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## Assessing the Psychometric Properties of the WHO-DAS 2.0 in an American Indian Community

Thoin F. Begum

*University at Albany*, [tbegum@albany.edu](mailto:tbegum@albany.edu)

Gayle Skawennio Morse

*bepress (DC Admins)*, [morseg@sage.edu](mailto:morseg@sage.edu)

Dedra Buchwald

*Washington State University*, [dedra.buchwald@wsu.edu](mailto:dedra.buchwald@wsu.edu)

David O. Carpenter

*University at Albany; Institute for Health and the Environment*, [dcarpenter@albany.edu](mailto:dcarpenter@albany.edu)

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## **Assessing the Psychometric Properties of the WHO-DAS 2.0 in an American Indian Community**

### **Cover Page Footnote**

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## 1 **Introduction**

2           In 2019, the mean life expectancy of American Indians (AIs) and Alaska Natives (ANs)  
3 was 76.9 years, more than 11 years less than that for Asian/Pacific Islanders in the United States  
4 (US) (Singh et al., 2021). Nearly 18% of AIs and ANs reported their overall health being fair to  
5 poor, at twice the rate of non-Hispanic Whites or the general US population. Approximately 10%  
6 of AI and AN adults experienced serious psychological distress, which is 2-to-5 times higher  
7 than the prevalence for other racial/ethnic groups. Based on data from the 1990-2019 National  
8 Vital Statistics System, 2014-2018 National Health Interview Survey, and the 2014-2018  
9 American Community Survey AIs and ANs had the highest overall disability, mental and  
10 ambulatory disability, health uninsurance, unemployment, and poverty rates in the US (Singh et  
11 al., 2021).

12           Although many studies have documented the prevalence of these chronic conditions, little  
13 is known about the likely attendant disabilities in this group (Shalala et al., 2000; Mares-Perlman  
14 et al., 2002). Studies indicate AIs and African Americans have the highest prevalence of  
15 disability across racial and ethnic groups (Mwachofi & Broyles, 2008). Furthermore, more than  
16 17% of American Indians ages 18 to 69 reported losing work days due to chronic conditions,  
17 more than any other minority group (Mwachofi & Broyles, 2008). Given the high prevalence of  
18 disability among AIs and limitations to living a normal life, assessing disability in AIs is  
19 imperative.

20           The World Health Organization Disability Assessment Schedule (WHODAS 2.0) is a  
21 generic assessment tool to measure health and disability across cultures (Üstün et al., 2010).  
22 Multiple systematic field research studies were used to determine cross cultural applicability,  
23 reliability, validity, and utility of the Schedule. WHODAS 2.0 has been validated across the

24 world, multiple times in several countries and regions. However, the validity of the Schedule has  
25 never been validated in an AI population.

26         The current study assesses the validity of the 36-item WHODAS 2.0 and explores its  
27 psychometric properties in a population-based sample of 119 Mohawk older adults. The  
28 Mohawk people reside primarily on a 28,000-acre reservation spanning parts of Upstate New  
29 York and Canada. The population of approximately 12,000 individuals has a high prevalence of  
30 diabetes, obesity, and cardiovascular diseases, which are often associated with disability (Codru  
31 et al., 2007; Goncharov et al., 2008). The residents of the Mohawk Nation have undergone  
32 striking changes in lifestyle in the past several decades. Therefore, confirming the validity of  
33 WHODAS 2.0 is the first step in examining disability trends over time and addressing the needs  
34 of the disabled living in the Mohawk community.

## 35 **Methods**

### 36 *Study population*

37         The Akwesasne Nation spans the St. Lawrence River in Upstate New York and includes  
38 the provinces of Quebec and Ontario. The community historically relied on a sustenance diet by  
39 fishing in the river. The individuals residing on the reservation on the US side of the border  
40 receive health care through the Indian Health Services. The participants enrolled in this study  
41 were recruited from an earlier study that collected serum samples for polychlorinated biphenyl  
42 measurement by University at Albany researchers from 1995 to 2000 (Carpenter et al., 2002).  
43 Participants aged 50 years and older at the start of the current study, were eligible to participate  
44 and were individually reached out to for participation in this current investigation. All  
45 participants provided written informed consent and the study was approved by the Utah State,

46 the University of Washington, and the University of Colorado-Denver Institutional Review  
 47 Boards.

48 *Administering the survey*

49 The WHODAS 2.0 was self-administered. We also collected information on  
 50 sociodemographic, cultural, and health characteristics, supplemental to the disability assessment.  
 51 The 36-item schedule was used to derive six domains of disability: cognition, mobility, self-care,  
 52 getting along with others, life activities at home, work or school, and participation in community  
 53 or society activities. The items were also totaled to create a summary score of overall disability  
 54 standardized to range from 0-100. A score of 0 indicates no disability and a score of 100  
 55 indicates full disability. A copy of the 36-item version is available in the Appendix.

56 *Statistical analysis*

57 We examined the distribution of demographic variables using means, medians, standard  
 58 deviations, and ranges using univariate descriptive statistics. We assessed the completeness of  
 59 the data by assessing missingness. If the respondents did not skip any of the items, we calculated  
 60 the overall measure of disability and the scores of each of the six domains. We calculated inter-  
 61 item correlations using Pearson Correlation coefficients, after treating each response item as a  
 62 continuous variable. We used exploratory factor analysis (EFA) based on a Pearson correlation  
 63 matrix to summarize the 36-items measured by the schedule. EFA is often used to examine the  
 64 internal reliability of a measure. It uses theoretical constructs, or factors, that may be represented  
 65 by a set of items. It is often used to transform many highly correlated variables into a smaller set  
 66 of summary variables, also known as factors, while retaining most of the information from the  
 67 original large dataset (Young & Pearce, 2013). We selected factors to retain based on domains of

68 disability based on scree plots and Eigen values  $> 1.0$ . We retained factor loadings with  
69 correlations between items greater than  $|0.5|$ , to only capture items with a moderate or strong  
70 correlation to the summary factor, describing the disability domains, and corresponding to at  
71 least 10% of the total variability (DiStefano et al., 2009). We retained seven factors. Each EFA  
72 derived factor corresponds to each domain of disability. We calculated the Cronbach's alpha to  
73 assess internal consistency of the measure's items. Statistical significance set as  $\alpha=0.05$  for a  
74 two-tailed test. The statistical analysis was carried out using SAS v9.4 (SAS Institute Inc., Cary,  
75 NC USA).

## 76 **Results**

77         One hundred and nineteen adults completed the WHODAS 2.0 in its entirety. Table 1  
78 describes the demographic and clinical factors of 75 women and 44 men who completed the  
79 assessment. The mean age of women and men was 52.7 years and 53 years, respectively. The  
80 women had a slightly higher body mass index compare to the men with a mean BMI of 32. Most  
81 of the participants were non-smokers. Most had some college education or higher educational  
82 experience, and most were married. Women tended to be employed in a full-time positions while  
83 a majority of the men reported being homemakers. Approximately 26% of the women had been  
84 told by a medical doctor that they had anxiety and nearly 30% were diagnosed with depression.  
85 Nearly 16% of the men were diagnosed by a doctor with anxiety and 16% with depression.

