

Putting occupational balance on the radar

Content validity of the 11-item Danish Occupational Balance Questionnaire

Honoré, H.; Boll, Mette Lundkvist; Hansen, Alice Ørts; Kristensen, Hanne Kaae

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1 **1.0 Occupational balance assessment**

2 The concept of occupational balance is anchored within occupational science, by which
3 humans are perceived as occupational beings with needs and a capacity to engage in
4 everyday life occupations (Taylor and Kielhofner, 2017; Yerxa, 1990). Balanced
5 engagement in daily occupations is considered to be related to well-being, health and
6 quality of life (Hitch and Pepin, 2020). In a concept analysis of research literature on
7 occupational balance, it has been defined as a “subjective perception of having the right
8 amount and variation of occupations” (Wagman et al., 2012). Enabling meaningful
9 occupation in a client-centered manner is a core purpose of occupational therapy
10 (Townsend, 2002; Tatiana Barcelos and Helene, 2016). In an occupational balance
11 perspective, this relates to enabling a balance in the subjective meaning ascribed to the
12 mix of occupations in everyday life (Eklund et al., 2017). The mix should match a
13 persons' abilities and resources, and be congruent with the persons' values and what the
14 person consider important, necessary and meaningful (Eklund et al., 2017). Though
15 occupational balance is of growing interest in empirical studies (Backman, 2004;
16 Jonsson and Persson, 2006; Wagman et al., 2021; Eklund and Argentzell, 2016), clinical
17 assessment of occupational balance remains a complex issue that has been approached
18 in multiple ways; The concept of occupational balance has been found to be partially
19 captured by 20 different measurements, questionnaires or single items in assessment
20 tools (Dür et al., 2015).

21 The combination of occupations over time and the meaning ascribed to them
22 will vary in the course of a lifetime depending on personal priorities, abilities,
23 obligations, opportunities and context (Backman, 2004). Aspects of occupational
24 balance in families with critical illness has been explored as changing roles and

25 occupations (Nissmark and Malmgren Fänge, 2020). For people with reduced
26 occupational performance, occupational loss and disrupted well-being is common
27 (Walder and Molineux, 2017). Major illness or injury often entail substantial loss of
28 occupations and reduced occupational competence (Walder and Molineux, 2017). In
29 multiple groups, low levels of perceived occupational balance have been reported; In
30 community-dwelling people 1-4 year after stroke (Kassberg et al., 2021), in women
31 with fibromyalgia (Ortiz-Rubio et al., 2022), in patients with symptoms of anxiety or
32 depression (Wagman et al., 2021) and in family caregivers of elderly people (Röschel et
33 al., 2022).

34 Though it is relevant for occupational therapists to enable occupational balance,
35 clinical practice lacks validated assessment tools in clinical practice to measure
36 occupational balance and determine the subjective experience of occupational balance.

37 To assist patients and measure potential progress, standardized test of the
38 patients' baseline and change is necessary (Lee et al., 2003). Questionnaires are a way
39 of objectifying subjective experiences (Meyer and Robertson, 2016) such as
40 occupational balance. In occupational therapy practice, tools should be developed and
41 validated specifically for easy and meaningful application in clinical practice (Smith,
42 1992). However, only two tools for assessment of occupational balance have been
43 translated and introduced into Danish occupational therapy practice. One questionnaire
44 was the 10-item Occupational Balance Questionnaire (OB-Quest) developed by Dür et
45 al. in 2014 (Hansen et al., 2020; Dür et al., 2014). Validity concerns were raised due to
46 an insufficient focus on the subjective experiences of engagement related to meaningful
47 occupations (Hansen et al., 2020). The other assessment tool, the Occupational Balance
48 Questionnaire (OBQ) (Wagman and Håkansson, 2014), is based on the previously
49 mentioned definition and assessment tool developed by Wagman et al. and had a

50 constructional focus on subjective satisfaction with amount and variation of occupations
51 assessed through 13 specific items measured on a six-step ordinal scale. An assessment
52 of the psychometric properties of the OBQ in a population of 67 Swedish participants
53 without any functional limitation or illness showed good internal consistency
54 (Cronbach's alpha 0.936), sufficient test-retest reliability (kappa scores in the 0.61-0.83
55 range) and neither ceiling nor floor effects (Wagman and Håkansson, 2014). Following
56 threshold analysis, the number of response categories was reduced from six to four
57 meaningfully ordered responses ranging from disagree = 0 and partially disagree = 1 to
58 partially agree = 2 and agree = 3; and the number of items was reduced from 13 to 11
59 after investigating their dimensional aspects (Håkansson et al., 2019). The new and
60 improved questionnaire was translated into Turkish (Günel et al., 2020), Spanish (Peral-
61 Gómez et al., 2021) and Norwegian (Uhrmann et al., 2019), showing overall strong
62 psychometric properties. In Denmark, Anne Le Merville et al. have developed and
63 construct validated a Danish translation of the OBQ (OBQ-DK) (Morville A and T.,
64 2016). They concluded that the psychometric properties of the OBQ-DK were
65 acceptable and that the small number of items would make its implementation feasible
66 in clinical settings (Morville A and T., 2016).

