Routine standardised outcome measurement to evaluate the effectiveness of occupational therapy interventions: essential or optional?

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ROUTINE STANDARDISED OUTCOME MEASUREMENT TO EVALUATE THE EFFECTIVENESS OF OCCUPATIONAL THERAPY INTERVENTIONS: ESSENTIAL OR OPTIONAL?

Abstract

This article presents the case for why the effectiveness of occupational therapy intervention should be monitored and reviewed by the routine use of rigorous and well-standardised outcome measures. Occupational therapists must be committed to contributing to the evidence base related to the effectiveness of occupational therapy interventions and know how to select and apply valid and reliable outcome measures in day-to-day practice, service evaluation and research activities. Drivers for evidence-based outcome measurement are explored and the need for an increased utilisation of patient reported outcome measures is discussed. Some measures, many of which are available as Norwegian versions, are suggested as potential outcome measures for occupational therapy services.

Key words: Outcome measurement, assessment, evaluation, Validity, Reliability, evidence based practice

THE DEFINITION AND PURPOSE OF OCCUPATIONAL THERAPY ASSESSMENT AND EVALUATION

Occupational therapists need to have clear definitions of frequently used terms related to assessment, evaluation and outcome measurement. Explicit understanding of what we mean by a particular term helps us to communicate effectively about the assessment process and explain assessment results. However, the first challenge for any occupational therapist accessing international literature on assessment and evaluation is the inconsistent definition of key terminology. Lack of consensus within our profession is problematic because a common terminology enables us to share ideas and information and facilitates international collaboration and learning. Occupational therapists also need to have a common understanding of key terms which are shared with:

- recipients of occupational therapy services and their carers
- other health care professionals (particularly colleagues working as members of the same multi-disciplinary team)
- referral sources
- colleagues taking over the person's care/management at discharge destinations
- the managers and commissioners of the service and policy developers

Laver-Fawcett (2007) undertook an extensive review of occupational therapy and rehabilitation literature related to these terms and has proposed definitions (Laver-Fawcett, 2007; 2012) which will be used within this article.

Within occupational therapy literature, the term *assessment* has been used to refer to a process, action and/or a tool (e.g. Duncan, 2009). Assessment is a complex and multi-faceted process undertaken in order to obtain a comprehensive profile of the person's current and previous occupations and roles, and to identify his/her values, interests, strengths, needs, priorities and risks (Laver-Fawcett, 2012). It is required to understand the complex relationships between the person's body structure and function, activity, participation, environmental factors and personal factors (World Health Organisation, WHO, 2002). Assessment requires occupational therapists to select and apply a range of informal and standardised data collection methods (interviews, observations, questionnaires and document review) and access a range of sources (the person, other health and social care staff involved in the person's care, and informal care givers). Information collected through assessment needs to be accurate because it informs «the negotiation of outcomes, setting of goals, and selection of therapeutic interventions» (Laver-Fawcett, 2012, p. 604). Assessment is usually conducted at several points during the occupational therapy process, this can include:

- an initial assessment to inform goal setting and provide a baseline
- ongoing assessment to review the person's response to intervention
- evaluation of outcomes at the end of intervention
- post-discharge follow-up review (Creek, 2003)

Evaluation is an important component of a wider assessment process. It is undertaken to examine the extent to which intervention has resulted in the anticipated outcome. Evaluation can be undertaken at an individual client, group or service level. Corr (2003) stated that «a service might be very good, but without evaluation its value diminishes because there is no objective measure of it being «very good»» (p. 235). Therefore, every occupational therapy service should develop an evidence-based outcome measurement protocol to evaluate the effectiveness of its service (Law, Baum and Dunn, 2005; College of Occupational Therapists, 2013). Evaluation requires assessment data to be collected at least twice to consider changes over a period of time. Both assessment and evaluation can be considered from the point of view of the person (self-report), formal or informal care-givers (proxy-report) and/or the therapist.