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89

90 Table 1. Distribution of demographic factors among 119 study participants.

Factors	Females (n=75)	Males (n=44)
Age, years (mean + SD)	52.7 (12.3)	53.1 (10.6)
BMI (kg/m <sup>2</sup> )	32.4 (6.00)	31.2 (5.06)
Current Smoking Status, n (%)		
Yes	14 (18.9)	9 (20.5)
No	61 (81.3)	35 (79.6)
Highest Level of Education Completed, n (%)		
Grade K-8	1 (1.35)	4 (9.09)
Grades 9-11	4 (5.33)	4 (9.09)
Grades 12/ GED	17 (23.0)	15 (34.1)
Some college	10 (13.5)	5 (11.4)
Associate's degree or technical school degree	27 (36.5)	11 (25.0)
Bachelor's degree	13 (17.6)	3 (6.82)
Master's or professional degree	3 (4.05)	2 (4.55)
Marital Status, n (%) <sup>a</sup>		
Never married	14 (18.9)	2 (4.55)
Married	35 (47.3)	28 (63.6)
Widowed	5 (6.76)	2 (4.55)
Divorced	8 (10.8)	5 (11.4)
Separated	4 (5.41)	4 (9.09)
Live-in partner	8 (10.8)	3 (6.82)
Employment Status, n (%)		
Full-time employment	41 (54.6)	1 (2.27)
Homemaker	10 (13.3)	24 (54.6)
Part-time employment	4 (5.33)	7 (15.9)
Not employed	7 (9.33)	4 (9.09)
Retired	13 (17.3)	8 (18.2)
Anxiety <sup>b</sup>		
Yes	19 (25.7)	7 (15.9)
No	56 (74.7)	37 (84.1)
Depression <sup>b</sup>		
Yes	23 (30.7)	7 (15.9)
No	52 (70.3)	37 (84.1)

91

92 NOTE: <sup>a</sup>(n=1 missing); <sup>b</sup> reported as diagnosed by a doctor

93 Abbreviations: body mass index (BMI), standard deviation (SD)

94

95 Supplemental table 1 shows the inter-item correlation between each of the 36 items

96 assessed by WHODAS 2.0. Most items were moderately to strongly correlated with each other.

97 The difficulty in leaving the house (r=0.71), bathing (r=0.83), and getting dressed (r=0.85) items

98 were strongly correlated to feeding oneself ( $p < .0001$ ). All items were significantly correlated.  
99 The standardized Cronbach's alpha of the entire 36-item survey was 0.965.

100 The Varimax rotated factor loading scores for individual items of the WHO-DAS 2.0 for  
101 119 Akwesasne Mohawk adults is illustrated in Table 2. Factor 1 is described by having  
102 difficulty taking care of household responsibilities, doing most important household work that  
103 needs to get done, getting all the household work done, and getting household work done as  
104 quickly as needed. Factor 2 consists of getting out of the house, washing their body, getting  
105 dressed, eating, and staying by themselves for a few days. The difficulty faced in performing  
106 day-to-day work/school activities, doing the most important work/ school tasks well, getting all  
107 the work done that needs doing, and getting the work done as quickly as needed is described by  
108 Factor 3. Difficulties faced in concentrating on doing something for ten minutes, remembering to  
109 do important things, analyzing and finding solutions to problems faced in day to day life,  
110 learning new tasks, generally understanding what people are saying, and starting and maintaining  
111 a conversation is summarized by Factor 4. Factor 5 is composed of having difficulty living with  
112 dignity because of the attitudes and actions of others, time spent on health condition or its  
113 consequences, being affected emotionally due to health condition, health condition being a drain  
114 on the financial resources of the family, problems faced by family because of your health  
115 problems, and having difficulty doing things by yourself for relaxation or pleasure. Difficulties  
116 in doing activities such as standing for long periods of time, standing up from a seated position,  
117 moving around inside your home, and walking long distances such as a kilometer are sum up by  
118 Factor 6. Factor 7 describes the difficulties faced in dealing with people you do not know,  
119 maintaining a friendship, getting along with people who you are close to, and making new  
120 friends.



121 Table 2. Varimax rotated exploratory factor analysis loading scores for individual items of the WHO-DAS 2.0 for 119 Akwesasne  
 122 Mohawk older adults.

Individual items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Concentrating for 10 min	0.23	0.18	0.10	0.68 <sup>a</sup>	0.24	0.16	-0.08
Remembering things to do	0.16	0.10	0.22	0.59 <sup>a</sup>	0.21	0.17	0.12
Analyzing & solving everyday issues	0.24	0.20	0.20	0.60 <sup>a</sup>	0.25	0.10	0.17
Learning new task	0.17	0.20	0.20	0.59 <sup>a</sup>	-0.02	0.33	0.19
Understanding what others say	0.12	0.19	-0.02	0.73 <sup>a</sup>	0.10	0.23	0.21
Starting & maintain conversation	0.12	0.13	0.15	0.63 <sup>a</sup>	0.06	0.18	0.43
Standing for 30min	0.11	0.05	0.12	0.29	0.27	0.78 <sup>a</sup>	0.19
Standing up from sitting down	0.18	0.34	-0.03	0.32	0.24	0.63 <sup>a</sup>	0.17
Moving around home	0.08	0.35	0.18	0.19	0.07	0.61 <sup>a</sup>	0.30
Leaving home	0.13	0.51 <sup>a</sup>	0.21	0.32	0.20	0.47	0.33
Walking over 1 km	0.21	0.16	0.03	0.16	0.27	0.65 <sup>a</sup>	0.09
Bathing	0.25	0.82 <sup>a</sup>	0.10	0.18	0.27	0.25	0.04
Getting dressed	0.16	0.82 <sup>a</sup>	0.13	0.12	0.27	0.28	0.07
Eating	0.19	0.77 <sup>a</sup>	0.12	0.29	0.21	0.22	0.12
Staying alone	0.22	0.58 <sup>a</sup>	0.16	0.25	0.23	0.07	0.19
Meeting strangers	0.24	0.23	0.21	0.22	0.15	0.17	0.68 <sup>a</sup>
Maintaining friendships	0.32	0.21	0.22	0.17	0.15	0.31	0.51 <sup>a</sup>
Maintaining close relationships	0.32	0.26	0.20	0.12	0.10	0.25	0.50 <sup>a</sup>
Making new friends	0.21	-0.01	0.11	0.23	0.19	0.18	0.77 <sup>a</sup>
Sexual activities	0.45	0.25	0.01	0.33	0.24	-0.04	0.14
Taking care of household responsibilities	0.82 <sup>a</sup>	0.11	0.22	0.14	0.09	0.21	0.18
Doing household tasks	0.80 <sup>a</sup>	0.11	0.19	0.16	0.08	0.22	0.23
Completing household tasks	0.83 <sup>a</sup>	0.25	0.11	0.19	0.16	0.12	0.13
Finishing household tasks quickly	0.77 <sup>a</sup>	0.16	0.19	0.19	0.22	0.13	0.14
Day-to-day work	0.07	0.13	0.85 <sup>a</sup>	0.09	0.14	0.10	0.18
Doing work/school tasks	0.14	0.10	0.91 <sup>a</sup>	0.10	0.13	0.03	0.18
Completing work/school tasks	0.24	0.12	0.91 <sup>a</sup>	0.16	0.07	0.07	0.04
Finishing work/school tasks quickly	0.20	0.11	0.89 <sup>a</sup>	0.18	0.14	0.11	0.10
Difficulty joining community activities	0.46	0.39	0.15	0.27	0.32	0.06	0.16
Difficulties due to barriers	0.44	0.40	0.26	0.10	0.45	-0.04	0.32
Difficulty in living with dignity due to others	0.28	0.43	0.18	0.15	0.52 <sup>a</sup>	0.10	0.30
Time spent on health condition	0.15	0.21	0.11	0.19	0.50 <sup>a</sup>	0.41	0.16
Emotional difficulty due to health condition	0.18	0.21	0.18	0.19	0.66 <sup>a</sup>	0.44	0.13
Financial burden due to health condition	0.12	0.29	0.11	0.16	0.74 <sup>a</sup>	0.22	0.15
Difficulty faced by family	0.17	0.21	0.12	0.15	0.65 <sup>a</sup>	0.36	0.03
Difficulty in doing things for relaxation	0.27	0.33	0.23	0.26	0.49 <sup>a</sup>	0.05	0.11

123 NOTE: Variance explained: 62% Factor 1; 11% Factor 2; 7% Factor 3; 7% Factor 4; 5% Factor 5; 4% Factor 6; 4% Factor 7; <sup>a</sup> Factor  
 124 loading scores > |0.5|

125 **Discussion**

126 We assessed the internal validity of the WHODAS 2.0 with an AI population to  
127 determine whether it is a culturally sensitive measure. Factor 1 primarily summarizes the overall  
128 disability experienced in performing life activities at home and Factor 3 describes the difficulty  
129 faced in doing things at work/ school. Factor 2 describes overall to take care of oneself, without  
130 accounting for the difficulty in walking long distances, and overall cognitive ability is  
131 summarized by Factor 4. Factor 5 describes the overall ability to participate in community or  
132 society activities. Overall mobility is primarily summarized by Factor 6. The ability to get along  
133 with others is described by Factor 7. These factors describe each of the 6 domains of disability,  
134 with both Factors 3 and 5 describing the overall ability to perform life activities. The  
135 correspondence of each factor with each of the domains of disability suggests that this scale is  
136 appropriate to assess and measure disability among AIs.

