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The Satisfaction with Daily Occupations (SDO-13) scale: Psychometric properties among clients in primary care in Sweden

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Abstract

This paper describes the results to expand and develop the use of the Satisfaction with Daily Occupations Scale (SDO-13). Data were collected in primary care before (I) and after intervention (II) among clients with stress-related disorders and musculoskeletal pain. The Cronbach's alpha values of the SDO-13 satisfaction scale were 0.80 and 0.88. Convergent validity was assessed against global occupational satisfaction and general health, resulting in $r_s = -0.65$ ($p < 0.001$) and $r_s = -0.46$ ($p < 0.001$). The satisfaction scale could not discriminate between the primary care sample and a psychiatric sample ($p = 0.15$), whereas number of current occupations could ($p < 0.001$). The SDO-13 was not sensitive to change ($p = 0.92$). Future studies need to explore criterion and construct validity based on more dissimilar samples and more standardized interventions. Application of these results to practice are discussed.

Key words

Stress-related disorders, musculoskeletal pain, internal consistency, convergent validity, criterion validity, sensitivity to change

A basic assumption underlying the tenets of occupational therapy is that an individual's engagement in occupations promote his or her health and well-being (Kielhofner, 2008; Wilcock, 2006), which has been supported in a major literature review (Law et al., 1998b). Consequently, occupational therapists focus on and assess their clients' abilities and possibilities for performing the occupations that the client wants and needs to do, as well as assessing factors that influence occupational performance. The terms "activity" and "occupation" are both found in the literature. In this article "activity" is used to denote a set of tasks and actions (e.g., financial report writing), while "occupation" involves a set of activities that is performed with some regularity and is linked with some kind of meaning to individuals, such as accounting (Townsend & Polatajko, 2007).

How people occupy themselves is dependent on their age and the culture in which they live and act (Kielhofner, 2008; Wilcock, 2006). People of working age are expected to work to earn their own living and contribute to the societal production, which in turn may give the worker an identity that is valued by the society (Baker et al., 2003; Jacobsen, 2001). Most adults also take care of their home and family. Furthermore, people need to care for themselves, including doing things for pleasure or relaxation, which in turn contributes to recovery and enhances health in general (e.g. Pressman et al., 2009). Thus, work, managing one's home, leisure and self-care are important elements of occupational therapy practice to consider when assessing satisfaction with everyday occupations among adults of working age. Expectations from others, as well as the client's own expectations, might influence his/her perceptions of and satisfaction with the occupations he/she performs (Kielhofner, 2008; Wilcock, 2006). Satisfaction with everyday occupations has in turn shown to be closely related with health and well-being (Eklund & Leufstadius, 2007).

A new instrument measuring satisfaction with everyday occupations, the Satisfaction with Daily Occupations (SDO) (Eklund, 2004), was developed in Sweden to target relevant aspects of everyday occupations and specifically address the client's satisfaction with currently performing, or not performing, an occupation. The SDO addresses four areas of everyday occupations: work and work-related occupations (four items), leisure occupations (two items), domestic occupations (two items) and self-care (one item). These four areas were established using current occupational therapy literature. The construct as such, satisfaction with daily occupations, rests upon motivation and needs theory, such as intrinsic needs for occupation (Wilcock, 2006). For each item, the client is asked to respond to whether he or she performs the occupation with a yes or no. Then, using a seven-point scale, the client rates the degree of satisfaction with his or her performance or with not performing on each item. The SDO was originally developed and aimed for use in psychiatric rehabilitation and has been found to have good psychometric properties (see Eklund & Gunnarsson, 2008). It has also shown good psychometric properties when used with participants diagnosed with rheumatic diseases (see Eklund & Sandqvist, 2006) and has been hypothesized that it might thus be useful in other contexts.

