

**Demographic factors associated with the Norwegian occupational wholeness  
questionnaire scales**

Authors:

Tore Bonsaksen<sup>1,2</sup> and Farzaneh Yazdani<sup>3</sup>

<sup>1</sup>Department of Occupational Therapy, Prosthetics and Orthotics, Faculty of Health Sciences,  
Oslo and Akershus University College of Applied Sciences, Oslo, Norway

<sup>2</sup>Faculty of Health Studies, VID Specialized University, Sandnes, Norway

<sup>3</sup>Faculty of Health and Life Sciences, Oxford Brookes University, Oxford, United Kingdom

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Author correspondence:

Tore Bonsaksen, Department of Occupational Therapy, Prosthetics and Orthotics, Faculty of  
Health Sciences, Oslo and Akershus University College of Applied Sciences, PO Box 4 St.

Olavs Plass, 0130 Oslo, Norway. E-mail [tore.bonsaksen@hioa.no](mailto:tore.bonsaksen@hioa.no) Tel. +47 67 23 66 11

### Abstract

**Background:** A new assessment purporting to measure the concepts being, becoming, belonging, and the higher order concept *occupational wholeness*, was recently subjected to factor analysis. The revised scales merged the being and becoming items into one scale related to the *self*, whereas the belonging items comprised two scales: belonging in terms of *closeness* and in terms of *relatedness*. To date, no studies have investigated sociodemographic factors related these scales.

**Aim:** This study aimed to examine sociodemographic factors associated with the scales encompassed by the Norwegian version of the Occupational Wholeness Questionnaire (N-OWQ).

**Methods:** An anonymous sample of 248 persons over the age of 18 years completed the N-OWQ along with sociodemographic information. Linear regression analysis was used to investigate associations between sociodemographic variables and the N-OWQ scales.

**Results:** None of the sociodemographic variables were significantly related to the *self* scale scores. Being female was related to higher scores on the *closeness* scale, whereas higher age and being employed were related to higher scores on the *relatedness* scale. None of the variables were associated with scores on the higher-order *occupational wholeness* scale.

**Conclusions:** The factors associated with the closeness and relatedness scales are consistent with prior research on personal relationships and on participation in society. Future studies may aim to develop a measure of *occupational wholeness* that incorporates the person's view of the relative importance of each of the comprised items.

**Keywords:** gender, occupational wholeness, sociodemographic factors, work

**Conflicts of interest:** There are no conflicts of interest related to this article.

## Introduction

The concept of occupation as central to human life goes back to William James, a pragmatic American philosopher in nineteenth century (Wilcock, 2006). However, the science of occupation started growing later within the context of occupational therapy. Wilcock first initiated the discussion around the holistic understanding of occupation and its relationship to health in 1998. In subsequent editions of the milestone textbook “An occupational perspective of health”, Wilcock and Hocking (Wilcock, 2006; Wilcock & Hocking, 2015) have expanded on the role of occupation as “doing, being, belonging and becoming” across the life span. They have associated human occupation with health and survival, but also with illness and discomfort – our doing does not always serve our interests best. The four concepts mentioned above are used to describe and explain the complex relationships between occupation and health.

Wilcock’s concepts are currently an important theoretical influence for the occupational therapy profession and for occupational science (Hitch, Pépin, & Stagnitti, 2014a, 2014b; Wilcock, 2006). While being refers to the self at present, becoming refers to how people see themselves develop in the future – who they strive to become. Belonging, on the other hand, refers to the aspects of the person’s environment, both cultural, social and material, that contribute to a feeling of being part of something that extends the self (Wilcock & Hocking, 2015).

Within the occupational therapy profession, it is a commonly held belief that people’s doing – their performance of the occupations that constitute everyday life – is the way by which they satisfy their needs. Amongst the most basic of needs, according to self-determination theory, are those for autonomy, competency and affiliation (Deci & Ryan, 2009). Reflecting the belief that people’s doing is the instrument for fundamental needs satisfaction, the first principle of the recently developed *Model of Occupational Wholeness*

(MOW) explicitly states that “being, becoming and belonging are basic needs that are met through doing” (Yazdani & Bonsaksen, 2017; p.31.).