67 ***1.1 Introducing a visual output illustrating occupational balance as a clinical*** 68 ***tool***

69 Awareness of occupational balance has been described to help occupational
70 therapists empower patients in prioritizing occupations (Binesh et al., 2021). The
71 OBQ11-DK did not provide a visual output to allow for a reflective dialogue and shared
72 decision-making with the patient. To facilitate a therapeutic conversation with the
73 patient about the experienced occupational balance and a potential need for
74 occupational therapy, the first author developed a visualisation of the assessment result

75 (Appendix 1). A radar chart or spider web was chosen for its excellent visual
76 characteristics (Chaumillon et al., 2017). Visualising activities for self-reflection and
77 awareness has a solid theoretical rooting (Govaerts et al.; Kennedy and Allen, 2017). In
78 occupational therapy it has been used in assessment of activities in daily living
79 (Tornquist and Sonn, 2014) and to visualize energy consumption related to occupations
80 in everyday life (Palm and Ellegård, 2011).

81 The content validity of the OBQ-DK was not previously investigated. Content
82 validity has been proclaimed as the most important psychometric property of patient-
83 reported outcome measures and should always be assessed prior to clinical usage
84 (Terwee et al., 2018). Overall, content validity is defined as the degree to which the
85 content of an instrument is an adequate reflection of the construct measured (Mokkink
86 et al., 2010). Content validity can be further described as the extent to which a
87 measurement tool represents the facets of a construct of interest with regards to its *face*
88 *validity, relevance* (i.e. whether all items are relevant to the construct of interest),
89 *comprehensiveness* (whether key aspects of the construct are missing) and
90 *comprehensibility* (whether the items and response categories are understood in clinical
91 assessment) of the measurement tool and its items (Mokkink et al., 2010).

92 **1.2 Aim**

93 This study aimed to assess the content validity of the OBQ-DK questionnaire for use in
94 occupational therapy practice in three steps; by introducing OBQ-DK with the visual
95 spider web output in three clinical settings; by assessing its face validity, relevance,
96 comprehensiveness and comprehensibility through group interviews; and by assessing
97 the relevance of each of the 11 items based on ratings from experienced clinicians.

98 **2.0 Methods and materials**

99 **2.1 Design**

100 The study was conducted as a convergent mixed methods study comprising a combined
101 analysis of qualitative and quantitative data as described by Creswell et al. (Creswell
102 and Plano Clark, 2018). The qualitative part was reported according to the
103 COnsolidated criteria for REporting Qualitative research (COREQ) (Tong et al., 2007)
104 and the Joanna Briggs Institute Critical Appraisal Checklist for Qualitative Research
105 (Lockwood et al., 2015). Content validity was assessed according to the COnsensus-
106 based Standards for the selection of health status Measurement Instruments (COSMIN)
107 (Terwee et al., 2018).

108 **2.2 Material**

109 The inclusion criteria for interviews were; occupational therapists with a minimum of
110 one assessment performed with the OBQ-DK and employment with one of the three test
111 settings. The study material comprised three group interviews and a survey. For the
112 three settings, purposeful sampling was applied as recommended by Patton et al. (Patton
113 et al., 2015) to obtain a broad and information-rich variation of experiences and
114 perspectives from occupational therapists in three clinical settings with patients of
115 varying age, gender, illness, symptoms and timing with regards to the occupational
116 therapy intervention process. Specifically, the settings were an out-patient hand therapy
117 clinic; an in-hospital rehabilitation clinic for patients with rheumatoid arthritis and other
118 chronic illness; and a highly specialised in-hospital rehabilitation clinic for patients with
119 acquired brain injury. The quantitative survey of item relevance was conducted among a
120 panel counting nine clinically experienced occupational therapists, who were all
121 frequent users of the OBQ-DK.

122 Researchers had no managing relation to participants and were not present
123 during the occupational therapy with patients. The occupational therapists expressed
124 professional interest and engagement towards participating in the study and testing the
125 OBQ-DK.

