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*Published in:*  
Scandinavian Journal of Occupational Therapy

*DOI:*  
[10.3109/11038128.2013.853097](https://doi.org/10.3109/11038128.2013.853097)

2014

[Link to publication](#)

*Citation for published version (APA):*

Eklund, M., & Morville, A.-L. (2014). Psychometric evaluation of the Danish version of Satisfaction with Daily Occupations (SDO). *Scandinavian Journal of Occupational Therapy*, 21(3), 166-171.  
<https://doi.org/10.3109/11038128.2013.853097>

*Total number of authors:*  
2

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Running head: Danish version of the SDO

## **Psychometric evaluation of the Danish version of Satisfaction with Daily Occupations (SDO)**

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## **Abstract**

**Aims:** The Satisfaction with Daily Occupations (SDO) scale assesses satisfaction within the domains of work, leisure, domestic tasks and self-care. The aim was to investigate the psychometric properties of the Danish version of the SDO when used with asylum seekers.

**Methods:** The participants were 93 Danes without known ill-health and 43 asylum seekers. They completed the SDO and rated their perceived health, activity level and general satisfaction with daily occupations. Translation into Danish and back-translation into Swedish was made by professional interpreters.

**Results:** Internal consistency was  $\alpha=0.75$  for the Danish sample and  $\alpha=0.79$  for the asylum seekers. The SDO distinguished between asylum seekers and the Danish sample, suggesting criterion validity. Concurrent validity, analyzed against general satisfaction with daily occupations, was indicated for both samples. Discriminant validity was indicated against self-rated health for both samples and against activity level for the Danish sample. There was, however, a correlation of 0.65 between the SDO satisfaction score and activity level for the asylum seekers.

**Conclusion:** The SDO exhibited satisfactory internal consistency and criterion and concurrent validity. The findings regarding discriminant validity were somewhat inconclusive. The Danish SDO may be regarded as psychometrically sound but further psychometric testing is needed.

**Key words:** Activity, health, reliability, validity.

## Introduction

People's subjective perceptions of their everyday occupations are closely linked with their health and well-being (1-3). Researchers have not been able to identify any causal relationships, but the assumption is that occupying oneself with stimulating and meaningful occupations promotes health. This makes it important to develop and evaluate instruments assessing subjective views of everyday occupations and ensure they are valid and reliable. Occupation is in this study defined as the unique experience of a person performing a certain task in a specific environment at a certain point in time, unlike the term activity which represents a shared idea of the nature of a task (4). For example, an individual taking a brisk morning walk on Christmas morning implies an occupation, whereas walking in general represents an activity, recognized by most people but not signifying a specific experience. Subjective perceptions of occupation are regarded as the personal experiences from performing an occupation, such as the meaning, value (5) and satisfaction (2, 6) it brings to the doer.

There are many aspects to subjectively perceived occupations, one of which is satisfaction with daily occupations. According to occupational therapy theory, the term occupational satisfaction is complementary to the term of occupational performance (7, 8) and is used to describe personal evaluations of day to day engagement. Adolph Meyer, cited by Yerxa (9), claimed that satisfaction is "doing and getting enough" (p. 413). This quote indicates that occupational satisfaction is an aspect of having one's needs satiated, in this case occupational needs. Wilcock (10, 11) argued that human occupations may fulfill three types of needs; i) those that are essential for survival; ii) needs related to exercising and developing capacities; and iii) needs in terms of flourishing as a person. Likewise, Law and colleagues (12) stated that occupations meet the person's intrinsic needs for self-maintenance, expression and fulfillment. These lines of reasoning are in line with motivational psychology, where

satisfaction is seen as the result of having one's needs met. Ryan and Deci, who formulated Self-Determination Theory (13), proposed that people have three innate needs, namely competence, autonomy and relatedness. These needs seek satisfaction and nurture intrinsic motivation, which is when behavior is the result of free choice and takes place without any obvious external rewards (13, 14). Intrinsically motivated behavior thus has obvious similarities with performing satisfying everyday occupations, and according to the aforementioned theoretical arguments, satisfaction with daily occupations is about having occupational needs satiated and being aligned with one's motivations and needs.