Occupational therapists often use a *dynamic assessment* approach (Haywood and Lidz, 2007) which focuses on variations in the person's function under different conditions. Like an evaluation, it requires a test-intervene-retest (Lidz, 1991) assessment process; however, it differs because the test-intervene-retest process occurs on one occasion and is undertaken to obtain information about how potential interventions can facilitate the person's performance. This is useful for evaluating the impact of cues, mediation, feedback, changes in the environment or alterations to the task demand (Laver-Fawcett, 2012). Dynamic assessment is more frequently undertaken using an unstandardised approach, and the need for this form of assessment

can be a reason given for the lack of application of standardised measures. However, there are a few standardised occupational therapy tools that have a dynamic assessment element, these include:

- *the Executive Function Performance Test* (EFPT; Baum, Morrison, Hahn and Edwards, 2008)
- the *Contextual Memory Test* (CMT; Toglia; 1993)
- the *Structured Observational Test of Function* (SOTOF; Laver and Powell, 1995)

Outcome measurement is a formal and standardised approach to evaluation. It is required in order to examine the effectiveness of an intervention or care management plan. The routine implementation of valid and reliable outcome measures is an essential component of evidence-based occupational therapy (Law and McColl, 2010).

Creek (2003) defined an occupational therapy *outcome* as: «an agreed, clearly defined, expected or desired result of intervention (*predetermined outcome*); the result of therapeutic processes, which may be different from the initial objectives of therapy (*actual outcome*)» (p. 56). The World Federation of Occupational Therapists (WFOT; 2010a) explained that occupational therapy «outcomes are client-driven and diverse and measured in terms of participation, satisfaction derived from occupational participation and/or improvement in occupational performance» (p. 1). Therefore, occupational therapists need a range of robust outcome measures to evaluate aspects of the person's function, occupational performance of needed and desired activities, and participation in roles and occupations. Outcome measures should also focus on a person's satisfaction with the outcomes achieved and his/her views of the service provided. Outcomes of occupational therapy do not always relate to improvements and may involve the reduction of unwanted symptoms, maintenance of function in relation to a progressive illness, delay and/or prevention (Creek, 2003). Small changes in function can result in substantial differences to a person's quality of life and to the degree of care-giver burden. Therefore, the selection of appropriate outcome measures and the responsiveness of the selected outcome measure to detect the amount of anticipated change are critical.

There are many reasons why occupational therapists undertake assessment and it can be helpful to categorise assessment in terms of the underlying purpose for the assessment and the planned use of obtained data. Understanding purpose is critical because this influences the required evidence base underpinning a standardised test. Assessments have been categorised in terms of four main purposes (Table 1): descriptive, predictive, discriminative and evaluative assessment (Hayley, Coster, and Ludlow, 1991; Law, 1993).

IDENTIFYING AND APPRAISING STANDARDISED ASSESSMENTS

A standardised test is «a published measurement tool, designed for a specific purpose in a given population, with detailed instructions provided as to when and how it is to be administered and scored, interpretation of the scores, and results of investigations of reliability and validity» (Cole et al, 1995, p. 22). Developing and standardising a measure is a complex, lengthy and costly process (COT, 2013) and should not be undertaken lightly. There are now many well standardised occupational therapy measures available internationally and some useful resources for identifying potential measures for practice and research. For example, Asher's (2007) «Annotated Index» provides a comprehensive overview of test critiques for standardised measures of use to occupational therapists. The texts by Law and McColl (2010) and Law, Baum and Dunn (2005) also provide critiques of many useful measures. Occupational Therapists can find value information from wider rehabilitation literature and websites, for example: Turner-Stokes (2000) provided recommendations for a «basket» of rehabilitation outcome measures for the British Society of Rehabilitation Medicine; the Rehabilitation Measures Database (http://www.rehabmeasures.org/default.aspx) provide test critiques for a wide range of measures; and the Stroke Engine Assess website (http://strokengine.ca/assess/index-en.html) provides evidence-based test critiques of assessments which can be used with people with stroke. There are several things which occupational therapists should consider when critically appraising potential measures. These are summarised in Table 2. It can be beneficial to use a test critique form (e.g. Laver-Fawcett, 2007) to ensure a comprehensive critical appraisal of potential measures. For students and therapists less familiar with undertaking test critique more detailed guidance and an example completed test critique form have