126 *2.2.1. Implementation and trial period*

127 The theoretical concept of occupational balance and the OBQ-DK questionnaire were
128 introduced to all occupational therapists working at the clinical settings. The
129 introduction was followed by a 2-4-month test period with clinical use of the
130 questionnaire and the spider web. The OBQ-DK was distributed to all occupational
131 therapists in a paper version and an automated beta version developed in Microsoft
132 Excel ® (2016) shown in Appendix 1. Patients were introduced to the concept of
133 occupational balance as the subjective experience of their amount and variation of
134 occupations during the past month. The spider web output was designed to create an
135 immediate overview of the 11 items regarding occupational balance and to quickly
136 identify areas of potential imbalance for the patient.

137 *2.2.2 Interview guide and pilot interview*

138 The researchers developed an interview guide for a semi-structured interview based on
139 the COSMIN terminology (Terwee et al., 2018) and with contributions from all authors
140 (Appendix 2). Open-ended follow-up questions were used to broaden perspectives
141 obtained as recommended by Krippendorff (Krippendorff, 2013). Two pilot interviews
142 were conducted by supervised occupational therapy students to optimise the interview
143 guide. The pilot interviews resulted in the addition of a follow-up question exploring
144 whether the informants felt that the understanding of "amount of occupations" could
145 relate to both too few and too many occupations in items 1 and 8.

146 *2.2.3 Data collection*

147 A total of three group interviews were conducted and audio recorded; one at each of the
148 clinical settings. Each interview was conducted by two of the authors as described
149 below. All authors were experienced occupational therapists, interviewers and
150 researchers. In the first setting, the interview was conducted by AØH and HKK; in the
151 second, by HH and MB; and in the third, by HH and HKK. From each clinical setting,
152 2-5 occupational therapists were interviewed for 45-60 min in groups to gain an
153 understanding of their experiences with and perspectives in relation to use of the OBQ-
154 DK in clinical practice. Interviews were conducted with all participants and
155 interviewers present in the same room, except for the second interview that took place
156 online due to COVID-19 restrictions. The researchers did not experience differences
157 between the interview situations; the occupational therapists had open and nuanced
158 dialogues with each other about differences and similarities in their experiences.

159 Interviews were conducted in an informal tone to obtain condensed information
160 and a high level of abstract reflection through group dialogue with participants. The
161 participants were invited to inspire, confirm or challenge each other's perspectives and
162 experiences and activate memorised reflections from the clinical use of the OBQ-DK.

163 A content validation survey was distributed by email to the experienced
164 occupational therapist panel. It consisted of a content validation form (Appendix 3) with
165 11 items corresponding to the items in the OBQ-DK to assess the relevance of each item
166 in capturing the construct of occupational balance, as introduced by Wagman et al.

167 *2.3 Qualitative data analysis*

168 Group interview recordings were transcribed verbatim as recommended by Brinkmann
169 and Kvale (Brinkmann and Kvale, 2018), and manifest content was initially coded into
170 sub-categories according to the content analysis described by Elo and Kyngäs (Elo and

171 Kyngäs, 2008) within deductively predefined categories of face validity, relevance,
172 comprehensiveness and comprehensibility. Interviews were analysed in Danish and
173 quotes subsequently translated into English language by the first author. An example of
174 the coding process is provided in Appendix 4. Translations were revised by a professor
175 in linguistics. The first author performed initial categorisation, and all four authors
176 triangulated the categorisation process through dialogue and reasoning based on the
177 empirical material. A respondent validation was conducted as member checks were
178 performed by occupational therapists in two of the three clinical settings.

179 *2.5 Quantitative data analysis*

180 Content validity was quantified by calculating a content validity index (CVI) as
181 proposed by Yusoff (Yusoff, 2019). Each item was reviewed by the experienced
182 occupational therapy panel and rated on a scale ranging from 1 = “not relevant” to
183 occupational balance to 2 = “somewhat”, 3 = “quite”, or 4 = “highly” relevant taking as
184 a reference the definition of occupational balance introduced by Wagman et al. Scores
185 were dichotomised to produce an item-level content validity index (I-CVI) equal to the
186 proportion of experienced occupational therapists giving the item a rating of good
187 relevance (a score of 3 or 4). To adjust for chance agreement, a modified kappa value
188 was calculated as recommended by Polit et al. (Polit et al., 2007) and Lynn (Lynn,
189 1986) based on the probability of a chance occurrence (p_c) calculated using the formula
190 for a binomial random variable with one specific outcome: $p_c = [N!/A!(N - A)!] * 0.5^N$,
191 where N = number of occupational therapists and A = number agreeing on good
192 relevance. Modified kappa (κ^*) designating agreement on relevance: $\kappa^* = (I-$
193 $CVI p_c)/(1 p_c)$. The evaluation criteria for kappa were set from acknowledged standards
194 (Joseph L. Fleiss and Bruce Levin, 2005) as Fair = κ^* from 0.40 to 0.59; Good = κ^*

195 from 0.60 to 0.74; and Excellent = $\kappa^* > 0.74$.