The construct of occupational satisfaction as delineated above is targeted in the interview-based instrument Satisfaction with Daily Occupations (SDO). It was originally developed for people with mental illness and studies have indicated it has good psychometric properties in terms of internal consistency, construct validity, test-retest reliability and sensitivity to change (6, 15, 16). It has also been shown to function adequately with people with physical disabilities and healthy individuals (17). The SDO targets satisfaction within four areas of daily occupations, namely work, leisure, domestic tasks and self-care. It generates a composite satisfaction score and an activity level score.

The present study is related to one that examines occupational performance and satisfaction among asylum seekers in Denmark. Earlier studies have shown that asylum seekers experience occupational deprivation, even though they have access to activities. One study showed that they used the activities as diversion and not as something meaningful and engaging (18). Asylum seekers are subjected to legal constraints, such as lack of accessibility to education and work, on top of the traumas that have led to fleeing and the suffering during the flight itself (19). They are in an uncertain situation where they have little or no control over their lives. The sum of this makes asylum seekers a vulnerable group and their occupational lives need to be described, including their satisfaction with daily occupations.

We thus found it warranted to examine whether the Danish version of the SDO had adequate psychometric properties when used with that population, in terms of internal consistency, criterion validity and aspects of construct validity.

## **Methods**

### ***Participants***

The study was based on two samples; a convenience sample of Danes without known ill-health or adverse circumstances and a sample of asylum seekers of Iranian, Syrian or Afghani nationality. These nationalities were chosen since they were the largest groups of asylum seekers entering Denmark at the time of the study. The sample of asylum seekers was consecutively selected and invited for the study as they went through a health control. Those who agreed and showed up at the appointed meeting with the researcher (the second author) were 36 males and 7 females. Their mean age was 30.2 years ( $SD=8.2$ ). The Danish sample included 48 occupational therapy students. Six of the students taking part in the project were also asked to contact six to eight persons from his or her circle of acquaintances, representing other ages compared to themselves and at least one of the opposite sex. This resulted in 93 participants, 21 males and 72 females, with a mean age of 30.5 years ( $SD=11.5$ ).

### ***The SDO instrument***

The SDO version used for this study had 13 items, compared to the original 9-item version devised for people with mental illness (6, 15). The extension consisted of items that (a) were considered less likely to render a high satisfaction rating and (b) covered additional facets of the four areas of daily occupations. Examples of such new items were organizing the household and exercising to keep physically fit. Each item has two parts, the first asking whether the respondent currently performs the targeted occupation or not. The affirmative responses are counted and form an activity score. The second part asks the respondent to rate

his or her satisfaction with the occupation at target. Thus, either the respondent presently performs the occupation or not, e.g. is working or unemployed, he or she rates the satisfaction with that condition. The respondent is instructed not to think of how he or she performs the occupations, unless the performance affects the satisfaction. Sample questions are shown in Figure 1, along with the seven-point satisfaction response scale. The satisfaction score may range between 13 and 91, whereas the activity score may vary between 0 and 13. The scores are used as separated scales of satisfaction and activity level, respectively. Unpublished data based on the Swedish 13-item version indicates the satisfaction scale has good internal consistency ( $\alpha=0.79$ ) and logical associations with other constructs, in terms of general satisfaction with daily occupations ( $r_s=0.46$ ) and self-rated health ( $r_s=0.20$ ). Internal consistency is not of relevance for the activity score, which is only about counting the number of current activities.

Figure 1 in here

The original SDO was translated into Danish and back-translated into Swedish by professional translators. The agreement between the original and the back-translation was generally very good, but a deviation was found for one item. The item concerned participating in work rehabilitation, and it is mentioned in the SDO item that this includes also rehabilitation through education projects. The Danish translation indicated regular education, which means that a correction was warranted.

### ***Items used to assess aspects of construct validity***

Two aspects of construct validity were targeted; discriminant and concurrent validity.

Discriminant validity is about the extent to which the instrument differs from a measure of a dissimilar construct, while concurrent validity indicates how closely a scale is related to a measure of the same construct (20). Research has concluded that self-rated health represents a

unique construct in relation to subjective perceptions of occupation (21) and that construct was therefore used to evaluate discriminant validity of the SDO. The first item from the SF-36 (22), considered as a good and valid one-item assessment of self-rated health (23), was used for the purpose. The wording is “In general, how would you say your health is?”, and a five-alternative response scale is used, where a score of one represents best possible health. For the present study a re-coding was done, such that a score of one represented worst possible health and five denoted best possible health, in order to simplify the presentation of findings.

