis for all kinds of intervention in occupational therapy is assessment implying to identify whether the client has an occupational performance weakness that influences his or her skills to fulfil activities of daily living. From the outcome of the assessment, the needs of the client can be identified, and it can thus be determined whether occupational therapy is needed (**Creek 2014**). Furthermore, as early as 1988, Barris et al. (1988) stated that the assessment also should organize the gathered data in way that supports the development of a treatment plan.

Several structured assessments have been developed for use with the Model of Human Occupation (MOHO). The use of MOHO-based assessments supports the occupational therapist to identify problems and set treatment goals (Kielhofner 2008).

In occupational therapy, it is important to clarify what the client wants and needs to do, and to measure the actual occupational performance. Furthermore, the client and the occupational therapist have to negotiate before the goals of the intervention can be established. The MOHO helps the occupational therapist to consider these aspects. The MOHO is client-centred and occupation-focused. It facilitates theory-based understanding on the part of the client and gives a theoretical base for intervention. It gives also the occupational therapists a language to use when explaining and reflecting on their practice.

By using MOHO-based assessments the occupational therapists facilitate evidence-based practice. The MOHO attempts to explain how humans are motivated and choose to do things in their patterns of everyday life, and in their individual capacities. In the MOHO skills are grouped into three types: motor skills, process skills and communication and interaction skills. Skills are defined as observable, goal-directed actions in the model. Consequently, by assessing skills as they are described in the MOHO the occupational therapist can relate the outcome to the everyday life of the client.

Occupational therapists ought to use assessments for both planning and documenting the effectiveness of intervention. It is important to use sound and trustworthy tools in practice since the planning of further intervention plan is based on the outcome of the assessment. Communication and interaction skills are necessary for individuals to be full participants in everyday life in the community. People with mental health impairments have reduced skills to engage in social relationships mainly deepening on deficient communication and interaction skills (Brown and Stoffel 2011). Consequently, to address and assess communication and interactions skills in the area of mental health is highly warranted.

Description of the assessment

The Assessment of Communication and Interaction Skills (ACIS) is one of the MOHO-based assessments (Kielhofner 2008). It was developed in 1989 by Simon (1989). Communication and interaction skills are defined in the model as the ability to convey intentions and needs and to coordinate social action to act with other people. The ACIS is used in order to investigate a client's skills to interact and communicate with others in the course of performing an occupation. Although the assessment was originally developed in the field of mental health, it has been used with clients having a wide range of impairments (Kielhofner 2008).

The ACIS is an observational assessment that comprises 20 items related to three domains: physicality (contacts, gazes, gestures, maneuvers, orients, postures), information exchange (articulates, asserts, asks, engages, expresses, modulates, shares, speaks, sustains) and relations (collaborates, conforms, focuses, relates, respects). All items are defined and exemplified in the manual of the assessment.

The client can be assessed in four different settings: open, parallel task, cooperative group and one-to-one. Furthermore, the settings can be described as natural, a simulated life role or

unrelated to life roles. The client and the occupational therapist must together determine appropriated settings for observation. Observation time is recommended to range from 15 – 45 minutes. Every item in the ACIS is rated on a four-point scale from “4= Competent” to “1=Deficit” when the skills are used (Forsyth et al. 1998).

Previous studies

In 1998, Forsyth et al. presented version 4.0, and that version was examined in a study by Forsyth, Lai and Kielhofner (1999) where the Rasch approach was used when analysing the ACIS data from 117 clients with psychosocial disabilities. Internal and construct validity was found in the study, as well as reliability. Version 4.0 was translated into Swedish (ACIS-S).

The scientific merit of the Swedish version of the ACIS has been described in a study by Kjellberg et al. (2003). Eighteen occupational therapists working in a mental health setting rated 67 clients. The Rasch analysis supported rater reliability, and internal and construct validity, indicating that the ACIS-S has good measurement qualities.

Haglund and Thorell (2004) investigated whether the items of the ACIS-S were stable over settings. Nine occupational therapists working in a psychosocial context performed 71 ratings of 16 clients in various settings. The findings showed that their communication and interaction skills were context-dependent. Thus, occupational therapists in practice need to be aware of the context-limited validity of the ACIS-S and may assess the client in a variety of settings.