196 **3.0 Ethics**

197 The study was undertaken in agreement with the copyright holders of the OBQ-DK and
198 the local managements at each of the clinical settings. All participants provided
199 informed written consent for their interview and survey data to be used in the study. The
200 study was registered with the Danish Data Protection Agency (Ref. no. 712673, case no.
201 1-16-02-682-20) and exempt from approval requirements by the Central Denmark
202 Region Committee on Biomedical Research (Request no. 311/2020. Ref. no. 1-10-72-
203 181-20). No patient data were obtained.

204 **4.0 Results**

205 ***4.1 The respondents***

206 A total of 12 occupational therapists participated in the interviews, and nine
207 occupational therapists were invited to the survey. No occupational therapists declined
208 participation, but one occupational therapist invited to the second interview was unable
209 to attend due to illness. An overview of participants and the number of questionnaires
210 they completed are provided in Table 1.

211 [t] Table title: Table 1. Survey and interview participants [/t].

212

213 [t] Table 1 near here [/t].

214 [t] Table 1 note: An overview of participants, the settings they worked in, and
215 the number of OBQ-DK assessments they completed before participating [/t].

216 **4.1 Findings from interviews**

217 The findings are reported within four main areas of content validity; face validity,
218 relevance, comprehensiveness and comprehensibility. Each of the occupational
219 therapists had used the questionnaire one to seven times with both men and women of
220 29-82 years of age in their respective clinical settings. In the outpatient hand therapy
221 clinic, patient symptoms varied from simple fractures to complex injuries with multiple
222 fractures, nerves and tendon injuries and pain syndromes. One patient had residual
223 symptoms from stroke. In the clinic for people with chronic illness, patients had
224 fibromyalgia, polyarthrosis, lower back fracture and arthritis, and one was co-diagnosed
225 with a personality disorder. The hospitalised patients with acquired brain injury
226 primarily had cognitive but also motor dysfunction. Some needed hands-on assistance
227 in all everyday life occupations, whereas others were independent but experienced
228 fatigue, and mild concentration, memory or attention deficits. Some had lived at home
229 after minor acquired brain injury and were referred for specialised in-hospital
230 rehabilitation due to stress symptoms. The occupational therapists used the
231 questionnaire in both paper and spreadsheet versions. In some situations, patients
232 completed the OBQ-DK unassisted, though most occupational therapists filled in the
233 questionnaire in dialogue with the patients.

234 **4.2 Face validity**

235 The occupational therapists reported that some patients initially struggled with the level
236 of abstraction represented in the construct of "balance":

237 "Then, he was very much like 'well, does it relate to how I keep my [physical]
238 balance?' And I think maybe he's not the only one who gets that thought as a first
239 association; 'does this relate to my [physical] sense of balance?'" II, A, 1612

240 However, occupational balance was measured with the questionnaire for patients of all
241 ages and diagnoses and in all settings, including the in-hospital environment;

242 "Yes, as it is now... He's looking at; he thinks there is balance in the training
243 sessions he has and the breaks he has and what he does. So, I guess, really, it gave
244 a picture of his everyday life now." I3, A, I377

245 Overall, the occupational therapists approved of the OBQ-DK as an assessment of the
246 subjectively experienced occupational balance of their patients and found it helpful in
247 identifying imbalanced areas:

248 "It also helps to find out where we need to start and where within the occupational
249 balance that the patient is challenged." I2, X4, I262

250 ***4.3 Relevance***

251 With respect to relevance, the participants stated that the OBQ-DK supplied in-depth
252 information about occupational balance. This provided a broader view on the contextual
253 impact on the patients' level of functioning, even if patients had no occupational
254 performance restrictions. The occupational therapists also related to the assessed time
255 perspective, and whether the spider web was a relevant add-on for clinical use.

256 *4.3.1 A broader view on the person*

257 Occupational therapists working with hand therapy found that a relevant contribution
258 was associated with the OBQ-DK assessment because the tool provided an opportunity
259 for engaging in a close therapeutic dialogue regarding the influence on daily living from
260 symptoms other than the ones that triggered the referral. This, in turn, provided more
261 insight, gave a better overview and established a common ground for addressing
262 occupational balance.

263 *"It gives a much better view of who the person is and what he or she also does in*
264 *addition to what we had talked about when recording the medical history,*
265 *regarding leisure time and what other issues he or she was experiencing" II, P,*
266 *1548*

267 Thus, the occupational therapists expressed that the structured questionnaire illuminated
268 aspects of occupational balance that did not emerge from their usual conversation with
269 the patients. Furthermore, they found that the assessment was relevant regardless of the
270 patients' functional level because occupational balance was not seen as proportional to
271 the patient's dysfunction or injury but rather related to the interaction between
272 occupations and contextual factors involving personal and contextual resources such as
273 coping capacity.