The activity level score obtained through the SDO was also considered to reflect a construct other than satisfaction with daily occupations (2) and was used as another factor to estimate discriminant validity.

Analogously with the item targeting self-rated health, a single item was constructed to reflect general satisfaction with daily occupations. The wording was “In general, how satisfied are you with your everyday activities?”, and a score of one represented worst possible satisfaction and five best possible satisfaction. This item was used to assess concurrent validity of the SDO.

### ***Procedures***

The participants in the asylum seeker sample were invited to the study during their initial medical screening and then referred if interested. The study was reported in 2010 to the local ethical committee, who had no objection to the execution of the project (KF 01-045/03). The project was also reported to the Danish Data Protection Agency. General information about the project including information about voluntary participation, anonymity of identity, and confidentiality of the data collected was provided to the interested asylum seekers. The oral and written information about participation included that participation was voluntary and that



participation or lack hereof or withdrawal from the project would not influence the asylum seeker's case. This was also repeated at the start of every individual interview.

The written information about the project had been prepared in their native language, such that the asylum seekers should be able to read the information. If the asylum seeker was illiterate an interpreter was used. Final inclusion in the study was based on written informed consent. The routinely used Red Cross' telephone interpreters were used during the interviews. Interpreters were on stand-by even if the asylum seeker and the interviewer were able to communicate in the same language, in order to ensure that the language barriers were minimized. The use of a telephone interpreter has the advantage that the presence of a third person does not disturb the interview.

Regarding the Danish sample the students were asked to practice using the SDO during classes. As with the asylum seeker sample, information about the project including information about voluntary participation, anonymity of identity, and confidentiality of the data collected was provided. Oral consent, but not a written, was obtained from the students. This is in agreement with Danish standards for procedures used when the study group is not considered vulnerable and the study topic is not regarded sensitive. After an initial try-out, the students were asked to switch partners and do the interviews once more. Three students declined to participate. The six students taking part in the project were asked to find 6-8 participants amongst their families and friends. The students provided the above described information about the project to the participants and asked for their oral informed consent before the interviews took place.

## *Data analyses*

Internal consistency was evaluated by the Cronbach's alpha test and corrected item-total correlations (CITC). The limits for satisfactory internal consistency were set at 0.70 and for acceptable CITC at 0.20, in accordance with the literature (20).

The instruments were considered as ordinal scales, and therefore non-parametric statistics were used for the remaining analyses. Spearman's correlation test was employed to analyze discriminant and concurrent validity. These analyses were made in the two samples separately. In line with generally accepted guidelines (24), correlations between 0.1 and 0.3 were considered small, coefficients between 0.3 and 0.5 as small, and those greater than 0.5 as large. The test of criterion validity, evaluated by investigating whether the SDO could differentiate between the Danish convenience sample and the asylum seekers, was based on the Mann-Whitney U-test. Since the proportion of men and women differed between the samples, we also used the Mann-Whitney U-test to check if the SDO distinguished between males and females. The software used was the SPSS 21 (25).

## **Results**

Internal consistency was  $\alpha=0.75$  for the Danish sample and  $\alpha=0.79$  for the asylum seekers, thus within the range of a satisfactory level. All CITC values based on the Danish sample were  $>0.20$ , whereas one item, "performs self-care on a daily basis" (cf. Figure 1), had a low correlation with the total scale for the sample of asylum seekers. The CITC was 0.10 and deleting the item would raise the alpha value marginally to 0.80.

The mean rating (SD) on the satisfaction score was 54.3 (7.3) for the Danish sample and 38.9 (10.6) for the asylum seekers, and this difference was statistically significant ( $p<0.001$ ). Since the Danish sample was dominated by women and the sample with asylum seekers were predominantly men, we also checked whether the SDO distinguished between

the genders. The analyses did not indicate any such differences, either in the Danish ( $p=0.498$ ) or the asylum seekers sample ( $p=0.488$ ). Thus, the Danish SDO discriminated between the two samples and criterion validity was indicated.