In a Norwegian study, the ACIS was examined regarding the utility in mental health departments including practitioners and occupational therapy students. The study showed that using the assessment facilitated the development of the treatment plan and served as a concrete support when communicating with clients. In addition, the findings implied that using the assessment in practice gave concrete data for describing the client’s communication and interaction skills to other team members (Bonsaksen et al. 2011). However, the ACIS-S

has not been investigated in terms of its utility in Sweden, which is crucial for the implementation of an assessment in practice.

Utility

According to Polit and Beck (2004, 2008), the utility of an innovation, for example, testing a new assessment in practice, can be evaluated by studying its implementation potential, clinical relevance and scientific merit. The implementation potential comprises the transferability of the innovation in the setting, and feasibility, which addresses practical issues and the cost/benefit ratio, namely, potential benefits, risks and costs that may result from implementing the innovation in practice. Transferability implies the fit of the innovation in the specific setting, such as whether the innovation serves the target groups of both clients and, in the current study, occupational therapists. In addition, administrative and financial aspects as well as time required for its use are factors that are related to transferability. Feasibility concerns the organizational support and whether the implementation of the innovation is consistent with the occupational therapists' functions. Feasibility also refers to available resources, such as equipment and material, necessary skills for using the innovation in practice, and available tools for its evaluation. Clinical relevance includes whether the innovation gives support to the practitioners for solving problems in their clinical work, and the degree of relevance of the innovation in practice. Does the innovation assist the occupational therapist in decision-making and in choosing appropriate interventions? Scientific merit concerns psychometric studies that have been performed in relation to the innovation (Polit and Beck 2004, 2008).

Aim

Since the validity and reliability of the assessment had already been tested (Kjellberg et al. 2003), the aim of the current study was to examine the utility of the Swedish version of the Assessment of Communication and Interaction Skills from the perspective of occupational

therapists working in mental health, considering its clinical relevance and potential for implementation.

Materials and method

Participant selection and procedure

The selection of participants for this study was performed during a one-day course on the MOHO and on the use of the ACIS-S. The course was run by the two authors of the present study. Eighteen occupational therapists attended the course. They all worked in psychiatric care for adult clients, providing both in- and outpatient care. At the end of the course, the participants received information regarding the coming study and 13 occupational therapists decided to take part in it. During the following four months, the occupational therapists used the ACIS-S (Haglund and Kjellberg 2012) when they identified that the assessment could be a helpful tool in their everyday practice. Eight occupational therapists finally completed the study. The number of performed client assessments is shown in Table 1. The occasions varied between nine and 20, with a mode of 15 performed assessments for each occupational therapist. **The data collection process is described in Figure 1.**

Insert Table 1 about here

Insert Figure 1 about here

Self-reported questionnaires

Three self-reported questionnaires were constructed concerning the utilization of the ACIS-S, i.e. its implementation potential and clinical relevance, based on Polit and Beck (2004, 2008). The questionnaires were built up with nominal and ordinal scales, mostly closed-ended questions and a few open-ended ones.

The first questionnaire was completed by the end of the course day and included 11 questions. Ten close-ended questions collected demographic data on the occupational therapists, including workplace, information the number of years of work since graduation, level of education, knowledge and use of MOHO. Furthermore, the participants were asked whether they routinely evaluated their clients in clinical practice and what kind of assessments they used. In addition, the last close-ended question focused on whether they were in need of an assessment in the area of communication and interaction. Only one open-ended question was included in this questionnaire, and this dealt with what type of requirements they had for an assessment to function in practice.

The participants completed the second questionnaire after each performed ACIS-S. Four questions were included in this questionnaire. Three of them were about implementation potential (Polit and Beck 2004, 2008); two of these were close-ended and one open-ended. The close-ended questions were “How long did it take you to complete the assessment?” and the next was “How do you perceive your ability when performing the ACIS-S?” The open-ended question focused on what kind of practical benefits they have had when using the ACIS-S. The fourth question related to clinical relevance (Polit and Beck 2004, 2008) and was formulated as follows: “Regardless of your previous knowledge of the client, do you feel that this assessment gave you in-depth knowledge of the client?”