137 Several studies show that Akwesasne Mohawk adults experience a disproportionality  
138 high prevalence of several health concerns, including diabetes and cardiovascular diseases  
139 (Codru et al., 2007; Goncharov et al., 2008), which are often associated with disability  
140 (Widerström-Noga & Finlayson, 2010). Our analysis and assessment of WHODAS 2.0 suggests  
141 that it is an appropriate tool for measuring and assessing disability among Akwesasne Mohawk  
142 adults. We did not do test re-test reliability as our high standardized Cronbach's alpha of 0.97 is  
143 consistent with WHO's measures of excellent test-retest reliability at the domain level and  
144 summary score levels.

145 To the best of our knowledge, another study has not evaluated the validity of measures of  
146 disability in a Native population. To date, much of what we know about prevalence of disability  
147 among Native populations come from census track data and from national databases including

148 the National Vital Statistics System, the National Health Interview Survey, and the American  
149 Community Survey. From these sources we know that AI and AN communities have excess  
150 mortality, especially among those living in rural areas, in the working ages, and mortality was  
151 highest for those with diabetes, liver cirrhosis, alcohol-related causes, youth suicide, and  
152 unintentional injuries (Singh et al., 2021). We aim to use the findings of WHODAS 2.0 to  
153 examine relationships between disability and factors such as age, sex, comorbid health  
154 conditions, social support, and cultural identity.

### 155 **Conclusion**

156 The factor structures constructed by the EFA coincide with the six summary domains of  
157 disability. This study has demonstrated the internal reliability and validity of WHODAS 2.0. We  
158 found it to be a comprehensive measure of disability that also assesses mental health and  
159 functioning among Mohawk older adults.

160

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Supplemental Table 1. Correlation between difficulty performing individual items of the WHO-DAS 2.0 (n=119).

	Concentrating for 10 min	Remembering things to do	Analyzing & solving daily issues	Learning new task	Understanding what others say	Starting & maintain conversation	Standing for 30min	Standing up	Moving around home	Leaving home
Concentrating for 10 min	-	0.63 (<.0001)	0.63 (<.0001)	0.51 (<.0001)	0.61 (<.0001)	0.48 (<.0001)	0.40 (<.0001)	0.44 (<.0001)	0.27 (0.004)	0.46 (<.0001)
Remembering things to do	0.63 (<.0001)	-	0.52 (<.0001)	0.51 (<.0001)	0.54 (<.0001)	0.51 (<.0001)	0.41 (<.0001)	0.47 (<.0001)	0.36 (<.0001)	0.45 (<.0001)
Analyzing & solving everyday issues	0.63 (<.0001)	0.52 (<.0001)	-	0.56 (<.0001)	0.57 (<.0001)	0.56 (<.0001)	0.45 (<.0001)	0.45 (<.0001)	0.29 (0.001)	0.52 (<.0001)
Learning new task	0.51 (<.0001)	0.51 (<.0001)	0.56 (<.0001)	-	0.57 (<.0001)	0.59 (<.0001)	0.49 (<.0001)	0.55 (<.0001)	0.51 (<.0001)	0.62 (<.0001)
Understanding what others say	0.61 (<.0001)	0.54 (<.0001)	0.57 (<.0001)	0.57 (<.0001)	-	0.67 (<.0001)	0.50 (<.0001)	0.49 (<.0001)	0.44 (<.0001)	0.51 (<.0001)
Starting & maintain conversation	0.48 (<.0001)	0.51 (<.0001)	0.56 (<.0001)	0.59 (<.0001)	0.67 (<.0001)	-	0.45 (<.0001)	0.46 (<.0001)	0.48 (<.0001)	0.53 (<.0001)
Standing for 30min	0.40 (<.0001)	0.41 (<.0001)	0.45 (<.0001)	0.49 (<.0001)	0.50 (<.0001)	0.45 (<.0001)	-	0.73 (<.0001)	0.64 (<.0001)	0.60 (<.0001)
Standing up from sitting down	0.44 (<.0001)	0.47 (<.0001)	0.45 (<.0001)	0.55 (<.0001)	0.49 (<.0001)	0.46 (<.0001)	0.73 (<.0001)	-	0.67 (<.0001)	0.68 (<.0001)
Moving around home	0.27 (0.004)	0.36 (<.0001)	0.29 (0.001)	0.51 (<.0001)	0.44 (<.0001)	0.48 (<.0001)	0.64 (<.0001)	0.67 (<.0001)	-	0.76 (<.0001)
Leaving home	0.46 (<.0001)	0.45 (<.0001)	0.52 (<.0001)	0.62 (<.0001)	0.51 (<.0001)	0.53 (<.0001)	0.60 (<.0001)	0.68 (<.0001)	0.76 (<.0001)	-
Walking over 1 km	0.32 (0.0005)	0.33 (<.0001)	0.37 (0.0003)	0.42 (<.0001)	0.32 (0.0005)	0.34 (0.0002)	0.75 (<.0001)	0.63 (<.0001)	0.52 (<.0001)	0.56 (<.0001)
Bathing	0.48 (<.0001)	0.35 (<.0001)	0.44 (<.0001)	0.42 (<.0001)	0.41 (<.0001)	0.32 (0.0004)	0.39 (<.0001)	0.61 (<.0001)	0.52 (<.0001)	0.69 (<.0001)
Getting dressed	0.42 (<.0001)	0.33 (0.0002)	0.41 (<.0001)	0.37 (<.0001)	0.38 (<.0001)	0.30 (0.0009)	0.42 (<.0001)	0.60 (<.0001)	0.54 (<.0001)	0.67 (<.0001)
Eating	0.42 (<.0001)	0.38 (<.0001)	0.50 (<.0001)	0.46 (<.0001)	0.50 (<.0001)	0.47 (<.0001)	0.40 (<.0001)	0.58 (<.0001)	0.52 (<.0001)	0.71 (<.0001)
Staying alone	0.41 (<.0001)	0.34 (<.0001)	0.51 (<.0001)	0.29 (<.0001)	0.41 (<.0001)	0.42 (<.0001)	0.31 (0.0006)	0.41 (<.0001)	0.43 (<.0001)	0.61 (<.0001)
Meeting strangers	0.29 (0.002)	0.39 (<.0001)	0.49 (<.0001)	0.48 (<.0001)	0.37 (<.0001)	0.53 (<.0001)	0.44 (<.0001)	0.46 (<.0001)	0.47 (<.0001)	0.59 (<.0001)
Maintaining friendships	0.39 (<.0001)	0.37 (<.0001)	0.43 (<.0001)	0.40 (<.0001)	0.38 (<.0001)	0.51 (<.0001)	0.47 (<.0001)	0.52 (<.0001)	0.49 (<.0001)	0.59 (<.0001)

Supplemental Table 1 continued. Correlation between individual items of the WHO-DAS 2.0 (n=119).