The aim of the present study was thus to further develop the SDO for use with a wider target group and test it for use in the primary care context, as well as a psychiatric setting, by evaluating its psychometric properties in that context, in terms of internal consistency, convergent validity, criterion validity, and sensitivity to change. Specifically, primary care was selected as their everyday occupational situation that differs from that of people with psychiatric disorder or rheumatic diseases. In fact, clients in primary care are on sick leave due to stress-related disorders and/or musculoskeletal pain, and those conditions are among the most frequent causes for sick leave in Sweden (Swedish Social Insurance Agency, 2013; 2014). People with stress-related disorders and/or musculoskeletal pain tend to have complex

patterns of everyday occupations and are often responsible for others, at home and/or in the workplace (Johansson et al., 2012). This study seeks to show that the SDO would exhibit a strong relation with global satisfaction with everyday occupations and a moderate correlation with general health. Furthermore, it was hypothesized that the instrument would discriminate between people with different diagnoses, in this study, a sample of primary care clients with stress-related disorders and musculoskeletal pain and a sample of clients with severe mental disorders.

Methods

Face Validity

The content of the nine-item SDO was discussed between the author of SDO and occupational therapists working in primary care in the south of Sweden with the aim of developing a SDO-version corresponding to their needs. Three meetings were held, involving ten occupational therapists, some of whom participated at more than one meeting. A summary of the discussions indicated that the therapists missed questions about planning and organizing the domestic tasks and duties, taking care of others, engaging in cultural leisure occupations and some further aspects of taking care of oneself. Five new questions were therefore added, addressing those areas. Furthermore, an item focusing work-related occupations in community-based day-care settings was not perceived as relevant for clients in primary care and thus deleted. Thus, this review resulted in a new version consisting of thirteen items, SDO-13, used for this study.

Sample

Occupational therapists in primary care in the south of Sweden were informed about the study and those interested in testing the SDO-13 were invited to the study. The criteria for including

clients in the study were: referrals to occupational therapists, being of working age and having problems with performing everyday occupations. In addition, since the SDO interviews were conducted in Swedish, the clients needed to be able to understand and speak Swedish. No inclusion criteria regarding diagnoses were set, but the study context made musculoskeletal and stress diagnoses likely. The occupational therapists informed those clients who matched the inclusion criteria above about the study and asked about their willingness to participate. Some of the clients met the occupational therapist for assessments of functional capacities or occupational performance, while others also completed a rehabilitation intervention.

The data collection was part of the clinical routines, but the clients were asked whether they agreed that an anonymized copy of their responses was used for research purposes. If they agreed, they signed a written consent. The study adhered to the Swedish Act concerning the Ethical Review of Research Involving Humans (SFS 2003: 460). According to that act, approval from an ethical review board is needed when informed consent is not obtained, or an intervention is part of the research, or if sensitive information is asked for. None of these criteria were applicable on the present study, and no application was thus made.

Twelve occupational therapists in the primary care setting, five of whom had participated in the development of the instrument, contributed with completed SDO-13 assessments from 1-29 clients each (median =7) for a total of 118 clients forming Primary Care Sample. The instrument was completed as part of the regular occupational therapy assessment. Seven of the occupational therapists also used the SDO-13 as an outcome measure after an intervention with each of them contributing a second assessments of 1-21 clients (median = 7) for a total of 50 clients. The interventions were group-based occupational therapy programs focusing on the clients' needs for managing their everyday occupations. The programs included information about stress and factors influencing on clients' everyday occupations, awareness of one's performance skills and limitations, and development of new

strategies for how to perform everyday occupations. Physiotherapy interventions, mostly body awareness, were also included in the programs. The interventions lasted between 7 and 20 weeks, which was thus the interval between the measurement points.