The MOW can be seen as an addition to the debate about the occupational balance concept. Occupational balance has traditionally encompassed a quantitative and a qualitative aspect. The former implies that balance has been understood as performing an appropriate amount of occupations, not too little and not too much. The latter implies that it is not entirely a question of how much occupation – balance also refers to the appropriate composition of different types of occupations (Christiansen & Matuska, 2006; Wagman & Håkansson, 2014; Wagman, Håkansson, & Björklund, 2012). Occupational balance may also be conceptualized as living in integrity with values (Pentland & McColl, 2009) or as the optimal mix of occupations that produce the most happiness for the person (Veenhoven, 2009). Recent research found that occupational therapists differentiated between objective and subjective representations of occupational balance (Yazdani, Harb, Rassafiani, Nobakht, & Yazdani, 2017), and a comprehensive literature review similarly concluded that the objective aspects (patterns of daily occupation) and the subjective aspects (balance as experienced by the person) preferably should be discerned from each other (Eklund et al., 2017). In this context, the recently introduced concept of occupational wholeness refers to a sense of being in one piece as a whole, a sensation arising when people feel that their performance of occupations lead to their basic needs for being, becoming and belonging being met in their daily life (Yazdani & Bonsaksen, 2017). Thus, the occupational wholeness concept is not tied to objective measures of time use in different occupations or areas of occupation. Instead, occupational wholeness focuses on the person’s subjective perception of how he or she is affected by the performance of occupations throughout everyday life.

The 32-items *Occupational Wholeness Questionnaire* (OWQ; Yazdani, 2016) was developed to enable assessing how a person’s doing contributes a sense of wholeness. The

questionnaire concepts were first identified from previous research (Yazdani et al., 2017; Yazdani, Roberts, Yazdani, & Rassafiani, 2016), transformed into questions and mapped against two theories: occupational science, based on Wilcock (2006), and self-determination theory (Deci & Ryan, 2009). Subsequently, following a forward and backward translation procedure and review by an expert panel, a Norwegian version of the OWQ was introduced (N-OWQ; Bonsaksen et al., 2016). A psychometric study, aiming at shortening and validating its scales, found that an 11-item version of the N-OWQ functioned well (Bonsaksen & Yazdani, 2017). The revised being and becoming scale items loaded on one factor and were therefore collapsed into one five-item scale labeled *self*. On the other hand, the initial belonging scale items loaded on two different factors, and were therefore placed on two separate scales (*closeness* and *relatedness*), each comprised by three items. The scale items and their scoring is shown in Table 1.

[TABLE 1 ABOUT HERE]

Although the N-OWQ still does not take into account the relative importance of the scale items as experienced by the individual person, but simply asks about perceived effects of the person's doing, its three scales and the higher-order occupational wholeness scale appear to have good construct validity and item consistency (Bonsaksen & Yazdani, 2017). The first N-OWQ concept, measured with the five-item *self* scale, refers to a sense of meaning, value, autonomy, and fulfilment derived from the performed occupations. The second concept, measured with the three-item *closeness* scale, refers to a sense of closeness to family members and significant persons in general, as well as to important places. The third concept is measured with the three-item *relatedness* scale, and refers to being connected to the community and society in a wider sense. Finally, the higher-order *occupational*

*wholeness* concept is measured using the sum score of all the N-OWQ items, and refers to a broader sense of being whole, a person with integrity, as a result of the occupations performed on a daily basis.

The MOW builds on concepts well known to the profession, but aims also to assist in developing a more comprehensive understanding of how our daily occupations contribute to how we feel about ourselves in our current life situation. The model, as well as the N-OWQ instrument, is in a developing stage, and there is currently no evidence concerned with N-OWQ constructs' associations with other constructs. Detecting systematic empirical associations between the N-OWQ scales and logically connected phenomena would provide evidence of concurrent validity related to the N-OWQ scales, and might assist in developing the theory in a currently much debated area of occupational therapy and occupational science.