	Walking over 1 km	Bathing	Getting dressed	Eating	Staying alone	Meeting strangers	Maintaining friendships	Maintaining close relations	Making new friends	Sexual activities	Taking care of household responsibilities
Concentrating for 10 min	0.32 (0.0005)	0.48 (<.0001)	0.42 (<.0001)	0.42 (<.0001)	0.41 (<.0001)	0.29 (0.002)	0.39 (<.0001)	0.29 (0.001)	0.18 (0.05)	0.35 (0.0001)	0.39 (<.0001)
Remembering things to do	0.33 (0.0003)	0.35 (<.0001)	0.33 (0.0002)	0.38 (<.0001)	0.34 (0.0001)	0.39 (<.0001)	0.37 (<.0001)	0.32 (0.0004)	0.37 (<.0001)	0.30 (0.001)	0.38 (<.0001)
Analyzing & solving everyday issues	0.37 (<.0001)	0.44 (<.0001)	0.41 (<.0001)	0.50 (<.0001)	0.51 (<.0001)	0.49 (<.0001)	0.43 (<.0001)	0.39 (<.0001)	0.40 (<.0001)	0.44 (<.0001)	0.43 (<.0001)
Learning new task	0.42 (<.0001)	0.42 (<.0001)	0.37 (<.0001)	0.46 (<.0001)	0.29 (0.002)	0.48 (<.0001)	0.40 (<.0001)	0.38 (<.0001)	0.38 (<.0001)	0.40 (<.0001)	0.40 (<.0001)
Understanding what others say	0.32 (0.0005)	0.41 (<.0001)	0.38 (<.0001)	0.50 (<.0001)	0.41 (<.0001)	0.37 (<.0001)	0.38 (<.0001)	0.38 (<.0001)	0.44 (<.0001)	0.40 (<.0001)	0.33 (0.0002)
Starting & maintain conversation	0.34 (0.0002)	0.32 (<.0001)	0.30 (0.0009)	0.47 (<.0001)	0.42 (<.0001)	0.53 (<.0001)	0.51 (<.0001)	0.40 (<.0001)	0.60 (<.0001)	0.34 (<.0001)	0.34 (0.0002)
Standing for 30min	0.75 (<.0001)	0.39 (<.0001)	0.42 (<.0001)	0.40 (<.0001)	0.31 (0.0006)	0.44 (<.0001)	0.47 (<.0001)	0.40 (<.0001)	0.46 (<.0001)	0.20 (0.03)	0.38 (<.0001)
Standing up from sitting down	0.63 (<.0001)	0.61 (<.0001)	0.60 (<.0001)	0.58 (<.0001)	0.41 (<.0001)	0.46 (<.0001)	0.52 (<.0001)	0.43 (<.0001)	0.36 (<.0001)	0.35 (<.0001)	0.38 (<.0001)
Moving around home	0.52 (<.0001)	0.52 (<.0001)	0.54 (<.0001)	0.52 (<.0001)	0.43 (<.0001)	0.47 (<.0001)	0.49 (<.0001)	0.44 (<.0001)	0.45 (<.0001)	0.27 (0.003)	0.31 (0.001)
Leaving home	0.56 (<.0001)	0.69 (<.0001)	0.67 (<.0001)	0.71 (<.0001)	0.61 (<.0001)	0.59 (<.0001)	0.59 (<.0001)	0.57 (<.0001)	0.48 (<.0001)	0.42 (<.0001)	0.42 (<.0001)
Walking over 1 km	-	0.43 (<.0001)	0.41 (<.0001)	0.47 (<.0001)	0.31 (0.0006)	0.34 (<.0001)	0.40 (<.0001)	0.34 (0.0002)	0.33 (0.0003)	0.23 (0.01)	0.44 (<.0001)
Bathing	0.94 (<.0001)	-	0.94 (<.0001)	0.85 (<.0001)	0.66 (<.0001)	0.42 (<.0001)	0.43 (<.0001)	0.48 (<.0001)	0.24 (0.008)	0.43 (<.0001)	0.43 (<.0001)
Getting dressed	0.85 (<.0001)	0.83 (<.0001)	-	0.83 (<.0001)	0.67 (<.0001)	0.43 (<.0001)	0.45 (<.0001)	0.47 (<.0001)	0.24 (0.01)	0.33 (0.0003)	0.39 (<.0001)
Eating	0.66 (<.0001)	0.67 (<.0001)	0.73 (<.0001)	-	0.73 (<.0001)	0.45 (<.0001)	0.42 (<.0001)	0.45 (<.0001)	0.28 (0.002)	0.39 (<.0001)	0.41 (<.0001)
Staying alone	0.42 (<.0001)	0.43 (<.0001)	0.45 (<.0001)	0.44 (<.0001)	-	0.44 (<.0001)	0.41 (<.0001)	0.37 (<.0001)	0.34 (0.0001)	0.43 (<.0001)	0.40 (<.0001)
Meeting strangers	0.43 (<.0001)	0.45 (<.0001)	0.42 (<.0001)	0.41 (<.0001)	0.61 (<.0001)	-	0.61 (<.0001)	0.60 (<.0001)	0.73 (<.0001)	0.36 (<.0001)	0.46 (<.0001)
Maintaining friendships	0.48 (<.0001)	0.47 (<.0001)	0.45 (<.0001)	0.37 (<.0001)	0.60 (<.0001)	0.78 (<.0001)	-	0.78 (<.0001)	0.55 (<.0001)	0.27 (0.003)	0.55 (<.0001)

Supplemental Table 1 continued. Correlation between individual items of the WHO-DAS 2.0 (n=119).