The SDO-13 was also used in community-based psychiatric day-care settings. These data were collected for a study that evaluated a free-choice reform within day-care services for people with psychiatric disabilities in a larger city in Sweden (Eklund & Markström, 2014) and the baseline data were reused for the current study. Four districts that represented a variation with respect to socio-economic factors were purposively selected. One of them, a sub-urban area, had a population with a large proportion of immigrants and low incomes. Two represented a variation of both affluent and poor areas, one with a central location and one that was more distant from the city center. The fourth district was a centrally located and privileged area with predominantly high-income earners. Community-based day-care settings in those districts were approached and invited to participate in the study. Six such settings existed, and all agreed to participate. Information meetings were then held at each setting and the clients were asked individually for their consent, orally and in written. Two occupational therapists administered the data collection and contributed with 77 completed SDO-13 assessments, forming Psychiatric Sample. This type of day-care settings provides meaningful everyday occupations and contributes with a social context for people with severe mental illness (Tjörnstrand et al., 2013). The characteristics of the clients are presented in Table 1. Other diagnoses in the Primary Care Sample were carpal tunnel syndrome (two clients), dizziness (one client), and fracture of the forearm (one client). In the Psychiatric Sample there was one person who had had a head trauma.

Table 1. Characteristics of the samples: number of participants (% of the sample) if nothing else is indicated.

		Primary Care Sample (measurement I)	Primary Care Sample (measurement II)	Psychiatric Sample
		<i>n=118</i>	<i>n=50</i>	<i>n=77</i>
Age¹ lowest-highest (mean), year		22-64 (45.7)	28-64 (48.2)	24-72 (51.6)
Gender	Men/women	18 (15 %)/100 (85 %)	8 (16 %)/42 (84 %)	33 (43 %)/44 (57 %)
Diagnostic clusters²	Stress-related disorders, depression	68 (58 %)	35 (70 %)	22 (29 %)
	Psychoses, bipolar disorders, neuropsychiatric disorders	0	0	41 (53 %)
	Musculoskeletal pain	46 (39 %)	14 (28 %)	0
	Other diagnoses	4 (3 %)	1 (2 %)	1 (1 %)

¹One missing response in Primary Care Sample (measurement I) and one in Psychiatric Sample.

²Thirteen missing responses in Psychiatric Sample.

Instrument

In the revised SDO-13, three items address work and leisure occupations respectively, four address domestic tasks, and three address self-care occupations (see Table 2) but is administered in the same manner as the original tool. As an interview, the respondent answers whether he or she currently performs an occupation or not, with *currently* defined as the past two months or at least once a week, depending on the item. The respondent then rates his/her satisfaction with performing the targeted occupation, or satisfaction with not currently performing the occupation. The same seven-point scale is used ranging from extremely dissatisfied (1) to extremely satisfied (7). Consequently, total ratings for the satisfaction scale may vary between 13 and 91, which forms the psychometric tool and its psychometric properties that need to be tested. The affirmative responses may be summarized if the number of occupations the respondent is currently involved in is of interest. The number of current occupations was included as a variable in the current study and was included in the analyses when relevant. Other psychometric tests of the SDO-13 have been made in parallel with the current study (Eklund et al., in press; Eklund & Morville, 2014; Manee et al., in press).

The clients were also asked to rate their global occupational satisfaction; “In general, how satisfied are you with your everyday occupations,” on a five-point rating scale where “1” signifies the greatest satisfaction as well as answering a question about general health from the MOS SF-36 (Ware & Sherbourne, 1992). This question consisted of: “In general, how would you say your health is” with a five-point response scale where a score of “1” represents the best possible health. This question is often used in research as a satisfactory one-item estimate of self-rated health (Bowling, 2005). The use of one single question to address life satisfaction and similar phenomena has been discussed among researchers and has received support when the aim is to gain a general view of the phenomenon in target (Cheung & Lucas,

2014; Yohannes et al., 2011). Demographics were also gathered in terms of age, gender, native country, and self-reported diagnosis.

Table 2. Content of the SDO-13 items

Item no.	Content
1	Presently employed or enrolled in college/ folk high school
2	Working or enrolled in college/ folk high school in past two months
3	Attending work training in past two months
4	Engaged in organized leisure occupations/ hobbies at least once a week in past two months
5	Performing leisure occupations/ hobbies on one's own at least once a week in past two months
6	Taking part in cultural occupations at least once a week in past two months
7	Doing household work, such as cleaning and cooking, almost daily in past two months
8	Doing repairs and/ or gardening in past two months
9	Organizing and planning the household work in the past two months
10	Taking care of children, parent or other close persons at least once a week in the past two months
11	Managing own personal hygiene on a daily basis
12	Doing physical exercises at least once a week in the past two months
13	Doing activities to relax at least once a week in the past two months

Procedure

For the primary care sample, the client received oral and written information about the study.