### **Study aim**

The aim of the study was to investigate associations between sociodemographic factors and the N-OWQ scales in a mixed sample of adult persons living in Norway.

## **Methods**

### **Design, survey procedure and sample**

The study had a cross-sectional survey design. An online survey was developed and participants gained access to the survey by a link distributed via social media channels (Facebook, Twitter, and LinkedIn). The link to the survey was also posted on professional groups on Facebook. These were mostly related to occupational therapy and occupational therapy education, as we believed – given the study's grounding in the occupational therapy profession – posting on such groups would attract the most interest. The participants were provided with the following information when accessing the online survey (here translated into English): “At Oslo and Akershus University College of Applied Sciences a new

questionnaire is being tested. It is designed to measure how the things we do in life impact on us in different ways. Responding to the questionnaire will take about 10 minutes. The survey is anonymous, and all persons over the age of 18 years who live in Norway are invited to participate.”

As the survey was composed in the Norwegian language, persons able to understand and adequately respond to the Norwegian language survey comprised the sample. The survey was open for accessing between 17 January 2017 and 31 January 2017.

### **Measures**

The original 32-item Occupational Wholeness Questionnaire (OWQ) was developed by Yazdani (2016). The Norwegian version of the OWQ (the N-OWQ; Bonsaksen et al., 2016) was translated by the first author and back-translated into English by a person proficient in Norwegian and in English. Subsequently, the instrument developer checked the content of the back-translated version for correctness and conceptual clarity by comparing it with the original version (Yazdani, 2016). No further amendments were required after the checking of the back-translation. Finally, a panel of Norwegian occupational therapists scrutinized the N-OWQ for conceptual clarity, wording and phrasing with a view to the Norwegian context for which the measure is intended. Several improvements were made to the instrument following the review panel discussion.

Following a recently conducted factor analysis, the number of items in the N-OWQ was considerably reduced, and the current version has 11 items comprising three scales: *self*, *closeness*, and *relatedness*, in addition to the higher-order *occupational wholeness* scale (Bonsaksen et al., 2017). Among the items on the *self* scale, the factor loadings ranged between 0.59 and 0.80 and the internal consistency of the items was 0.77. Among the *closeness* scale items, the factor loadings ranged between 0.71 and 0.86 and the internal consistency of the items was 0.70. Among the *relatedness* scale items, the factor loadings

ranged between 0.74 and 0.82 and the internal consistency of the items was 0.73. Including all items on the three scales to compose the *occupational wholeness* scale, the internal consistency of all items was 0.79. In addition to the N-OWQ, information regarding the participants' age, gender, work status and education level was collected.

### **Data analysis**

The data were entered into the computer program IBM SPSS, version 24 (IBM Corporation, 2016). Descriptive analyses were performed on all items using means (*M*), standard deviations (*SD*), frequencies and percentages as appropriate. A series of linear regression analyses were performed using each of the N-OWQ scales as dependent variables.

Independent variables were included in one block, and the models were constructed as *N-OWQ scale = age + gender + work status + education level*. For the regression analyses, education level was recoded as a categorical variable to reflect the commonly used dichotomy of education level in Norway: higher education (more than 12 years of education) versus no higher education (less than or equal to 12 years education). Similarly, work was dichotomized: not being in work or having part time work was coded 0, whereas having full time work was coded 1. Statistical significance for all analyses was set at  $p < 0.05$ .

### **Ethics**

As the collected data was not sensitive and not linked to the participants' identities in any way (i.e., all the data were anonymous), formal approval for conducting the study was not required. As part of the initial instructions for the survey, the participants were explicitly informed that completing and submitting the online survey would be considered as informed consent, and that the responses would be used for research purposes.

## **Results**

### **Participants**



The characteristics of the study participants are displayed in Table 2. The sample was largely comprised by women (91.5 %), most were working full time or part time (86.3 %), and most had some experience from higher education (76.6 %). Compared to men, women had higher scores on the closeness scale ( $M = 27.9$  vs  $M = 31.5$ ,  $p < 0.01$ ). Otherwise, there were no statistically significant differences between men and women in the sample.