274 *"The big injuries, I thought, i.e., the ones that are long lasting. But occasionally a*
275 *patient comes here with a small injury where there is no balance at all. It doesn't*
276 *have to be the injury, it is more about the person" II, H, 1600.*

277 They addressed the importance of having enough time to support the patient
278 emotionally and to establish before ending the dialogue if the patient had proper support
279 to handle the imbalanced elements personally or with support from other health
280 services. One occupational therapist reflected that the assessment might not be relevant
281 for all of her patients, but mainly for those who had difficulties complying with the
282 home training schedule or those who mentioned imbalance in daily living. However, her
283 colleague found the assessment relevant for highly functional patients as well to address
284 personal experience and motivation.

285 *"Well, the guy who had a high functional level and who was doing well using his*
286 *hand in everyday life, he said 'it's not about this [pointing at his hand], it's about*
287 *this inside [points towards himself], right?'" H, 171*

288 In line with the statements from the hand therapy clinic, occupational therapists working

289 with chronic illness found that the assessment was a relevant eye opener, but also that
290 cognitive challenges and psychiatric illness may limit the relevance and require other
291 assessment tools and interventions if the patient's capacity for abstract or reflexive
292 thinking was limited.

293 *"Well, the reflections. If you do not reflect so well, then this is difficult." I2, M, 1557*

294 In contrast, minor cognitive deficits from acquired brain injury did not reduce relevance
295 in the perspective of occupational therapists working with in-hospital patients.
296 However, insight into and experience with the everyday life routine and structure after
297 the injury were expressed to be a prerequisite to answering the items in accordance with
298 occupational therapy assessments. An occupational therapist described her patients'
299 stressful everyday life that made assessment of occupational balance very relevant.

300 *"They come from home, where they have lived maybe for a year after discharge*
301 *with a brain injury that was assessed as not too serious, and with which they were*
302 *just sent home. And then everyday life gets stuck in the mud. On admission, they*
303 *are stressed, basically going through the roof and can't calm down at all. So, there*
304 *I think, it could be nice to try to start using it; I mean, how is their occupational*
305 *balance?" I3, X5, 240*

306 For the occupational therapists, assessment of occupational balance was relevant also
307 for patients who presented no immediate challenges related to the performance of
308 occupations in everyday life to illuminate any imbalance in energy management based
309 on minor attention deficits or the challenge of spontaneity from attention deficits in
310 complex occupations and contexts.

311 *"So physically, he has no difficulties. Cognitively he has some difficulties with his*
312 *energy management and how demanding the occupations are to him. Yes, and a*
313 *little spontaneous. Comes up with stuff". I3, X4, 62*

314 The occupational therapists expressed that the aspect of occupational balance was very
315 important to their clinical assessment, and that this aspect remained uncovered by other
316 clinical assessment tools available to their clinical practice.

317 *4.3.2 Relevance of the time perspective*

318 The occupational therapists expressed that a temporal horizon of one month was
319 relevant for patients with long-term and chronic diseases, because the patients were
320 largely unaware of the time frame. However, the occupational therapists experienced
321 that patients based their response on a longer time period, bounded by, e.g., COVID-19
322 restrictions.

323 *"Yeah, that's the thing, because I've been thinking about it, so when I've*
324 *mentioned a month, no one has commented on it. But when they answer, the*
325 *question is whether they're only thinking about the last month or in general.*
326 *Because there are also some people who have answered 'during Covid' for*
327 *example, and then they are thinking far back, clearly. But as a starting point, I*
328 *think you can say that they understood it, and that was what they based it on." I2,*
329 *X2, 1527*

330 During in-hospital rehabilitation after acquired brain injury, the occupational therapists
331 spontaneously changed the time horizon of assessment from one month as set in the
332 introduction to shorter periods of one to two weeks. This was based on the patient's
333 cognitive memory range and a lack of lived experience after the acquired brain injury.
334 Assessing occupational balance over time with the patient transferring between multiple
335 settings during the recalled period posed an additional challenge that was also solved by
336 setting an alternative time period with environmental stability.

337 *"Because then we might have just changed the time range, then they have*
338 *considered the past fortnight. Sometimes a month is a long time to recall,*

339 *especially when you have some cognitive challenges and such like. Yes, so I have*
340 *changed the range a bit, and I don't know if that's ok, but I did." I3, X2, 146*

341 4.3.3 Relevance of the spider web add-on

342 [t] Figure title: Figure 1. The Spider Web [/t].

343

344 [t] Figure 1 near here [/t].