Purposes of Assessment	Description
Descriptive	• Undertaken to provide a description of the person's current circumstances, past history, roles, habits, interests, level of occupational engagement, performance component skills and deficits and desired outcomes. May be used to identify symptoms and problems to help aid diagnosis. • A descriptive assessment may be undertaken to gain information about environmental (physical, social, cultural-institutional) barriers and facilitators which need to be optimised or overcome to ensure a successful intervention. • The assessment may be undertaken on one occasion or over a period of time until sufficient information has been obtained to inform clinical decision making. • Data is used to inform the development of aims, goals, negotiate outcomes and leads to intervention planning. • Standardised descriptive tests should have adequate content, construct and face validity. • If they are to be administered by more than one therapist a high level of inter-rater reliability is also important.
Discriminative assessment	• Used to distinguish between individuals or groups. • Comparisons are usually made against a normative group or another diagnostic group. • Discriminative assessment can be useful to refine a differential diagnosis, to assess a client against referral criteria, to prioritise referrals, to assess the person against criteria related to service provision or placement options, or when evaluating a person's level of dysfunction in relation to expectations of performance of other healthy people of that age. • Standardised discriminative tests should have established discriminative validity; this may include data on concurrent validity.
Predictive assessment	• Undertaken when therapists need to make predictions about a person's future function or behaviour. • The therapist may use the results of an assessment undertaken in one environment to predict likely function in another environment. • In psychosocial practice areas therapists may undertake predictive assessment for a number of reasons, including prediction of: likely function when discharged home as part of a pre-discharge assessment (e.g. level of independence, ability to safely use appliances); and risk assessment (e.g., of harm to self or others, abuse, wandering, falls) • Standardised predictive tests should have established predictive validity. Standardised predictive tests should have established predictive validity..
Evaluative assessment	• Undertaken to evaluate changes in symptoms over time and/or the effectiveness of the intervention or management plan. • Needed to establish whether the level and nature of expected changes (outcomes) have been achieved. • Requires at least two assessments undertaken at different times. The baseline assessment data is used for comparison at the review, discharge or when perceived significant change needs to be explored further. • Qualitative and/or quantitative data may be used to inform evaluative decisions. • Standardized evaluative tests are also known as outcome measures. • Standardized evaluative tests should have high levels of test-retest reliability and established responsiveness to change.

Table 1: Summary of four clinical purposes of assessment. *© Delmar, Cengage Learning (Laver-Fawcett, 2012)*

been provided by Laver-Fawcett (pp. 350-359).

CONSIDERING THE CULTURAL RELEVANCE OF POTENTIAL OUTCOME MEASURES

Although there are a lot of standardised measures now available, many have been written in English and cultural sensitivity issues can be a limitation to their application in Norway. Occupational therapists need to critically appraise potential international measures and then conduct studies to explore ecological validity and address cultural issues. This is particularly relevant to measures related to activity and participation because the meanings attached to activities and the manner

Relevance	Will the test provide information that addresses the purpose of the assessment? Does the test have good face validity for this client group and service?
Feasibility	Can the test be administered with available resources (time, staff, budget, space)? Do you have the competency to undertake this test or will further training be required? Some tests take time to learn to administer and score; some may only be administered by a practitioner with particular credentials; or they may require specific equipment and materials that are costly, technical, or difficult to transport.
Utility	Who will have access to the test results and benefit from this data and how will they benefit? Is the cost worth the benefit for the clients being served and to the service? The information collected must have value, be meaningful to the client, and provide either data that inform the intervention or will evaluate outcomes. Cost to purchase the test, test materials or consumables (e.g. food for a kitchen assessment) and/or training to administer the test need to be considered. Although there may be an initial outlay to buy a standardised test, because they are evidence based, valid and reliable they improve the effectiveness of assessment and enable information to be collected in the most efficient way.
Reliability	How accurately do scores reflect a true performance of the individual? Is the test stable across time and raters?
Validity	Does the instrument measure what it proposes to measure? If a predictive test does it predict what it was developed to predict. If a discriminative test does it discriminate between the identified groups?
Role	Are there other professionals involved with the person who have undertaken assessments and what information has been obtained already? What is the therapist's role in this setting occupational therapy specialist or generic mental health worker?
Setting	Will the assessment be undertaken in the person's home or place of residence, an in-patient unit, occupational therapy department, day service or community venue?
Model of Practice	Occupation-based or skill-based? What are the assessments that have been developed to relate to the chosen model?
Age	Developmental and chronological age should be taken into account. If it is a norm-referenced test, the sample used to provide normative data should include people of the same age.
Diagnosis	You may choose a test that has been developed for people with a specific diagnosis or to aid the assessment of symptoms.
Time of day	Does the client's functioning vary depending on medication, fatigue or time of day? Do you need to assess the person's maximum or minimum level of functioning?