After the occupational therapists had completed all the assessments, they were asked to respond to the third questionnaire reflecting their total experience of using the ACIS-S. This questionnaire included eight questions concerning both the clinical relevance and the implementation potential of the ACIS-S. Six close-ended questions captured the clinical relevance regarding: use of the ACIS-S in future work, treatment planning, communication with the client and the team. In addition they were asked if they had received support in the use of the ACIS-S when documenting the medical reports, and if they were willing to

recommend the ACIS-S to a colleague. Two of the close-ended questions were formulated as follows: “Has the application of the ACIS-S influenced your communication with the client?” and “Would you be willing to recommend the ACIS-S to other colleagues?” The implementation potential was the focus of one open-ended and one close-ended question. The subjects were asked whether they considered any changes were necessary to improve the utility of the ACIS-S, and were requested to give concrete examples. The last question concentrated on whether the participants felt it was necessary to attend a course on utilizing the ACIS-S.

Data analysis

Eight occupational therapists took part in the study and performed 116 ACIS-S assessments, which were sent to the authors; in addition, they responded to three questionnaires, which made a total of 132 questionnaires. These data were analysed quantitatively and qualitatively. Descriptive statistics with frequencies and percentages were used for describing the fixed alternative answers in the three questionnaires, the demographic data of the clients assessed and the occupational therapists. The computer programme used was Microsoft Office Excel version 2010. Written comments on the open-ended questions in the questionnaires were analysed using qualitative directed content analysis (Hsieh and Shannon 2005). The analysis was based on the theoretical concepts used in the study; clinical relevance and implementation potential. These concepts became the predetermined categories used in the analysis. **In order to improve the trustworthiness of the study several strategies were considered. Validity was increased through the use of two analysts (the authors) and their ongoing discussions regarding the findings. The coded data were checked against the definitions of the theoretical concepts in the study; clinical relevance and implementation potential (Polit and Beck 2004, 2008). To increase the dependability of the study, the two authors discussed the coding of data into the categories throughout**

the process and reached a consensus (Krefting 1991). Peer examination was conducted by discussing the results with a group of researchers (Patton 2005).

Ethical considerations

This study was not associated with the ethical risk criteria in Sweden (SFS 2003 p460), so no ethical review was required. For example, no method aiming to affect the research subject was used, nor was any encroachment on the subject applied and no physical or psychological harm for the research subject could be identified. However, the study was designed according to the ethical guidelines for research in the humanities and social sciences of the Swedish Research Council (Vetenskapsrådet 1990) and the booklet “Good research practice” (Vetenskapsrådet 2011).

Results

Characteristics of the clients

The clients (n=58) in this study were 60% (n=35) female and 40% (n=23) male.

The average age of the clients was 39 years, ranging from 23 to 67 years old. The clients had a range of diagnoses related to their mental health. The majority 40% had affective disorders followed by anxiety disorders (24%) and schizophrenia (14%) according to the International Statistical Classification of Diseases and Related Health Problems (ICD) (WHO 2010).

Characteristics of the occupational therapists

In total, eight occupational therapists participated in the study. All worked in psychiatric care, mostly in outpatient care. The number of years of experience with their work ranged from less than one year up to 16 years (mean: 8). All except one of the occupational therapists had a Bachelor of Science in Occupational Therapy, and one of these also had a Master's degree in Occupational Therapy. **All of the occupational therapists applied the MOHO in their**

clinical practice and regularly used different assessments. Every one responded “Yes” to the question on whether they were in need of an assessment regarding communication and interaction. All except one of the occupational therapists performed assessments each day, and one carried out several assessments per day, so the study assessors were experienced.

Implementation potential

In total, 116 assessments on 58 clients were performed by eight occupational therapists. Five of the occupational therapists performed several assessments on clients during one day; thus, 58 assessments on 19 clients were performed on one day.

Initially, the occupational therapists responded to an open-ended question about what requirements they had for an assessment to be used in everyday practice. They reported that an assessment should not be time-consuming to administer in practice and that the manual should be easy to use and be structured i.e. implementation potential.

The second questionnaire showed that the time used for the observation period varied between 2 and 91 minutes (mean: 30 minutes) and the time for rating varied between 5 and 60 minutes (mean: 20 minutes). The time required for the observations and time for rating were reported as a “Reasonable amount of time” in 91% (n=106) of the performed assessments.

Ten assessments (9%) were rated as “Taking a long time” for both time for observation and time for rating. The occupational therapists’ perception of their ability to perform the ACIS-S assessments was rated by 54% (n=62) as “Good” while 49 (42%) rated their ability as “Fairly good”. Four percent (n=4) perceived their ability as “Not so good”.