	Doing household tasks	Completing household tasks	Finishing household tasks quickly	Day-to-day work	Doing work tasks	Completing work tasks	Finishing work tasks quickly	community activities	Difficulties due to barriers	Living with dignity	Time spent on health condition
Concentrating for 10 min	0.41 (<.0001)	0.41 (<.0001)	0.38 (<.0001)	0.23 (0.01)	0.23 (0.01)	0.27 (0.003)	0.30 (0.001)	0.43 (<.0001)	0.31 (0.001)	0.37 (<.0001)	0.40 (<.0001)
Remembering things to do	0.37 (<.0001)	0.35 (<.0001)	0.35 (<.0001)	0.36 (<.0001)	0.34 (0.0001)	0.38 (<.0001)	0.38 (<.0001)	0.40 (<.0001)	0.38 (<.0001)	0.44 (<.0001)	0.42 (<.0001)
Analyzing & solving everyday issues	0.40 (<.0001)	0.48 (<.0001)	0.47 (<.0001)	0.37 (<.0001)	0.35 (<.0001)	0.39 (<.0001)	0.44 (<.0001)	0.47 (<.0001)	0.45 (<.0001)	0.45 (<.0001)	0.37 (<.0001)
Learning new task	0.40 (<.0001)	0.35 (<.0001)	0.35 (0.0001)	0.28 (0.002)	0.33 (0.0002)	0.40 (<.0001)	0.40 (<.0001)	0.46 (<.0001)	0.34 (0.0002)	0.33 (0.0002)	0.36 (<.0001)
Understanding what others say	0.35 (<.0001)	0.35 (<.0001)	0.33 (0.0003)	0.15 (0.09)	0.15 (0.10)	0.18 (0.05)	0.23 (0.01)	0.36 (<.0001)	0.29 (0.002)	0.33 (0.0002)	0.39 (<.0001)
Starting & maintain conversation	0.38 (<.0001)	0.39 (<.0001)	0.40 (<.0001)	0.32 (0.001)	0.34 (0.0002)	0.30 (0.001)	0.36 (<.0001)	0.40 (<.0001)	0.33 (0.0002)	0.37 (<.0001)	0.34 (0.0002)
Standing for 30min	0.42 (<.0001)	0.31 (0.001)	0.35 (<.0001)	0.27 (0.003)	0.26 (0.005)	0.28 (0.002)	0.34 (0.0001)	0.37 (<.0001)	0.31 (0.0007)	0.41 (<.0001)	0.60 (<.0001)
Standing up from sitting down	0.41 (<.0001)	0.42 (<.0001)	0.43 (<.0001)	0.20 (0.03)	0.15 (0.10)	0.17 (0.07)	0.20 (0.03)	0.46 (<.0001)	0.37 (<.0001)	0.52 (<.0001)	0.52 (<.0001)
Moving around home	0.35 (<.0001)	0.38 (<.0001)	0.37 (<.0001)	0.36 (<.0001)	0.32 (0.0003)	0.30 (0.001)	0.34 (0.0001)	0.33 (0.0003)	0.37 (<.0001)	0.39 (<.0001)	0.51 (<.0001)
Leaving home	0.43 (<.0001)	0.47 (<.0001)	0.41 (<.0001)	0.41 (<.0001)	0.37 (<.0001)	0.40 (<.0001)	0.46 (<.0001)	0.50 (<.0001)	0.56 (<.0001)	0.56 (<.0001)	0.57 (<.0001)
Walking over 1 km	0.42 (<.0001)	0.36 (<.0001)	0.33 (0.0002)	0.19 (0.04)	0.15 (0.10)	0.20 (0.03)	0.24 (0.008)	0.40 (<.0001)	0.40 (0.30 (0.001))	0.43 (<.0001)	0.50 (<.0001)
Bathing	0.44 (<.0001)	0.53 (<.0001)	0.47 (<.0001)	0.30 (0.001)	0.29 (0.001)	0.32 (0.0004)	0.33 (0.0002)	0.60 (<.0001)	0.58 (<.0001)	0.63 (<.0001)	0.47 (<.0001)
Getting dressed	0.35 (<.0001)	0.46 (<.0001)	0.41 (<.0001)	0.31 (0.001)	0.29 (0.001)	0.31 (0.001)	0.33 (0.0003)	0.55 (<.0001)	0.56 (<.0001)	0.61 (<.0001)	0.48 (<.0001)
Eating	0.40 (<.0001)	0.51 (<.0001)	0.43 (<.0001)	0.32 (0.0003)	0.30 (0.001)	0.32 (0.0003)	0.35 (<.0001)	0.57 (<.0001)	0.56 (<.0001)	0.64 (<.0001)	0.51 (<.0001)
Staying alone	0.40 (<.0001)	0.46 (<.0001)	0.43 (<.0001)	0.33 (0.0003)	0.35 (<.0001)	0.33 (0.0002)	0.37 (<.0001)	0.51 (<.0001)	0.53 (<.0001)	0.61 (<.0001)	0.41 (<.0001)
Meeting strangers	0.50 (<.0001)	0.47 (<.0001)	0.42 (<.0001)	0.39 (<.0001)	0.42 (<.0001)	0.36 (<.0001)	0.40 (<.0001)	0.45 (<.0001)	0.54 (<.0001)	0.59 (<.0001)	0.40 (<.0001)
Maintaining friendships	0.55 (<.0001)	0.47 (<.0001)	0.49 (<.0001)	0.41 (<.0001)	0.38 (<.0001)	0.37 (<.0001)	0.42 (<.0001)	0.52 (<.0001)	0.50 (<.0001)	0.47 (<.0001)	0.36 (<.0001)

Supplemental Table 1 continued. Correlation between individual items of the WHO-DAS 2.0 (n=119).

	Emotional difficulty due to health condition	Financial burden due to health condition	Difficulty faced by family	Difficulty in doing things for relaxation
Concentrating for 10 min	0.45 (<.0001)	0.39 (<.0001)	0.46 (<.0001)	0.40 (<.0001)
Remembering things to do	0.41 (<.0001)	0.34 (0.0001)	0.33 (0.0002)	0.43 (<.0001)
Analyzing & solving everyday issues	0.44 (<.0001)	0.48 (<.0001)	0.42 (<.0001)	0.47 (<.0001)
Learning new task	0.38 (<.0001)	0.26 (0.004)	0.24 (0.008)	0.38 (<.0001)
Understanding what others say	0.42 (<.0001)	0.33 (0.0003)	0.34 (0.0002)	0.34 (0.0001)
Starting & maintain conversation	0.35 (<.0001)	0.36 (<.0001)	0.28 (0.002)	0.37 (<.0001)
Standing for 30min	0.64 (<.0001)	0.46 (<.0001)	0.51 (<.0001)	0.37 (<.0001)
Standing up from sitting down	0.60 (<.0001)	0.49 (<.0001)	0.54 (<.0001)	0.44 (<.0001)
Moving around home	0.51 (<.0001)	0.35 (<.0001)	0.42 (<.0001)	0.37 (<.0001)
Leaving home	0.61 (<.0001)	0.54 (<.0001)	0.51 (<.0001)	0.52 (<.0001)
Walking over 1 km	0.56 (<.0001)	0.47 (<.0001)	0.47 (<.0001)	0.34 (0.0002)
Bathing	0.58 (<.0001)	0.58 (<.0001)	0.52 (<.0001)	0.55 (<.0001)
Getting dressed	0.58 (<.0001)	0.57 (<.0001)	0.51 (<.0001)	0.53 (<.0001)
Eating	0.50 (<.0001)	0.53 (<.0001)	0.47 (<.0001)	0.50 (<.0001)
Staying alone	0.43 (<.0001)	0.44 (<.0001)	0.44 (<.0001)	0.40 (<.0001)
Meeting strangers	0.44 (<.0001)	0.38 (<.0001)	0.32 (0.0004)	0.36 (<.0001)
Maintaining friendships	0.47 (<.0001)	0.48 (<.0001)	0.42 (<.0001)	0.35 (0.0001)



Supplemental Table 1 continued. Correlation between individual items of the WHO-DAS 2.0 (n=119).