345 [t] Figure 1 note: An example of the radar chart or spider web after two completed
346 assessments. Each of the 11 items are scored from 0-3 and placed on radii. On
347 completion, the centrally placed scores (score 0) on the spider web show which items
348 the disagreed on – indicating a potential imbalance. [/t].

349 The occupational therapists expressed divergent experiences from using the spider web.
350 Some were challenged by the technical spreadsheet solution and the need to print it and
351 therefore chose to draw the spider web on paper, filling in the patient's response by
352 hand.

353 *"No, I didn't even bring the computer. I just drew it by hand". I2, X5, 335*

354 This caused troublesome double registration of the answers. When left unattended with
355 a paper version of the questionnaire, some patients struggled to fill in the spider web.
356 Impaired vision presented an issue when a patient forgot her glasses, in which case the
357 occupational therapists found the spider web less relevant. However, to those who had
358 positive experiences, the spider web and the dialogue it triggered were crucial to the
359 benefits of the occupational balance assessment as the visualization became the
360 foundation of a nuanced dialogue.

361 *"It was definitely the conversation based on the questions and this spider web that*
362 *mattered" I2, M, 412*

363 For patients with a subjective experience of good occupational balance, the
364 visualisation clarified and supported that occupational balance was not a relevant area
365 of therapeutic focus. The spider web was reported as more tangible and concrete to the
366 patients than replying verbally to items. The occupational therapists thought that it was
367 beneficial for the patients to see whether many answers were in line with experiencing a
368 reduced occupational balance. A subjective experience of occupational balance could
369 then be nuanced by looking at the printed result to discover whether single items stood
370 out. In this manner, the results served to substantiate a need for support to change.

371 *"So I have actually experienced that then they get to reflect and get to see*
372 *themselves on the spider web, and they actually come to think that 'maybe I do*
373 *need support'." I2, M, 85*

374 The spider web was also beneficial when patients brought it home for shared reflection
375 and dialogue with their next of kin, and it could be presented and brought up again in
376 therapy for evaluation.

377 **4.4 Comprehensiveness**

378 With respect to comprehensiveness, the occupational therapists addressed divergent
379 opinions about which aspects of subjective experience of occupational balance were not
380 covered by the OBQ-DK. One occupational therapists mentioned that balanced nutrition
381 had been neglected, which she had assumed formed part of the construct: another
382 occupational therapist expressed that the essential aspect of balance concerning
383 experience of meaning in occupations had been neglected.

384 *"It doesn't say so anywhere in the questions. It doesn't say anything about*
385 *meaningful occupation. Of course, there is something about the fact that you 'make*
386 *certain to do something you really want to do', for example. And that these*
387 *different kinds of occupations are balanced for you. It also says 'enough variation,*

388 *what I have to do and want to do'. But really, I think that the aspect of meaningful*
389 *occupation could, well, be a bit clearer, perhaps" I2, X1, 1262.*

390 This statement was in stark contrast to another occupational therapist who noted that the
391 aspect of having too few meaningful occupations, in particular, would emerge by using
392 the OBQ-DK with a patient with a low level of functioning.

393 *"Also, if I were to think about this badly functioning patient we have right now, I*
394 *think it would also show there that there are too few of those occupations that*
395 *really matter or make sense, right? I3, X5, 1475*

396 **4.5 Comprehensibility**

397 With respect to comprehensibility, the occupational therapists addressed multiple issues
398 about how specific items and response options were understood by the patients when
399 using the OBQ-DK in clinical assessment. Occupational therapists in all settings
400 experienced that patients needed elaborate explanations, and they had used cues or
401 rephrasing to promote the patients' understanding.

402 *"I had to explain this many times and emphasize this with such cues or keywords*
403 *or...'it's the variation you have to consider', 'now you have to think more about the*
404 *time or difference'. I had to explain that quite a lot" I1, I, 86*

405 Some underlined or highlighted the use of keywords to promote clarification in order
406 for the patients to understand the distinct semantic content of specific phrases. Even so,
407 some patients were unable to relate to and reply to the items;

408 *"An experience of whether something felt like balance, he found that difficult." I1,*
409 *I, 90*

410

411 Some occupational therapists found it difficult to complete the questionnaire and
412 refrained from finishing all items because conceptual similarities in the wording of
413 some of the items meant that the patients experienced some of them as re-occurring

414 *"She was also a bit like, 'I have answered that, haven't I?', and I don't know if it*
415 *was just her who thought that the questions are very similar" II, P, 139*