In the third and last questionnaire, seven occupational therapists considered that **the manual included sufficient information for using the ACIS-S in practice** but one found it necessary to participate in a course in order to learn how to use the ACIS-S. Two found that there was a need to develop the manual further with more detailed descriptions of the items. In addition, one occupational therapist suggested that the domain ‘information exchange’

could be further developed in regard to the item 'speak'. Each of the 20 items has an explanation of what it is intended to measure and this is supported by concrete examples. Obviously this occupational therapist thought that the explanation and examples for the item "Speak" did not give enough support when scoring this item.

Clinical relevance

In the first questionnaire, the occupational therapists stated that, for an assessment to be clinically relevant, it was important that it was supportive when gathering data when the clients performed an occupation and identified the clients' deficits. In addition, it was also emphasised that the outcome of the assessment could be used when communicating with the client as well as with other team members. If this were the case, the clinical relevance would increase.

The responses in the second self-reported questionnaire showed that the ACIS-S in 76% (n=84) of the assessments resulted in deeper knowledge about the clients' communication and interaction skills. However, 24% (n=26) of the assessments indicated that the occupational therapists did not gain deeper knowledge about the clients' communication and interaction skills.

All except one of the occupational therapists stated, in the last questionnaire, that using the ACIS-S had influenced their communication with the client. Using concepts of the domains and items in the ACIS-S has clinical relevance when the occupational therapist communicates with the client about the information that has been gathered for setting treatment goals and implementing interventions.

The use of the ACIS-S when gathering data on the clients' communication and interaction skills had been supportive in the decision-making for the eight occupational therapists when developing treatment plans and interventions. All occupational therapists reported that they had integrated data from the ACIS-S when writing in the clients' medical reports. Seven of

the occupational therapists found that the ACIS-S had had an impact on their information when they reported to other team members about the status of the clients' communication and interaction skills. Eight occupational therapists stated that they would continue to use the ACIS-S in their clinical practice and that they would also recommend that colleagues use the instrument.

There were no tendencies for ceiling or floor effects when analysing the use of the rating scale in the 116 assessments, since all alternatives on the four-point rating scale were evenly distributed among each occupational therapist. The most used setting was cooperative groups (n=48) and the most frequently used observation situation was simulated life role (n=72) (Table 2).

Insert Table 2 about here

Discussion

According to the MOHO, communication and interaction occur in a complex environmental context and involve cultural, political and economic factors, the physical and social environment, and occupational settings. The relationship between humans and the environment is reciprocal. The environment affects what people do, and communication and interaction with other people are embedded when performing activities. When performing the ACIS-S, the occupational therapist thus needs to ensure that the contexts and activities are meaningful and relevant for the client, since this is essential for obtaining valid data from the rating process (Haglund and Kjellberg 2012). Kielhofner (2008) argued that communicating and interacting in social situations as a human being cannot be standardized. The findings in the present study show that communication and interaction skills were used in a variety of contexts (Table 2) as is recommended in the Swedish manual. Occupational therapists are

recommended to assess a client four to six times in different settings. **The reason for this is that occupational therapists need to find and use a variety of contexts that are meaningful and necessary for the client to act in since communication and interaction is context-dependent. To translate the result of one assessment to another context is not necessary valid, therefore occupational therapists require information from a number of assessments in order to understand and identify the clients' communication and interaction skills (Haglund and Kjellberg 2012).**

This complexity can be considered as a threat to utility since the ACIS-S can be considered as a time-consuming assessment. One requirement that was reported from the first questionnaire concerning potential for implementation was that an assessment needs to be performed within a short time. The time used for the observations in the study varied between two and 91 minutes (mean: 30 minutes); whereas the time intervals in the manual (Haglund and Kjellberg 2012) were 15-45 minutes. There is a problem when the time used for observation is too short or too long since this can be considered as a threat to validity. The occupational therapists in the study used 5-60 minutes (mean: 20 minutes) when carrying out the ratings. This can be compared with the estimated time in the manual (Haglund and Kjellberg 2012) of 5-20 minutes depending on the experience of the user of the ACIS-S. Even if the range of times for rating was wider in this study than in the manual, the majority of occupational therapists perceived that the time used was reasonable. The use of the ACIS-S met the need for an acceptable expenditure of time in the present study. Despite this, further research will need to address the amount of time required since this is a critical aspect of implementation. Nearly all the occupational therapists stated that the manual **comprised sufficient information for using the ACIS-S in daily practice.** Nevertheless, three of them reported that the items could be even more specific. This needs to be considered in future research.