Table 2: Criteria for Selecting Standardised Tests. *© Delmar, Cengage Learning (Laver-Fawcett, 2012)*

in which they are practiced is recognized as being «highly culture-specific» (Ballinger & Wiles, 2001, p. 254). It is worth undertaking initial draft translation and checking cultural relevance and utility in a pilot study before the time-consuming work of doing a full back translation is undertaken. For example, an «informal draft translation was used to investigate the appropriateness» of the *Assessment of Communication and Interaction Skills* (ACIS) in Norway (Bonsaksen, Myraunet, Celo, Granå and Ellingham, 2011, p. 332).

Where the time-consuming work to provide Norwegian translations has already been undertaken, increased use of these measures in research and practice should be encouraged. For example, there are Norwegian translations for two other assessments linked to the Model of Human Occupation (MOHO), the Worker Role Interview (WRI) and the Work Environment Impact Scale (WEIS; Model of Human Occupation Clearinghouse, 2014).

When developing a culturally relevant version of an existing standardised measure, test developers need to strike «a balance between the emic perspective (seeking equivalence within the culture) and the etic perspective (maintaining comparability)» (Alegria et al., 2004, Discussion, paragraph 3). Some existing measures can be translated into Norwegian and then subjected to further research to ensure cultural relevance. Where test items may need to be developed to be specific for a Norwegian population, the methods used to develop existing standardised measures

should be examined to inform the methodology for developing Norwegian equivalent measures. For example, the *Activity Card Sort* (ACS; Baum & Edwards, 2008) is a well-recognised measure (Eriksson et al., 2011) used to assess older people's occupational histories, select activities as a focus for intervention and evaluate changes in participation levels. However, the «integrity of the ACS is dependent on selection of culturally relevant, common activities as items» (Packer, Boshoff & DeJonge, 2008, p. 201). Cross-cultural research has demonstrated that the ACS has improved validity and utility when the activities depicted are relevant to people's culture and environment (e.g. Eriksson et al., 2011) and eight versions of the ACS have now been developed, including two for European countries; for the Netherlands (ACS-NL; Jong, van Nes and Lindeboom, 2012) and for the United Kingdom (ACS-UK; Laver-Fawcett and Mallinson, 2013). If a Norwegian version of the ACS was to be developed then researchers should aim to produce a measure that included activities culturally relevant to Norwegian older people and that replicated the Q-sort methodology, test administration and scoring method used for other ACS versions.