	Concentrating for 10 min	Remembering things to do	Analyzing & solving daily issues	Learning new task	Understanding what others say	Starting & maintain conversation	Standing for 30min	Standing up	Moving around home	Leaving home
Maintaining close relationships	0.29 (0.001)	0.32 (0.0004)	0.39 (<.0001)	0.38 (<.0001)	0.38 (<.0001)	0.40 (<.0001)	0.40 (<.0001)	0.43 (<.0001)	0.44 (<.0001)	0.57 (<.0001)
Making new friends	0.18 (0.05)	0.37 (<.0001)	0.40 (<.0001)	0.38 (<.0001)	0.44 (<.0001)	0.60 (<.0001)	0.46 (<.0001)	0.36 (<.0001)	0.45 (<.0001)	0.48 (<.0001)
Sexual activities	0.35 (0.0001)	0.30 (0.001)	0.44 (<.0001)	0.40 (<.0001)	0.40 (<.0001)	0.34 (<.0001)	0.20 (0.03)	0.35 (<.0001)	0.27 (0.003)	0.42 (<.0001)
Taking care of household	0.39 (<.0001)	0.38 (<.0001)	0.43 (<.0001)	0.40 (<.0001)	0.33 (0.0002)	0.34 (0.0002)	0.38 (<.0001)	0.38 (<.0001)	0.31 (0.001)	0.42 (<.0001)
Doing household tasks	0.41 (<.0001)	0.37 (<.0001)	0.40 (<.0001)	0.40 (<.0001)	0.35 (<.0001)	0.38 (<.0001)	0.42 (<.0001)	0.41 (<.0001)	0.35 (<.0001)	0.43 (<.0001)
Completing household tasks	0.41 (<.0001)	0.35 (<.0001)	0.48 (<.0001)	0.35 (<.0001)	0.35 (<.0001)	0.39 (<.0001)	0.31 (0.0006)	0.42 (<.0001)	0.38 (<.0001)	0.47 (<.0001)
Finishing household tasks quickly	0.38 (<.0001)	0.35 (<.0001)	0.47 (<.0001)	0.35 (0.0001)	0.33 (0.0003)	0.40 (<.0001)	0.35 (<.0001)	0.43 (<.0001)	0.37 (<.0001)	0.41 (<.0001)
Day-to-day work	0.23 (0.01)	0.36 (<.0001)	0.37 (<.0001)	0.28 (0.002)	0.15 (0.09)	0.32 (0.0005)	0.27 (0.003)	0.20 (0.03)	0.36 (<.0001)	0.41 (<.0001)
Doing work tasks	0.23 (0.01)	0.34 (0.0001)	0.35 (<.0001)	0.33 (0.0002)	0.15 (0.10)	0.34 (0.0002)	0.26 (0.005)	0.15 (0.10)	0.32 (0.0003)	0.37 (<.0001)
Completing work tasks	0.27 (0.003)	0.38 (<.0001)	0.39 (<.0001)	0.40 (<.0001)	0.18 (0.05)	0.30 (0.001)	0.28 (0.002)	0.17 (0.07)	0.30 (0.001)	0.40 (<.0001)
Finishing work/school tasks quickly	0.30 (0.001)	0.38 (<.0001)	0.44 (<.0001)	0.40 (<.0001)	0.23 (0.01)	0.36 (<.0001)	0.34 (0.0001)	0.20 (0.03)	0.34 (0.0001)	0.46 (<.0001)
community activities	0.43 (<.0001)	0.40 (<.0001)	0.47 (<.0001)	0.46 (<.0001)	0.36 (<.0001)	0.40 (<.0001)	0.37 (<.0001)	0.46 (<.0001)	0.33 (0.0003)	0.50 (<.0001)
Difficulties due to barriers	0.31 (0.001)	0.38 (<.0001)	0.45 (<.0001)	0.34 (0.0002)	0.29 (0.002)	0.33 (0.0002)	0.31 (0.001)	0.37 (<.0001)	0.37 (<.0001)	0.56 (<.0001)
Living with dignity	0.37 (<.0001)	0.44 (<.0001)	0.45 (<.0001)	0.33 (0.0002)	0.33 (0.0002)	0.37 (<.0001)	0.41 (<.0001)	0.52 (<.0001)	0.39 (<.0001)	0.56 (<.0001)
Time spent on health	0.40 (<.0001)	0.42 (<.0001)	0.37 (<.0001)	0.36 (<.0001)	0.39 (<.0001)	0.34 (0.0002)	0.60 (<.0001)	0.52 (<.0001)	0.51 (<.0001)	0.57 (<.0001)
Emotional difficulty	0.45 (<.0001)	0.41 (<.0001)	0.44 (<.0001)	0.38 (<.0001)	0.42 (<.0001)	0.35 (<.0001)	0.64 (<.0001)	0.60 (<.0001)	0.51 (<.0001)	0.61 (<.0001)
Financial burden	0.39 (<.0001)	0.34 (0.0001)	0.48 (<.0001)	0.26 (0.004)	0.33 (0.0003)	0.36 (<.0001)	0.46 (<.0001)	0.49 (<.0001)	0.35 (<.0001)	0.54 (<.0001)

Supplemental Table 1 continued. Correlation between individual items of the WHO-DAS 2.0 (n=119).

	Walking over 1 km	Bathing	Getting dressed	Eating	Staying alone	Meeting strangers	Maintaining friendships	Maintaining close relations	Making new friends	Sexual activities	Taking care of household responsibilities
Maintaining close relationships	0.34 (0.0002)	0.48 (<.0001)	0.47 (<.0001)	0.45 (<.0001)	0.37 (<.0001)	0.60 (<.0001)	0.78 (<.0001)	-	0.53 (<.0001)	0.31 (0.001)	0.53 (<.0001)
Making new friends	0.33 (0.0003)	0.24 (0.01)	0.24 (0.01)	0.28 (0.002)	0.34 (0.0001)	0.73 (<.0001)	0.55 (<.0001)	0.53 (<.0001)	-	0.33 (0.0003)	0.44 (<.0001)
Sexual activities	0.23 (0.01)	0.43 (<.0001)	0.33 (0.0003)	0.39 (<.0001)	0.43 (<.0001)	0.36 (<.0001)	0.27 (0.003)	0.31 (0.001)	0.33 (0.0003)	-	0.43 (<.0001)
Taking care of household responsibilities	0.44 (<.0001)	0.43 (<.0001)	0.39 (<.0001)	0.41 (<.0001)	0.40 (<.0001)	0.46 (<.0001)	0.55 (<.0001)	0.53 (<.0001)	0.44 (<.0001)	0.43 (<.0001)	-
Doing household tasks	0.42 (<.0001)	0.44 (<.0001)	0.35 (<.0001)	0.40 (<.0001)	0.40 (<.0001)	0.50 (<.0001)	0.55 (<.0001)	0.51 (<.0001)	0.47 (<.0001)	0.45 (<.0001)	0.90 (<.0001)
Completing household tasks	0.36 (<.0001)	0.53 (<.0001)	0.46 (<.0001)	0.51 (<.0001)	0.46 (<.0001)	0.47 (<.0001)	0.47 (<.0001)	0.47 (<.0001)	0.38 (<.0001)	0.61 (<.0001)	0.80 (<.0001)
Finishing household tasks quickly	0.33 (0.0002)	0.47 (<.0001)	0.41 (<.0001)	0.43 (<.0001)	0.43 (<.0001)	0.42 (<.0001)	0.49 (<.0001)	0.47 (<.0001)	0.41 (<.0001)	0.57 (<.0001)	0.76 (<.0001)
Day-to-day work	0.19 (0.04)	0.30 (0.001)	0.31 (0.001)	0.32 (0.0003)	0.33 (0.0003)	0.39 (<.0001)	0.41 (<.0001)	0.40 (<.0001)	0.31 (0.001)	0.16 (0.08)	0.34 (0.0001)
Doing work tasks	0.15 (0.10)	0.29 (0.001)	0.29 (0.001)	0.30 (0.001)	0.35 (<.0001)	0.42 (<.0001)	0.38 (<.0001)	0.36 (<.0001)	0.33 (0.0002)	0.18 (0.05)	0.39 (<.0001)
Completing work tasks	0.20 (0.03)	0.32 (0.0004)	0.31 (0.0005)	0.32 (0.0003)	0.33 (0.0002)	0.36 (<.0001)	0.37 (<.0001)	0.34 (0.0001)	0.25 (0.007)	0.22 (0.02)	0.46 (<.0001)
Finishing work/school tasks quickly	0.24 (0.008)	0.33 (0.0002)	0.33 (0.0003)	0.35 (<.0001)	0.37 (<.0001)	0.40 (<.0001)	0.42 (<.0001)	0.39 (<.0001)	0.30 (0.001)	0.23 (0.01)	0.44 (<.0001)
community activities	0.40 (<.0001)	0.60 (<.0001)	0.55 (<.0001)	0.57 (<.0001)	0.51 (<.0001)	0.45 (<.0001)	0.52 (<.0001)	0.43 (<.0001)	0.33 (0.0003)	0.54 (<.0001)	0.53 (<.0001)
Difficulties due to barriers	0.30 (0.001)	0.58 (<.0001)	0.56 (<.0001)	0.56 (<.0001)	0.53 (<.0001)	0.54 (<.0001)	0.50 (<.0001)	0.46 (<.0001)	0.47 (<.0001)	0.46 (<.0001)	0.57 (<.0001)
Living with dignity	0.43 (<.0001)	0.63 (<.0001)	0.61 (<.0001)	0.64 (<.0001)	0.61 (<.0001)	0.59 (<.0001)	0.47 (<.0001)	0.42 (<.0001)	0.45 (<.0001)	0.44 (<.0001)	0.48 (<.0001)
Time spent on health condition	0.50 (<.0001)	0.47 (<.0001)	0.48 (<.0001)	0.51 (<.0001)	0.41 (<.0001)	0.40 (<.0001)	0.36 (<.0001)	0.39 (<.0001)	0.39 (<.0001)	0.28 (0.002)	0.33 (0.0003)
Emotional difficulty	0.56 (<.0001)	0.58 (<.0001)	0.58 (<.0001)	0.50 (<.0001)	0.43 (<.0001)	0.44 (<.0001)	0.47 (<.0001)	0.41 (<.0001)	0.44 (<.0001)	0.40 (<.0001)	0.39 (<.0001)
Financial burden	0.47 (<.0001)	0.58 (<.0001)	0.57 (<.0001)	0.53 (<.0001)	0.44 (<.0001)	0.38 (<.0001)	0.48 (<.0001)	0.43 (<.0001)	0.35 (0.0001)	0.38 (<.0001)	0.33 (<.0001)

Supplemental Table 1 continued. Correlation between individual items of the WHO-DAS 2.0 (n=119).