[TABLE 2 ABOUT HERE]

### **Sociodemographic factors associated with the N-OWQ scales**

The results from the multivariate linear regression analyses are shown in Table 3. None of the variables were significantly related to the *self* scale scores, and the model explained 1.3 % of the outcome variance. Controlling for all variables in the model, being female was related to higher scores on the *closeness* scale, and the model accounted for 3.6 % of the outcome variance. Controlling for the same variables, higher age and being employed were related to higher scores on the *relatedness* scale. The model accounted for 9.2 % of the outcome variance, and this was the only model that reached statistical significance. None of the variables were associated with scores on the higher-order *occupational wholeness* scale, and the model explained 2.6 % of the outcome variance.

[TABLE 3 ABOUT HERE]

### **Discussion**

This study used a recently developed measure derived from the Model of Occupational Wholeness, and aimed to assess associations between scale scores and demographic characteristics of the sample. It was found that being female was associated with higher

scores on the closeness scale, and that higher age and being employed was associated with higher scores on the relatedness scale. Generally, little outcome variance was explained by the independent variables included in the statistical models.

### **Sociodemographic factors associated with the N-OWQ scales**

The findings of this study demonstrated a significant relationship between being female and higher closeness score on the N-OWQ. Floyd (1995) also studied gender and closeness among siblings and friends. The findings of that study showed that women and men reported no difference in their level of closeness in their relationships; however, closeness was manifested differently for women and men. In comparison, the closeness scale as found in the N-OWQ measure is generic and not only related to relationships between friends and siblings. In addition, what is addressed in the N-OWQ is what people do in order to meet the needs for closeness. Therefore, a direct comparison with Floyd's (1995) study may be problematic. Moreover, as the participants of our study were largely female (91.5 %; see Table 2), interpretations concerning associations with gender should be done with caution. Nonetheless, both of the studies indicate that gender is a relevant factor to assess in the context of evaluating the quality of close relationships.

This study also showed that higher age was associated with higher relatedness score of the OWQ. As the person lives longer, he or she often strengthens the bond to people, objects and places. People usually develop a repertoire of places they have visited, things they have been using or collecting and people they have been sharing experiences with throughout their lifespan. These experiences provide opportunities to be related to a community, develop a role, and socialize with a stable group of people. On the other hand, increased levels of loneliness have been reported among elderly persons (Routasalo & Pitkala, 2003), but this phenomenon did not seem to affect the results of the current study. The sample mean age (36.1 years; see Table 2) was within the adult age range, and only four

persons were above 67 years, which is the general retirement age in Norway. Thus, the sample composition may contribute to explain the linear association between higher age and higher scores on the relatedness scale of the N-OWQ.

In this study, higher relatedness scores were associated with being employed. Employment may be seen as an opportunity for people to develop a social network or add to the size of the existing one (Haynes, Banks, & Hill, 2014). Green and colleagues (2001) also reported that younger and older adults' social loneliness may be related to different factors: Whereas a small network size is associated with social loneliness in younger adults, poorer quality of relationships is more strongly associated with loneliness in older adults. Again, in consideration of the relatively young sample in the current study, there is a logical association between being employed and providing higher ratings on the N-OWQ relatedness items. For young adults in particular, employment may precisely indicate that the person's doing supports him in having a role in the community and makes him belong to a group (as opposed to being lonely; see item descriptions in Table 1). The N-OWQ is unique in the way the items describe what people do that make them feel lonely, isolated, or socially connected. Other scales, such as the social loneliness scale (Shaver & Brennan, 1991) used in the above study (Green et al., 2001), focus on people's feelings and not what they do that make them feel how they feel. Thus, direct comparison of the N-OWQ findings with previous research that has used psychometric assessments of loneliness and social integration and the like, will be hard to find. However, prior research findings do shed light on and support the validity of the study results.