Once agreed, the clients completed the SDO-13 and thereafter answered the questions about

global occupational satisfaction, general health and demographic factors. Each client was given a code number by his or her occupational therapist for identification. Those who had completed an intervention were re-interviewed with the SDO-13, global occupational satisfaction and general health at discharge. The occupational therapist sent a coded copy of the completed questionnaires to the first author. The Psychiatric Sample met with an occupational therapist face to face at the day-care setting and the data collection followed the same procedure as for the Primary Care Sample.

Data analysis

The self-reported diagnoses were categorized into diagnostic groups in accordance with the International Statistical Classification of Diseases and related health problems (ICD-10) (World Health Organization, 2010) and further assembled into larger diagnostic clusters (cf. Table 1). Descriptive statistics were used to present demographic data and baseline measurements based on the SDO-13 satisfaction scale, number of current occupations, global occupational satisfaction and self-rated general health. The internal consistency of the SDO-13 satisfaction scale was estimated by means of Cronbach's alpha and Corrected Items-Total Correlations. According to Streiner and Norman (2008), the Cronbach's alpha value should be 0.7-0.9 and the item-total correlation should be between 0.2 and 0.8. The instruments and questions used in this study generate ordinal scales and non-parametric analysis methods were thus employed (Altman, 1991). The Spearman's Rank Correlation test was used to investigate construct validity, i.e. the correlation between the results of the SDO-13 satisfaction scale on the one hand and global occupational satisfaction and self-rated general health on the other. Estimations of the size of correlations were based on Cohen (1992) who suggested that correlations of 0.5 or more should be seen as strong, 0.3 – 0.5 as moderate, and 0.1 – 0.3 as weak. Criterion validity, i.e. comparing the SDO-13 results in the two samples, was analyzed

with Mann Whitney U-test. The Wilcoxon Signed Rank Test was used to calculate sensitivity to change between the first measurement and the follow-up after completed intervention in Sample A. The SPSS version 21.0 was used for all analyses and the level of significance was set to $p < 0.05$.

Results

The internal consistency of the SDO-13 satisfaction scale was good for the Primary Care Sample at both measurements. The alpha-value was 0.80 for measurement I ($n=118$) and 0.88 for measurement II ($n=50$). The Corrected Item-Total Correlations (CITC) were 0.307-0.544 and 0.402-0.704, respectively. The alpha-value for the Psychiatric Sample ($n=77$) was 0.83 and the CITC:s were 0.354-0.646. The clients' ratings of satisfaction according to the SDO-13, number of current occupations, global occupational satisfaction and self-rated general health at the first measurement are presented in Table 3.

Table 3. The samples' ratings for the SDO-13 satisfaction scale, number of current occupations, global occupational satisfaction, and general health at measurement I. The numbers indicate lowest-highest (mean) value.

Sample	SDO satisfaction scale	SDO number of current occupations	Global occupational satisfaction	General health
Primary Care, <i>n=118</i>	21-91 (61)	2-12 (8.4)	1-5 (3.0)	1-5 (3.9)
Psychiatric, <i>n= 77</i>	25-91 (63)	2-12 (6.7)	1-5 (3.9)	1-5 (3.4)

Note: For SDO satisfaction scale a higher value signifies a better satisfaction (rating alternatives: 1-7), while for Global occupational satisfaction and General health the lower value is better (rating alternatives: 1-5).

Convergent validity for the Primary Care Sample was indicated by a strong correlation between the SDO-13 satisfaction scale and global occupational satisfaction: $r_s = -0.65$ ($p < 0.001$), and a moderate correlation to general health: $r_s = -0.46$ ($p < 0.001$). The correlations were negative since low scores indicate good global occupational satisfaction and good general health whereas a high score indicates the best ratings on the SDO-13 satisfaction scale. The ratings of those clients in the Primary Care Sample, who participated at both measurement points, are shown in Table 4.