The correlations between self-rated health and SDO satisfaction were  $r_s=0.31$  ( $p<0.001$ ) for the Danish sample and  $r_s=0.24$  ( $p=0.133$ ) for the asylum seekers, indicating discriminant validity. With regards to the activity score, the correlations to the satisfaction score was  $r_s=0.34$  ( $p=0.001$ ) for the Danish and  $r_s=0.65$  ( $p<0.001$ ) for the asylum seekers sample. This implies an unclear situation with respect to discriminant validity. There was a correlation of  $r_s=0.48$  ( $p<0.001$ ) between general satisfaction with daily occupations and the SDO satisfaction scores in the Danish sample. The corresponding correlation for the sample with asylum seekers was  $r_s=0.56$  ( $p<0.001$ ), and these results suggest concurrent validity.

## **Discussion**

A satisfactory alpha value exceeding 0.70 was found for both samples. One item, pertaining to performing self-care on a daily basis, had a CITC value of  $<0.20$  in the sample of asylum seekers, suggesting it did not fit in with the construct of satisfaction with daily occupations in that group. It is hard to explain why this occurred in the sample of asylum seekers, but it may be for cultural reasons, not revealed in the present study. Research has shown that there is a risk that messages get distorted during interpretation (26), which may be another tentative explanation. Based on this finding, deleting the item targeting self-care would be an alternative and that would increase the alpha value marginally. On the other hand, the scope of the SDO would be reduced, and that would be a reason for keeping the item also when the instrument is used with people representing non-western cultures.

The Danish SDO could distinguish between the two samples and may thus be regarded as possessing criterion validity. With respect to discriminant validity, the result was

not unanimous. The size of the correlations based on the Danish sample, although statistically significant, suggested discriminant validity in relation to both self-rated health and activity level. This was also the case regarding the association between SDO satisfaction and self-rated health in the sample of asylum seekers, where a correlation deemed as low (24) was obtained. However, there was a strong relationship between SDO satisfaction and activity level in the latter sample, rather suggesting concurrent validity. This was an interesting finding *per se*, and shows that in a situation where people lack everyday occupations, which has been shown to be the case in asylum centers (27), activity level and satisfaction with daily occupations are more closely related phenomena. Thus, for a person who is deprived of occupations, any arising activity might be welcomed and generate some satisfaction. Bearing the identified relationship in mind, the overall result still indicated discriminant validity and that occupational satisfaction was a construct in its own right compared to self-rated health, and for the Danish sample also in relation to activity level.

This first study of the Danish version of the SDO indicated good properties regarding the evaluated psychometrics. It may therefore be used for clinical and research purposes in the current version. The study was based on small conveniently recruited samples, however, and further evaluation is warranted, using the instrument with larger and broader samples. Moreover, further psychometric properties need to be investigated, such as test-retest reliability and responsiveness to change.

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The SDO is an interview-based instrument and each item has two parts. The first is fact-oriented and asks if the client does the targeted occupation. Please ask the client, and then circle yes or no. Then ask about the client's satisfaction with the occupation, regardless of whether he or she presently performs the occupation or not. Show the satisfaction scale (see below) to the client, and ask him/her to give his/her rating.

**Work**

2. Has been in competitive or supported work or has been studying during the past two months.

yes                      no                      ALWAYS note the satisfaction score \_\_\_\_ (1-7)\*

**Leisure**

4. Has during the past two months participated in some kind of organized hobby or leisure occupation (e.g., sports training or a study circle) at least once a week.

yes                      no                      ALWAYS note the satisfaction score \_\_\_\_ (1-7)\*

**Domestic tasks**

8. Has during the past two months been doing household chores almost daily (e.g., cleaning, cooking, doing laundry).

yes                      no                      ALWAYS note the satisfaction score \_\_\_\_ (1-7)\*

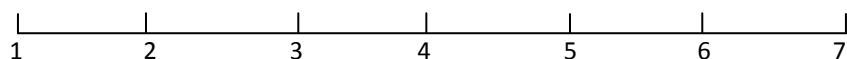
**Self-care**

11. Performs daily self-care on a daily basis (e.g., hygiene, care of the hair, dressing).

yes                      no                      ALWAYS note the satisfaction score \_\_\_\_ (1-7)\*

**\* The patient's satisfaction with performing/not performing the occupation is noted. The result of the performed occupation is not rated per se, but should be weighed into the satisfaction rating in case the result influences the satisfaction.**

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The satisfaction scale is presented on a separate sheet of paper and is formulated as below:



Worst possible

Best possible

Figure 1. Sample questions from the SDO.

(The Danish version can be obtained from the second author.)