### **Study limitations**

The study is limited by the distribution of sample characteristics – the participants were generally young, female and well educated (see Table 2). The recruitment procedure, emphasizing the use of various Facebook groups dedicated to occupational therapy and

occupational therapy education, presumably contributed to the skewed distribution on these variables. In Norway, occupational therapy education is at the bachelor level, thus requiring occupational therapists to have higher education. Occupational therapy students are largely female, and assuming that many occupational therapy students responded to the Facebook posting, this would add to the proportion of females in the sample. Moreover, students are largely young, and young persons are likely to use Facebook and other social media channels more frequently compared to persons of higher age. Because of the skewed distributions, generalizations to other samples with other characteristics should be done with much caution. The scales used in the study is still in development, and at this point, the occupational wholeness scale is constituted by the sum score of the three subscales (adjusted to fit with a scale range between 10 and 40). Future studies will seek to treat the N-OWQ scores in a way that takes into account the relative importance of each item, as experienced by the person.

### **Conclusion and implications**

The sociodemographic variables explained only small portions of the variance in the N-OWQ scale scores. However, being female was directly associated with higher scores on the *closeness* scale, and both higher age and being employed were directly associated with higher scores on the *relatedness* scale. The detected associations with the closeness and relatedness scales seems consistent with prior research on the role of gender in relation to personal relationships, and with the role of employment in relation to being connected to the larger society.

For the practice of occupational therapists, the study suggests that factors like age, gender and employment status are relevant as a general backdrop for understanding their clients' life situation. Based on this study's results, it appears that women's doing contribute to a greater sense of closeness than the doing of men, and what employed and adult persons do tend to contribute to a stronger sense of being related to society, compared to what

unemployed and young adult persons do. However, at the individual level, occupational therapy practice is client centered – that is, it has the client’s own worldview as the point of departure. Client centeredness implies not only gaining knowledge about different aspects of the client’s life, as can be assessed with the current version of the OWQ, but seeks also to understand how the client attributes feelings and values to these aspects. For example, a client may express that his doing “keeps him part of his family” (as assessed from a high score on item 6), but may long have experienced marital problems that make him question the value of his striving to keep the family together. The occupational therapist would need to know not only how the client perceives the effects of his own doing, but also how he feels towards it. Thus, the combination of item scores with the value the person attributes to the content of each item appears to be the next stage in the development of the OWQ. Future studies will aim to develop a measure of occupational wholeness that incorporates the person’s view of the relative importance of each of the comprised items.

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### **Conflicts of interest**

There are no conflicts of interest related to this manuscript.

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Table 1

*The revised N-OWQ 11: Items, scoring and relationships to empirically derived scales*

| <i>Scale</i>       | <i>What I make time for doing</i>                                     | <i>Scoring</i> |
|--------------------|---|----------------|
| <i>Self</i>        |   |                |
|                    | 1) has no value to me   | 4-1            |
|                    | 2) is based on my own choices   | 1-4            |
|                    | 3) contributes to my meeting the expectations of what I am able to do | 1-4            |
|                    | 4) contributes to my becoming the person I want to be                 | 1-4            |
|                    | 5) contributes to creating a future that fits with my interests       | 1-4            |
| <i>Closeness</i>   |   |                |
|                    | 6) keeps me part of my family   | 1-4            |
|                    | 7) makes me feel that I belong to the places I like                   | 1-4            |
|                    | 8) makes me feel that I belong together with the people I am fond of  | 1-4            |
| <i>Relatedness</i> |   |                |
|                    | 9) prevents me from having a role in my community                     | 4-1            |
|                    | 10) makes me feel lonely  | 4-1            |
|                    | 11) prevents me from being where I feel I belong                      | 4-1            |

*Note.* Negatively formulated items have reversed scoring. Scale scores are obtained by summing the relevant item scores, dividing by the number of items on the scale, and multiplying the resulting figure by 10 (score range 10-40). A measure of *occupational wholeness* is obtained by summing all item scores, dividing by 11 (the number of items) and multiplying by 10 (score range 10-40).