416 Without exception, all occupational therapists expressed how patients had difficulties
417 understanding or answering some items. Across the three settings, they reported that the
418 phrasing of items 1, 5, 7, 8, 9 and 11, in particular, were difficult for the patients to
419 understand or answer. E.g. they reported that they were asked to explain phrases like
420 "intellectual occupation" or "obliged", or to account for the meaning of entire items.
421 The items on duty were difficult to answer for a woman who had been relieved of all
422 duties due to her injury. She experienced imbalance from not having any mandatory
423 occupations at all, but with the item phrased as "sufficient time to do them", she felt that
424 she needed to agree and thereby indicate a good occupational balance because time was
425 not the reason for her non-engagement in these occupations. Even patients with a high
426 level of functioning asked supplementary questions to understand the items;

427 *"What do you mean by question no. 7? And she was actually the best functioning of*
428 *them all. She wanted clarification; 'Well, what does this mean? What do you mean*
429 *by that?'" I2, M, 177*

430 Relatedly, both occupational therapists working with patients with chronic illness and
431 in hand injuries particularly challenged the understanding that agreement with the
432 specific items may be interpreted as occupational balance if the patients had too much
433 time on their hands after injury or illness.

434 *"At one point, the female patient is asked if she has enough time, if she has enough*
435 *time for duties. She then answers 3 [= agree], which would be equal to balance,*

436 *but in reality it turns out that she has too much time. So there is at least something*
437 *to consider there." II, P, 60*

438 Within the setting with in-hospital patients with acquired brain injury, this had,
439 however, not been an issue.

440 *"It says 'has enough to do' that can be both ways" I3, X4, 1480*

441 The occupational therapists found that areas where the patients disagreed on an item
442 would often lead to an in-depth conversation of the specific aspect of occupational
443 balance in question. Also, discrepancy between expected answers and patient reporting
444 produced useful and interesting dialogue and reflection with the patients on the specific
445 items.

446 *So, we have done nothing but talk about energy management, and then she chooses*
447 *to say that she has the perfect balance between activity and rest. And we do not*
448 *share that experience. So I held on to that, and it made sense, even though she*
449 *answered 'no' (...) But then we could still talk a little about it, that that is actually*
450 *what we work on a little bit anyway. So there we could make use of it" I3, X2, 400*

451 The discrepancy could, to some extent, relate to response scale comprehensibility. From
452 all settings, the occupational therapists reported that "agreement" could be a difficult
453 parameter for the patient to express.

454 *"There was also something about the understanding, specifically about agreeing*
455 *and disagreeing. 'What is it, I should agree with?' Really, that was tricky for her"*
456 *II, A, 1125*

457 The differentiation of responses with partial agreement and partial disagreement was
458 challenging, too.

459 *"It's that word, partially, I found that a little peculiar, and I can't say why" II, H,*
460 *129*

461 The occupational therapists suggested that agreement in three categories with a middle
462 category and disagreement on the other end might be easier for the patients to report. In
463 other situations, the occupational therapists expressed that some patients were fully
464 capable of responding using the response categories.

465 ***4.0 Relevance of the 11 items***

466 Item relevance was assessed with a content validity index, and by evaluating inter rater
467 agreement in Table 2.

468 [t] Table title: Table 2. The content validity index [/t].

469

470 [t] Table 2 near here [/t].

471 [t] Table 2 note: The content validity index and inter rater agreement of the 11 items of
472 the OBQ-DK. ¹ I-CVI, item-level content validity index. ² pc (probability of a chance
473 occurrence) was computed using the formula for a binomial random variable, with one
474 specific outcome: $p_c = [N!/A!(N-A)!] * 0.5^N$ where N = number of raters and A =
475 number agreeing on good relevance. ³ κ^* = modified kappa designating agreement on
476 relevance: $\kappa^* = (I-CVI_{pc}) / (1-p_c)$. ⁴ Evaluation criteria for kappa: Fair = k of 0.40 to 0.59;
477 Good = k of 0.60 - 0.74; and Excellent = k > 0.74.] [/t].

478 All items were assessed as relevant by at least seven out of nine occupational therapists.

479 The lowest agreement on relevance was observed for item 9. A perfect universal
480 agreement of relevance was established for items 1, 4, 6, 10 and 11. Based on nine
481 ratings, acceptable CVI values should be at least 0.78 (Yusoff, 2019; Lynn, 1986). For
482 the OBQ-DK, all item CVIs were 0.78 or above. Adjusted for chance agreement (Pc),
483 modified kappa ratings were equivalent to excellent agreement for all items.

484 *5.1 Synthesis of qualitative and quantitative findings*

485 Overall, the occupational therapists found that the OBQ-DK was very relevant for their
486 patients regardless of age, gender, functional level, illness severity or even minor
487 cognitive deficits. For all items, an excellent inter rater agreement was found for the
488 relevance of the items as they fit the definition of occupational balance. One limitation
489 in relation to relevance was mentioned for patients who had less than one month's
490 experience with their present level of functioning, and for patients with limited abstract
491 thinking. The latter corroborates with a report of reduced comprehensibility, complex
492 wording and need for supplementary explanation of half of the items. An overlap of
493 items was observed with one or more occupational therapists disagreeing on good
494 relevance and reporting comprehensibility issues in the interviews. This was the case for
495 items 5, 7, 8 and 9.