Table 4 Ratings on the SDO satisfaction scale, numbers of current occupations, global occupational satisfaction, and general health among those in Primary Care Sample who responded at both measurement points. The numbers indicate lowest-highest (mean) value.

	SDO satisfaction scale	SDO number of current occupations	Global occupational satisfaction	General health
Measurement I, n=49	21-91 (63)	3-12 (8.7)	1-5 (3.0)	2-5 (3.7)
Measurement II, n=48	20-89 (63)	4-13 (9.4)	1-5 (2.6)	1-5 (3.3)

Note: For SDO satisfaction scale a higher value signifies a better satisfaction (rating alternatives: 1-7), while for Global occupational satisfaction and General health the lower value is better (rating alternatives: 1-5).

The SDO-13 satisfaction scale was not found to be sensitive to change ($p=0.92$), while the number of current occupations showed a significant increase ($p=0.016$) at discharge. Besides, global occupational satisfaction and general health improved significantly between the two measurement points ($p=0.003$ and $p=0.004$, respectively).

The Primary Care Sample and Psychiatric Sample did not differ on the SDO-13 satisfaction scale, thus not demonstrating criterion validity ($p=0.15$). They differed regarding number of current occupations, however ($p<0.001$). Significant differences between the two samples ($p<0.001$) for both variables were also found for the questions about global occupational satisfaction and self-rated general health.

Discussion

The SDO-13 satisfaction scale showed good internal consistency, as indicated by Cronbach's alpha values and corrected item-total correlations, when used with clients with stress-related disorders and musculoskeletal pain in primary care. Convergent validity was also confirmed with a strong correlation between the SDO-13 satisfaction scale and global occupational satisfaction and a moderate correlation between the SDO-13 satisfaction scale and general health. The findings strengthen that the SDO-13 can be used to measure satisfaction with daily occupations. The SDO-13 satisfaction scale did not demonstrate criterion validity according to the two-group analysis between the primary care clients and clients in psychiatric day-care. The analyses showed, however, that number of current occupations could discriminate between the two samples and thus showed criterion validity. The differences between the samples suggest that although the primary care clients performed more everyday occupations than the clients in psychiatric day care, they were not more satisfied. This was contradicted by the results from the global occupational satisfaction scale, however, showing that the primary care clients were more satisfied with their global occupation.

The SDO-13 satisfaction scale's inability to discriminate between the two samples was partly contrary to findings in earlier studies (based on the nine-item SDO) which discriminated between some of the included samples, primarily between severely mentally ill

people and a healthy sample (Eklund & Gunnarsson, 2008) and between women with scleroderma and healthy women (Eklund & Sandqvist, 2006). The study by Eklund and Gunnarsson (2008) also included comparisons between different client groups (e.g. people in psychosis units, general psychiatric care, people with scleroderma) and the nine-item SDO satisfaction scale did not discriminate between these clinical groups.

A Danish version of the SDO-13 comparing healthy people and asylum seekers with poor ADL functioning identified a difference between the groups on the satisfaction scale (Eklund & Morville, 2014). This scale does thus not seem to discriminate between clinical groups, but shows criterion validity when groups with some kind of dysfunction are compared with healthy groups. The number of current occupations discriminated between the groups, however, and showed criterion validity. The fact that there were also differences between the groups on global occupational satisfaction and self-rated general health further underscores the limited criterion validity of the SDO-13 satisfaction scale in relation to the two samples of the present study and the adequate criterion validity of the number of current occupations.