Table 2

*Demographic characteristics and N-OWQ scale scores of the study participants (n = 248)*

| Characteristics              | All<br>(n = 248) | Men<br>(n = 21) | Women<br>(n = 227) |          |
|------------------------------|------------------|-----------------|--------------------|----------|
|                              | <i>M (SD)</i>    | <i>M (SD)</i>   | <i>M (SD)</i>      | <i>p</i> |
| Age (years)                  | 36.1 (13.0)      | 40.9 (13.7)     | 35.7 (12.9)        | 0.08     |
| <i>Work status</i>           | <i>n (%)</i>     | <i>n (%)</i>    | <i>n (%)</i>       | <i>p</i> |
| Full time work               | 155 (62.5)       | 13 (61.9)       | 142 (62.6)         | 0.71     |
| Part time work               | 59 (23.8)        | 4 (19.0)        | 55 (24.2)          |          |
| Not working                  | 34 (13.7)        | 4 (19.0)        | 30 (13.2)          |          |
| <i>Education status</i>      | <i>n (%)</i>     | <i>n (%)</i>    | <i>n (%)</i>       | <i>p</i> |
| Studying full time           | 62 (25.0)        | 4 (10.9)        | 58 (25.6)          | 0.80     |
| Studying part time           | 24 (9.7)         | 2 (9.5)         | 22 (9.7)           |          |
| Not studying                 | 162 (65.3)       | 15 (71.4)       | 147 (4.8)          |          |
| <i>Completed education</i>   | <i>n (%)</i>     | <i>n (%)</i>    | <i>n (%)</i>       | <i>p</i> |
| Elementary school            | 4 (1.6)          | 1 (4.8)         | 3 (1.3)            | 0.35     |
| Secondary school             | 54 (21.8)        | 4 (19.0)        | 50 (22.0)          |          |
| University/college ≤ 3 years | 102 (41.1)       | 6 (28.6)        | 96 (42.3)          |          |
| University college ≥ 4 years | 88 (35.5)        | 10 (47.6)       | 78 (34.4)          |          |
| <i>N-OWQ scales</i>          |                  |                 |                    | <i>p</i> |
| Self                         | 32.2 (4.5)       | 32.0 (6.0)      | 32.2 (4.4)         | 0.84     |
| Closeness                    | 31.2 (5.9)       | 27.9 (6.4)      | 31.5 (5.8)         | < 0.01   |
| Relatedness                  | 31.0 (5.9)       | 31.3 (6.4)      | 31.0 (5.9)         | 0.85     |
| Occupational wholeness       | 31.6 (3.9)       | 30.7 (5.1)      | 31.7 (3.8)         | 0.28     |

*Note.* Differences between sample subsets analyzed with independent *t*-tests (age and the N-OWQ scales) and  $\chi^2$ -tests (work status, education status, and completed education level).

Table 3

*Multivariate linear regression analyses showing independent associations with the N-OWQ scales (n = 248)*

| Variables                 | Self         |             | Closeness    |             | Relatedness  |                   | Occupational Wholeness |             |
|---------------------------|--------------|-------------|--------------|-------------|--------------|-------------------|------------------------|-------------|
|                           | $\beta$      | $p$         | $\beta$      | $p$         | $\beta$      | $p$               | $\beta$                | $p$         |
| Age                       | -0.02        | 0.78        | 0.09         | 0.21        | 0.14         | < 0.05            | 0.08                   | 0.25        |
| Gender                    | 0.01         | 0.87        | 0.18         | < 0.01      | 0.00         | 0.97              | 0.08                   | 0.22        |
| Work status               | 0.04         | 0.63        | 0.01         | 0.86        | 0.23         | < 0.01            | 0.12                   | 0.10        |
| Education level           | -0.12        | 0.12        | -0.08        | 0.27        | -0.01        | 0.89              | -0.10                  | 0.18        |
| <b>Explained variance</b> | <b>1.3 %</b> | <b>0.54</b> | <b>3.6 %</b> | <b>0.06</b> | <b>9.2 %</b> | <b>&lt; 0.001</b> | <b>2.6 %</b>           | <b>0.17</b> |

*Note.* Table content is standardized beta weights with corresponding  $p$ -values, showing direct associations with the dependent variables controlling for all variables in the model. Gender is coded male = 0, female = 1; work status is coded not in work/part time work = 0, full time work = 1; education level is coded up to 12 years education = 0, more than 12 years education = 1.