THE DRIVERS FOR EFFECTIVE OUTCOME MEASUREMENT

Robust outcome measures are required for practice, research and service evaluation. In order to provide evidence-based practice it is critical that valid and reliable outcome measures are incorporated routinely into the occupational therapy process (College of Occupational Therapists, 2013; Law and McColl, 2010). There are significant drivers that require occupational therapists to routinely use outcome measures in practice. This driver towards the better measurement of outcomes has been articulated internationally, for example, the World Health Organisation highlighted the importance of systematically examining outcomes related to participation (WHO, 2002). However, the routine use of standardised outcome measures is not universal in occupational therapy practice (Unsworth, 2011). Governments recognise that the quality of health and social care services can be improved through increased application of standardised outcome measures to provide robust information about outcomes and the drivers for routine outcome measurement are increasing. There are important opportunities for the development of occupational therapy services within the Norwegian health care system, for example in response to the Long-term Care Plan 2015 (Norwegian Ministry of Health and Care Services, NMHCS, 2006) and Dementia policies (NMHCS, 2006b). The Norwegian government considers it «to be vital to strengthen the research and development work linked to the long term care services and care of the elderly» (NMHCS, 2006a, p. 12) and recognises that «a stronger focus on activation, well-being and social initiatives requires a greater multi-disciplinary scope in the long term care services with more space for specialists such as occupational therapists» (p. 21). The NMHCS (2006a) has promised to «strengthen the practice-related care research» (p. 16) and improve «multi-disciplinary expertise and more research on the elderly's health and service offer» (p. 20). The Norwegian Dementia 2015 strategy (NMHCS, 2006b) has highlighted the important role of «day programmes» and «wishes to boost the capacity and quality of day programmes for this group. A stronger focus on culture, activities and well-being measures will require greater interdisciplinary breadth, with a greater emphasis on social education, occupational therapy, physiotherapy and social work» (p. 20). Law et al (1999), in a critical review of research literature that examined the effectiveness of activity programmes for older persons with dementia, concluded that «statistically significant results» supported «the use of activity groups for older persons with dementia for improving their well-being, communication, mental status and emotional state». However, they did identify the need for future research owing to the limited evidence base (only four studies matched their criteria for robust research studies), and they suggested that future research «should focus on determining the functional outcomes of activity programmes, and the influence of the environment during these programmes» (p. 4). In order to fully optimise service development opportunities in Norway, occupational therapists need to be ready with consistent, high quality outcome data to evidence the contribution that can be made through occupational therapy interventions. Through the «appropriate use and recording of outcomes data» occupational therapists can «demonstrate their broad remit across a range of service configurations and requirements» (COT, 2013, p. 3).

CLIENT-CENTRED OUTCOME MEASUREMENT

Whilst it is very important for occupational therapists to be cognisant of the pre-determined outcomes expected by the funders/commissioners of their service (these may be articulated in a service specification or commissioning contract) and carefully select outcome measures that can be used to evidence that these outcomes are being delivered, it is also of paramount importance for occupational therapists to establish a client's *desired outcome* as part of the initial assessment process. Where possible, a client-centred intervention plan to achieve desired outcomes is then developed, but if this is not realistic or feasible within the confines of the pre-determined outcomes that the service is expected to deliver, then the therapist will need to collaborate with the client to agree on a more realistic *negotiated outcome* (articulated as an intervention goal). At this point, the therapist should undertake a baseline assessment related to the negotiated outcome in order to evaluate, after an agreed time period, and establish the actual outcome achieved (Laver-Fawcett, 2012). A lack of clarity regarding desired versus service level-predetermined outcomes can lead to client dissatisfaction with the service provided. This is very relevant today given the increased expectation for *Patient Reported Outcome Measures* (PROMS; Department of Health, 2008). There is an increased «drive to extend the use of outcome measures to demonstrate both effectiveness and satisfaction with services received» (COT, 2013, p. 3). PROMS are used to obtain information about health from the point of view of the service user (patient/client). They are being used at both population levels, for example to examine the range of health status and health needs of a population, and at an individual service user level to evaluate service outcomes. PROMS data is being used «for the purposes of audit, quality assurance and comparative performance evaluation» (Mackintosh, Gibbons, Casañas i Comabella and Fitzpatrick, 2010, p. 3). Mackintosh et al. (2010) explained that there are three types of PROMS which have been referred to as «generic health status» PROMS, «preference –based» PROMS and PROMS that are «Population-specific measures». They go on to define these as follows:

> «Generic instruments comprise items intended to be relevant to the widest range of patient conditions and the general population. Preference-based measures are also broad in content but additionally provide utilities or values regarding health (for use in, for example, cost-utility analyses of interventions). Condition-specific instruments are often more focused on a particular disease or health condition (for example, diabetes), a patient population (for example, older people), a specific problem or symptom (for example, pain), or a described function (for example, activities of daily living).» (Mackintosh, et al. 2010, p. 3).

As client-centred practitioners (WFOT, 2010b), who value the person's perspective and gather this through self-report assessment methods and standardised tools, occupational therapists are well placed to implement Patient Reported Outcome Measures into routine practice. There are some well-established self-report occupational therapy measures that can be used as PROMS. For example, the *Canadian Occupational Performance Measure* (COPM; Law et al, 2005) is a very well established self-report outcome measure that has been translated into 24 languages, including Norwegian, and is now used in over 35 countries (for example, see: Carswell et al, 2004; Rehabilitation Measures Team, 2013). It has been categorised as providing Patient Reported Outcomes (Rehabilitation Measures Team, 2013). Following a semi-structured interview and a prioritisation of occupational performance problems through the person's self-rating of importance, up to five occupational performance areas are self-rated for both performance and satisfaction (Law et al, 2005).