In the first questionnaire, the occupational therapists stated that a clinically relevant assessment should be activity-based and that collection of data should focus on the problems of clients, since this gives indications for formulating goals and choosing interventions. A Norwegian study (Bonsaksen et al. 2011) and our study show the same pattern regarding clinical relevance, since using the assessment influenced the development of the treatment plan positively. Another parallel between these two studies is that the ACIS-S can be relevant to use when working in multi-professional teams and reporting in written form or orally about a client's communication and interaction skills.

The current study's positive findings regarding the utility of the ACIS-S, together with the scientific merit of the Swedish version of the ACIS (Kjellberg et al. 2003) lead to the conclusion that the ACIS-S can be considered as a good evidence-based tool for occupational therapists in the field of mental health in Sweden. Performing valid, reliable and clinically relevant assessments of communication and interaction skills may result in interventions that support participation in different environments for clients and contribute to the development of evidence-based practice.

Methodological considerations

The sample in this study included eight occupational therapists who regularly performed assessments in their daily practice. This can be considered as a potential source of bias; on the other hand, this was a relevant group since they were experienced assessors. The sampling procedure could have been more systematic, so the results cannot be generalized, but they could be applied to similar mental health contexts. The small number of occupational therapists (n=8) is a limitation, but the study is based on 116 assessments and 132 questionnaires. There is a need in future research to include a larger number of assessors both inside and outside the field of mental health.

The rate of dropouts needs to be considered. Five out of thirteen occupational therapists that decided to participate in the study did not complete the study. One moved to another part of the country. Two occupational therapists gave no reasons why they chose not to participate. Two other occupational therapists declared that they had too heavy a workload and could not prioritize using the ACIS-S. It could not be excluded that these occupational therapists' perceptions of the utility of the assessment may not have been as positive as those who completed the assessments and answered the three questionnaires.

It can also be argued that another shortcoming of this study is that all involved occupational therapists were working in mental health and all had completed a one-day course in the MOHO and on the use of the ACIS-S. In other words, they may have been too similar. The MOHO, the theoretical base of the assessment that all raters had been trained in, may define what they perceived in the observation situation. However, we assert that different theoretical orientations and perspectives may cause rater bias. To reduce rater bias, the theoretical orientation, in this case the MOHO, can instead ensure that all raters understand the content of the assessment in a similar way.

Almost all individuals with mental health impairments have problems with communication and interaction (Brown and Stoffel 2011) therefore, using the ACIS-S must be considered as reasonable in the present study since the included participants had mental health impairments. The aim was to investigate the utility of the ACIS-S; consequently, the context in which it was tested provides a basis for using the assessment.

Conclusion

On the basis of previous work and the present study, the ACIS seems to elicit accurate information (reliability), measure what it is intended to measure (validity), and be usable in practice. It has been tested in different cultures and different healthcare contexts, although it is used more frequently in the field of mental health. The results of the current study show that

the ACIS-S is an appropriate and valuable assessment to incorporate into practice for clients in the field of mental health who have difficulty in communication and interaction. The ACIS-S supports occupational therapists in becoming evidence-based practitioners. Since the ACIS-S is based on the MOHO the outcome of the assessment can be related to this model and consequently may facilitate the generation of treatment goals and a rational approach to intervention.

Key findings

- **Using ACIS-S required a reasonable amount of time, confirming the implementation potential in Sweden.**
- **ACIS-S provides occupational therapists in Sweden with knowledge useful for treatment planning.**

What the study has added

The findings support the conclusion that the ACIS-S is reasonably easy to implement and has clinical relevance for occupational therapists in the field of mental health in Sweden.

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Table 1. Assessments per client performed by each occupational therapist

Occupational therapist (n=8)	Assessment (n=116)	Client (n=58)
A	20	6
B	15	9
C	18	6
D	10	5
E	15	10
F	12	4
G	17	13
H	9	5

Table 2. Alternative settings in ACIS-S and the distribution of the used settings^a (n= 114)

	Natural	Simulated life role	Unrelated to life roles	Total
Open	6 (5%)	25(22%)	0	31(27 %)
Parallel task	0	1(1%)	3(3%)	4(4 %)
Cooperative group	1(1%)	33(29%)	14(12%)	48(42 %)
One to one	4(4%)	13(11%)	14(12%)	31(27 %)
Total	11(10 %)	72(63 %)	31(27 %)	

Note: ^a missing data: 2.

Figure 1. Data collection process.