The SDO-13 satisfaction scale did not reveal any statistically significant changes between the first and the second measurement. Again, however, there were significant changes on global occupational satisfaction and self-rated general health, and both were in a positive direction. This indicates that the SDO-13 satisfaction scale was not sensitive to change. Another explanation to the lack of statistically significant change on the satisfaction scale may be that the interventions in primary care were not effective in terms of satisfaction with everyday occupations, or that the time between the measurements was too short for any changes in satisfaction with the targeted occupations to be detected. Establishing new ways of performing everyday occupations is a complicated process that takes time (e.g. Åhrberg et al., 2010), and it possibly takes longer than the number of weeks the intervention programs in the present study lasted.

Limitations

There were limitations with this study. First, convenience sampling was applied. However, this should not be a major problem in an instrument study such as this, where the rating levels per se are not of interest. However, a sample with severe mental illness, such as the Psychiatric Sample, may have been suboptimal when assessing criterion validity in relation to a primary care sample. This was indicated by the findings, but interpretations may also be found in the literature. Depressive symptoms are a prevalent problem among people with stress-related disorders (Melchior et al., 2007) and musculoskeletal pain (Linton, 2000), but also among people with severe mental illness (Naidu et al., 2014). The sample with severe mental illness might thus have been similar to the Primary Care sample with respect to depressive symptoms, and future research on the SDO-13 should control for depressive mood.

Another issue is that the two samples differed regarding gender in that the Psychiatric Sample had a larger proportion of men (43 %) compared to the Primary Care Sample (15 %). This may have impacted on the findings in some unknown way and constitutes a weakness of the study.

The two measurement points for those who participated in an intervention came fairly close in time which may be a limitation. The interventions lasted between 7 and 20 weeks and those were also the approximate intervals between the measurement points. Longer follow-ups might have yielded other results in terms of sensitivity to change for the SDO-13 satisfaction scale. Another limitation with respect to sensitivity to change is that the interventions that took place between the two measurement occasions varied in length and nature, although they had common features such as a focus on how to handle stress and finding new strategies for how to perform everyday occupations. Some of the interventions

may still have been less effective and a more standardized intervention, known to be effective when evaluated with established outcome measures, would have been preferable when testing sensitivity to change.

Finally, only two items (global occupational satisfaction and general health) were used for assessing criterion validity in the present study, which might be regarded a weakness, although single-item questions are supported in research (Cheung & Lucas, 2014; Yohannes et al., 2011). A possibility in future studies aiming at further psychometric evaluation of the SDO-13 is to add other instruments, such as the Canadian Occupational Performance Measure (COPM) (Law et al., 1998a). However, the COPM differs from the SDO in that it is based on self-defined occupations, and was therefore not used for the present study.

Application to Practice

One of the positive outcomes of this study is that the SDO-13 was tested among clients who usually have great problems with their everyday occupations (Johansson et al., 2012; Persson et al., 2013) and are frequently occurring in occupational therapy in primary care in Sweden. Since occupational therapists in primary care also meet clients with diagnoses other than stress-related and musculoskeletal pain, it would be fruitful to include additional diagnostic groups in future studies of the instrument's psychometric properties.

The findings in the current study in terms of good internal consistency and convergent validity indicate that it is worth to continue the development of the SDO-13. However, the results concerning criterion validity and sensitivity to change of the satisfaction scale indicate the importance of further studies of the instrument in primary care contexts.

Conclusion

The study showed that the SDO-13 satisfaction scale had good internal consistency and convergent validity, but could not discriminate between a primary care sample and a sample with severe mental illness. The number of current occupations, however, showed criterion validity when applied to the two samples. Furthermore, the SDO-13 satisfaction scale was not sensitive to change as measured before and after a rehabilitation intervention, which is contrary to findings based on a previous, shorter version of the SDO. The findings suggest that further studies of the SDO-13's psychometric properties in primary care need to be performed, exploring its criterion validity among more dissimilar samples and after more standardized interventions. By use of samples with true differences regarding factors of importance for perceived satisfaction with everyday occupations, studies will show whether the SDO-13 is able to discriminate between different samples, i.e. has criterion validity. To evaluate sensitivity to change after more standardized interventions, known to be effective, will eliminate the possible influences of disparate interventions.

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Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper

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