	Doing household tasks	Completing household tasks	Finishing household tasks quickly	Day-to-day work	Doing work tasks	Completing work tasks	Finishing work tasks quickly	community activities	Difficulties due to barriers	Living with dignity	Time spent on health condition
Maintaining close relationships	0.51 ( $<.0001$ )	0.47 ( $<.0001$ )	0.47 ( $<.0001$ )	0.40 ( $<.0001$ )	0.36 ( $<.0001$ )	0.34 (0.0001)	0.39 ( $<.0001$ )	0.43( $<.0001$ )	0.46 ( $<.0001$ )	0.42 ( $<.0001$ )	0.39 ( $<.0001$ )
Making new friends	0.47 ( $<.0001$ )	0.38 ( $<.0001$ )	0.41 ( $<.0001$ )	0.31 (0.0006)	0.33 (0.0002)	0.25 (0.007)	0.30 (0.0009)	0.33 (0.0003)	0.47 ( $<.0001$ )	0.45 ( $<.0001$ )	0.39 ( $<.0001$ )
Sexual activities	0.45 ( $<.0001$ )	0.61 ( $<.0001$ )	0.57 ( $<.0001$ )	0.16 (0.08)	0.18 (0.05)	0.22 (0.02)	0.23 (0.01)	0.54 ( $<.0001$ )	0.46 ( $<.0001$ )	0.44 ( $<.0001$ )	0.28 (0.002)
Taking care of household responsibilities	0.90 ( $<.0001$ )	0.80 ( $<.0001$ )	0.76 ( $<.0001$ )	0.34 (0.0001)	0.39 ( $<.0001$ )	0.46 ( $<.0001$ )	0.44 ( $<.0001$ )	0.53 ( $<.0001$ )	0.57 ( $<.0001$ )	0.48 ( $<.0001$ )	0.33 (0.0003)
Doing household tasks	-	0.79 ( $<.0001$ )	0.73 ( $<.0001$ )	0.30 (0.001)	0.38 ( $<.0001$ )	0.44 ( $<.0001$ )	0.42 ( $<.0001$ )	0.55 ( $<.0001$ )	0.60 ( $<.0001$ )	0.52 ( $<.0001$ )	0.37 ( $<.0001$ )
Completing household tasks	0.79 ( $<.0001$ )	-	0.91 ( $<.0001$ )	0.28 (0.002)	0.30 (0.0008)	0.38 ( $<.0001$ )	0.37 ( $<.0001$ )	0.58 ( $<.0001$ )	0.59 ( $<.0001$ )	0.48 ( $<.0001$ )	0.41 ( $<.0001$ )
Finishing household tasks quickly	0.73 ( $<.0001$ )	0.91 ( $<.0001$ )	-	0.35 (0.0001)	0.38 ( $<.0001$ )	0.41 ( $<.0001$ )	0.44 ( $<.0001$ )	0.59 ( $<.0001$ )	0.58 ( $<.0001$ )	0.44 ( $<.0001$ )	0.43 ( $<.0001$ )
Day-to-day work	0.30 (0.001)	0.28 (0.002)	0.35 (0.0001)	-	0.90 ( $<.0001$ )	0.82 ( $<.0001$ )	0.83 ( $<.0001$ )	0.30 (0.001)	0.40 ( $<.0001$ )	0.36 ( $<.0001$ )	0.29 (0.002)
Doing work tasks	0.38 ( $<.0001$ )	0.30 (0.001)	0.38 ( $<.0001$ )	0.90 ( $<.0001$ )	-	0.89 ( $<.0001$ )	0.88 ( $<.0001$ )	0.33 (0.0002)	0.46 ( $<.0001$ )	0.40 ( $<.0001$ )	0.26 (0.005)
Completing work tasks	0.44 ( $<.0001$ )	0.38 ( $<.0001$ )	0.41 ( $<.0001$ )	0.82 ( $<.0001$ )	0.89 ( $<.0001$ )	-	0.95 ( $<.0001$ )	0.38 ( $<.0001$ )	0.47 ( $<.0001$ )	0.39 ( $<.0001$ )	0.26 (0.004)
Finishing work/school tasks quickly	0.42 ( $<.0001$ )	0.37 ( $<.0001$ )	0.44 ( $<.0001$ )	0.83 ( $<.0001$ )	0.88 ( $<.0001$ )	0.95 ( $<.0001$ )	-	0.38 ( $<.0001$ )	0.47 ( $<.0001$ )	0.39 ( $<.0001$ )	0.32 (0.0004)
community activities	0.55 ( $<.0001$ )	0.58 ( $<.0001$ )	0.59 ( $<.0001$ )	0.30 (0.001)	0.33 (0.0002)	0.38 ( $<.0001$ )	0.38 ( $<.0001$ )	-	0.72 ( $<.0001$ )	0.57 ( $<.0001$ )	0.35 (0.0001)
Difficulties due to barriers	0.60 ( $<.0001$ )	0.59 ( $<.0001$ )	0.58 ( $<.0001$ )	0.40 ( $<.0001$ )	0.46 ( $<.0001$ )	0.47 ( $<.0001$ )	0.47 ( $<.0001$ )	0.72 ( $<.0001$ )	-	0.74 ( $<.0001$ )	0.50 ( $<.0001$ )
Living with dignity	0.52 ( $<.0001$ )	0.48 ( $<.0001$ )	0.44 ( $<.0001$ )	0.36 ( $<.0001$ )	0.40 ( $<.0001$ )	0.39 ( $<.0001$ )	0.39 ( $<.0001$ )	0.57 ( $<.0001$ )	0.74 ( $<.0001$ )	-	0.56 ( $<.0001$ )
Time spent on health condition	0.37 ( $<.0001$ )	0.41 ( $<.0001$ )	0.43 ( $<.0001$ )	0.29 (0.002)	0.26 (0.005)	0.26 (0.005)	0.32 (0.0004)	0.35 (0.0001)	0.50 ( $<.0001$ )	0.56 ( $<.0001$ )	-
Emotional difficulty	0.40 ( $<.0001$ )	0.46 ( $<.0001$ )	0.47 ( $<.0001$ )	0.37 ( $<.0001$ )	0.36 ( $<.0001$ )	0.35 ( $<.0001$ )	0.41 ( $<.0001$ )	0.52 ( $<.0001$ )	0.52 ( $<.0001$ )	0.58 ( $<.0001$ )	0.69 ( $<.0001$ )
Financial burden	0.27 (0.003)	0.39 ( $<.0001$ )	0.42 ( $<.0001$ )	0.33 (0.0003)	0.28 (0.002)	0.25 (0.007)	0.34 (0.0001)	0.49 ( $<.0001$ )	0.54 ( $<.0001$ )	0.62 ( $<.0001$ )	0.59 ( $<.0001$ )

Supplemental Table 1 continued. Correlation between individual items of the WHO-DAS 2.0 (n=119).