In addition to specific occupational therapy outcome measures, occupational therapists should also consider using generic health status PROMS that measure constructs of relevance to occupational therapy outcomes, such as Quality of Life. Quality of Life is a multidimensional construct and comprises physical, emotional, mental, social, and behavioural components (Janse et al., 2004). The WHO defines QOL as «an individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns» (WHO, 2014, paragraph 2). An example Generic PROM is the *World Health Organisation's Quality of Life measure* (WHOQOL) which is a multi-lingual and multi-generic quality

of life scale that was developed internationally. There is an additional 32 items that can be added onto the WHOQOL to assess Spirituality, Religiousness, and Personal Beliefs WHOQOL (SRPB; WHO; 2012). There is a shortened version, WHOQOL-BREF, which comprises 26 items and has evidence of validity and reliability (Skevington, Lotfy and O'Connell, 2004). It covers the four domains of: physical health; psychological health; social relationships; and environment. It also examines the person's perception of overall quality of life and perception of overall health. The study to evaluate its psychometric properties used cross-sectional data (n = 11,830 adults) obtained from a survey of adults undertaken in 23 countries (Skevington, Lotfy and O'Connell, 2004). The Norwegian version of the WHOQOL-BREF has been reported to have satisfactory psychometric properties (Hanestad, Rustøen, Knudsen, Lerdal and Wahl, 2004) and has been used as a research measure in Norway (e.g. Johansen, Wahl, Eilertsen, Weisaeth and Hanestad, 2007).

Another measure of quality of life of use to occupational therapists is the *Euro-Qol EQ-5D*. In a review of quality of life health measures, Németh (2006) categorised Euro-Qol as a Preference-based measure. EQ-5D is a standardised measure of health outcome and can be used with people with a range diagnoses receiving a range of interventions. The results provide a descriptive profile and a single index value for health status (EuroQol Group, 2014). EQ-5D is a self-report measure and can be used as a survey or administered via interview. It is quite straightforward and quick to undertake and instructions for completion are provided within the questionnaire. EQ-5D has been used for a number of research studies in Norway (e.g., Nord, 1991; Høifødt, Lillevoll, Griffiths, Wilsgaard, Eisemann, Waterloo and Kolstrup, 2013). Another potential PROM for occupational therapists to consider using in Norway is the *Norwegian Function Assessment Scale* (NFAS; Brage, Fleten, Knudsrod, Reiso, and Ryen, 2004 as cited by Østerås et al., 2008, p. 2). This was designed as a self-report instrument «to assess the need for rehabilitation, adjustment of work demands among sick-listed persons as well as the rights to social security benefits» (Østerås et al., 2008, p. 2). The NFAS has 39 test items which link to the activities/participation dimension in the WHO (2002) International Classification of Functioning, Disability and Health (ICF) and which assess both physical and mental functioning in working life and activities of daily living.

In *conclusion*, all occupational therapists have an ethical responsibility to ensure they have the up to date knowledge and skills to select, implement, analyse and report the results of standardised outcome measures. Occupational therapists must be committed to contributing to the evidence base related to the effectiveness of occupational therapy interventions and use valid and reliable outcome measures in both service evaluation and research activities. Time spent identifying and critically appraising potential standardised measures to use in practice and spent learning to administer a standardized outcome measure should be prioritised as important continuing professional development activities. Such activities contribute to the wider development of the service and can be of significant benefit to service users if their implementation results in more efficient and effective assessment and a better understanding of the actual outcomes that are being achieved. Occupational therapists who choose to continue to use non-standardised measures must consider their limitations related to accuracy and reliability (Laver Fawcett 2007). Using non-standardised assessments to evaluate interventions is no longer acceptable to service commissioners/funders. If therapists continue to use unstandardised methods of evaluation the «potential impact on professional credibility and the welfare of service users» should not be underestimated (COT, 2013, p. 2). If standardised outcome measures are not being routinely used in your occupational therapy practice, act now!

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