	Emotional difficulty due to health condition	Financial burden due to health condition	Difficulty faced by family	Difficulty in doing things for relaxation
Maintaining close relationships	0.41 (<.0001)	0.43 (<.0001)	0.32 (0.0004)	0.36 (<.0001)
Making new friends	0.44 (<.0001)	0.35 (0.0001)	0.30 (0.001)	0.32 (0.0004)
Sexual activities	0.40 (<.0001)	0.38 (<.0001)	0.30 (0.001)	0.47 (<.0001)
Taking care of household responsibilities	0.39 (<.0001)	0.33 (0.0002)	0.39 (<.0001)	0.39 (<.0001)
Doing household tasks	0.40 (<.0001)	0.27 (0.003)	0.35 (<.0001)	0.40 (<.0001)
Completing household tasks	0.46 (<.0001)	0.39 (<.0001)	0.40 (<.0001)	0.45 (<.0001)
Finishing household tasks quickly	0.47 (<.0001)	0.42 (<.0001)	0.40 (<.0001)	0.48 (<.0001)
Day-to-day work	0.37 (<.0001)	0.33 (0.0003)	0.30 (0.001)	0.35 (<.0001)
Doing work tasks	0.36 (<.0001)	0.28 (0.002)	0.29 (0.002)	0.40 (<.0001)
Completing work tasks	0.35 (<.0001)	0.25 (0.007)	0.26 (0.004)	0.41 (<.0001)
Finishing work/school tasks quickly	0.41 (<.0001)	0.34 (0.0001)	0.32 (0.0005)	0.43 (<.0001)
community activities	0.52 (<.0001)	0.49 (<.0001)	0.38 (<.0001)	0.61 (<.0001)
Difficulties due to barriers	0.52 (<.0001)	0.54 (<.0001)	0.45 (<.0001)	0.70 (<.0001)
Living with dignity	0.58 (<.0001)	0.62 (<.0001)	0.55 (<.0001)	0.62 (<.0001)
Time spent on health condition	0.69 (<.0001)	0.59 (<.0001)	0.57 (<.0001)	0.45 (<.0001)
Emotional difficulty	-	0.74 (<.0001)	0.75 (<.0001)	0.55 (<.0001)
Financial burden	0.74 (<.0001)	-	0.75 (<.0001)	0.58 (<.0001)

Supplemental Table 1 continued. Correlation between individual items of the WHO-DAS 2.0 (n=119).

	Concentrating for 10 min	Remembering things to do	Analyzing & solving daily issues	Learning new task	Understanding what others say	Starting & maintain conversation	Standing for 30min	Standing up	Moving around home	Leaving home	
Difficulty faced by family	0.46 (<.0001)	0.33 (0.0002)	0.42 (<.0001)	0.24 (0.01)	0.34 (0.0002)	0.28 (0.002)	0.51 (<.0001)	0.54 (<.0001)	0.42 (<.0001)	0.51 (<.0001)	
Difficulty in doing things for relaxation	0.40 (<.0001)	0.43 (<.0001)	0.47 (<.0001)	0.38 (<.0001)	0.34 (0.0001)	0.37 (<.0001)	0.37 (<.0001)	0.44(<.0001)	0.37 (<.0001)	0.52 (<.0001)	
	Walking over 1 km	Bathing	Getting dressed	Eating	Staying alone	Meeting strangers	Maintaining friendships	Maintaining close relations	Making new friends	Sexual activities	Taking care of household responsibilities
Difficulty faced by family		0.52 (<.0001)	0.51 (<.0001)	0.47 (<.0001)	0.44 (<.0001)	0.32 (0.0004)	0.42 (<.0001)	0.32 (0.0004)	0.30 (0.001)	0.30 (0.001)	0.39 (<.0001)
Difficulty in doing things for relaxation	0.34 (0.0002)	0.55 (<.0001)	0.53 (<.0001)	0.50 (<.0001)	0.40 (<.0001)	0.36 (<.0001)	0.35 (0.0001)	0.36 (<.0001)	0.32 (0.0004)	0.47 (<.0001)	0.39 (<.0001)
	Doing household tasks	Completing household tasks	Finishing household tasks quickly	Day-to-day work	Doing work tasks	Completing work tasks	Finishing work tasks quickly	community activities	Difficulties due to barriers	Living with dignity	Time spent on health condition
Difficulty faced by family	0.35 (0.0001)	0.40 (<.0001)	0.40 (<.0001)	0.30 (0.001)	0.29 (0.002)	0.26 (0.004)	0.32 (0.0005)	0.38 (<.0001)	0.45 (<.0001)	0.55 (<.0001)	0.57 (<.0001)
Difficulty in doing things for relaxation	0.40 (<.0001)	0.45 (<.0001)	0.48 (<.0001)	0.35 (<.0001)	0.40 (<.0001)	0.41 (<.0001)	0.43 (<.0001)	0.61 (<.0001)	0.70 (<.0001)	0.62 (<.0001)	0.45 (<.0001)
	Emotional difficulty due to health condition			Financial burden due to health condition			Difficulty faced by family	Difficulty in doing things for relaxation			
Difficulty faced by family	0.75 (<.0001)			0.75 (<.0001)			-	0.46 (<.0001)			
Difficulty in doing things for relaxation	0.55 (<.0001)			0.58 (<.0001)			0.46 (<.0001)	-			

Appendix. World Health Organization Disability Assessment Scale 2.0

1- none 2- mild 3-moderate 4-severe 5-extreme/cannot do

1. In the last 30 days, how much difficulty did you have in: (understanding and communicating)
  - 1.1 Concentrating on doing something for ten minutes?
  - 1.2 Remembering to do important things?
  - 1.3 Analyzing and finding solutions to problems in day to day life?
  - 1.4 Learning a new task, for example, learning how to get to a new place?
  - 1.5 Generally understanding what people say?
  - 1.6 Starting and maintaining a conversation?
  
2. In the last 30 days, how much difficulty did you have in: (getting around)
  - 2.1 Standing for long periods such as 30 minutes?
  - 2.2 Standing up from sitting down?
  - 2.3 Moving around from inside your home?
  - 2.4 Getting out of your home?
  - 2.5 Walking a long distance such as a kilometer (or equivalent)?
  
3. In the last 30 days, how much difficulty did you have in: (self care)
  - 3.1 Washing your whole body?
  - 3.2 Getting dressed?
  - 3.3 Eating?
  - 3.4 Staying by yourself for a few days?
  
4. In the last 30 days, how much difficulty did you have in: (getting along with people)
  - 4.1 Dealing with people you do not know?
  - 4.2 Maintaining a friendship?
  - 4.3 Getting along with people who are close to you?
  - 4.4 Making new friends?
  - 4.5 Sexual activities?
  
5. In the last 30 days, how much difficulty did you have in: (Life Activities)
  - 5.1 Taking care of your household responsibilities?
  - 5.2 Doing most important household tasks well?
  - 5.3 Getting all the household work done that you needed to do?
  - 5.4 Getting your household work done as quickly as needed?
  - 5.5 Your day to day work/school?

5.6 Doing your most important work/school tasks well?

5.7 Doing your most important work/school tasks well?

5.8 Getting your work done as quickly as needed?

6. In the last 30 days, how much difficulty did you have in: (participation in society)

6.1 How much of a problem did you have in joining in community activities (for example fest., relig., or other comm. activities) in the same way as anyone else can?

6.2 How much of a problem did you have because of barriers or hindrances in the world around you?

6.3 How much of a problem did you have living with dignity because of the attitudes and actions of others?

6.4 How much time did you spend on your health condition, or its consequences?

6.5 How much have you been emotionally affected by your health condition?

6.6 How much has your health been a drain on the financial resources of your family?

6.7 How much of a problem did your family have because of your health problems?

6.8 How much of a problem did you have in doing things by yourself for relaxation or pleasure?

WHODAS Overall Disability Score calculated by summing up the values from 1.1 to 6.8

WHODAS Overall Cognitive Ability Score calculated by summing up the values from 1.1 to 1.6

WHODAS Overall Mobility Score calculated by summing up the values from 2.1 to 2.5

WHODAS Overall Self-Care Score calculated by summing up the values from 3.1 to 3.4

WHODAS Overall Getting Along Score calculated by summing up the values from 4.1 to 4.5

WHODAS Overall Life Activities (Home) Score calculated by summing up the values from 5.1 to 5.4

WHODAS Overall Life Activities (Work) Score calculated by summing up the values from 5.5 to 5.8

WHODAS Overall Cognitive Ability Score calculated by summing up the values from 6.1 to 6.1