496 **6.0 Discussion**

497 Thematic findings from the interviews established the content validity of the OBQ-DK
498 with the supplementary spider web visualisation as experienced by occupational
499 therapists in three settings.

500 The results raise some concern regarding the content validity of the OBQ-DK.
501 All items were found by occupational therapist raters to be relevant to the construct of
502 occupational balance. Moreover, overall, the questionnaire was concurrently regarded
503 as relevant for assessment of occupational balance and for targeting of relevant areas of
504 occupational imbalance in all settings across patient diagnoses. Even so, the
505 comprehensiveness of the OBQ-DK was questioned, specifically the coverage of
506 balance of meaningful occupations. Furthermore, comprehensibility was addressed for
507 six out of 11 items, and for the response scale.

508 Constructional complexity was a recurring issue across all practices, and the
509 occupational therapists expressed mismatches between the items and patients'
510 experience with occupational balance. Such divergent observations call for a
511 reconsideration of the measured concept (Patrick et al., 2011). The OBQ-DK
512 questionnaire was based on a definition by Wagman et al. that derived from an
513 empirical analysis based on a review of research literature on occupational balance from
514 1987-2018 (Wagman et al., 2012). The definition of occupational balance was thus
515 derived from combining a multitude of understandings and aspects of the construct from
516 previous research, which is a great achievement. It may therefore be argued that the
517 OBQ-DK is a widely scoped questionnaire covering all aspects of occupational balance,
518 which is in line with the fact that all items were assessed as relevant to the construct.
519 However, in the present study, occupational therapists reported that reduced
520 comprehension led to responses that did not match the patients' occupational balance,
521 and to frequent patient requests for elaborate explanations during assessments. The
522 reduced comprehensibility of specific items and the response scale categories warrant
523 further development or adjustments of the OBQ-DK.

524 ***6.1 Potential for improved content validity***

525 For a revised version, the trade-off between coverage of all aspects of occupational
526 balance and conceptual distinction between items may benefit from revision to produce
527 a simpler version with fewer items. A reduction of the number of items to avoid the
528 overlap of perceived meanings and complexities in wording may potentially improve
529 the content validity; however, doing so without excluding important aspects of
530 occupational balance would probably not be possible. Alternatively, the many aspects of
531 occupational balance may be assessed in separate assessment tools or they may

532 advantageously be separated into thematic dimensions within the questionnaire to
533 promote the semantic distinction of the specific areas of occupational balance.

534 Another way of improving content validity may be to introduce a requirement of
535 formal instruction for assessors. A precise conceptual understanding is required to
536 distinguish constructs like balance between occupations that you "feel like doing" and
537 occupations that "give energy", on the one hand, and occupations that you "have to do"
538 and occupations that "take energy", on the other hand (items 9 and 10). Though the
539 concepts have separate meanings, the detailed differentiation of their similarities place
540 high demands on linguistic reflection, memory, attention and other complex cognitive
541 functions on the part of the patient, which in turn restricts the patient groups to which
542 the questionnaire may be validly applied. If the OBQ-DK was supplemented by a
543 review on occupational balance and psychometric implications in a manual and an
544 instruction video, a uniform understanding of phrases could be enhanced which would
545 likely broaden respondent scope.

546 ***6.2 Relevance of the response scale***

547 Lack of clarity, misinterpretation and unintended ambiguity are primary reasons
548 for instrument revision (Patrick et al., 2011). With the given response options,
549 occupational therapists reported that patients reported some ambiguity. Response
550 categories ranged from agree and partially agree to partially disagree and disagree. The
551 semantic content of the two middle categories is not mutually exclusive as partial
552 agreement implicates partial disagreement. The 4-point Likert scale has the advantage
553 and downside of forcefully having the informant form an opinion (Norman, 2010).
554 Whereas the absence of a neutral middle category may fail to record patients' neutral
555 positions, the forced opinion may promote a substantial dialogue on occupational
556 balance between the occupational therapist and the patient in a clinical context. In a

557 revision, the two middle categories could be unlabelled to avoid the linguistic overlap of
558 semantic content in "partially agree" or "partially disagree" (Agree – x – x – Disagree).

559 **6.3 Aggregating experience in categories and over time**

560 In administration of the OBQ-DK, the occupational therapists or the patients
561 sometimes altered the time frame, which may be due to a complex or irrelevant time
562 perspective being stated in the items. In the introduction, patients are asked to consider
563 their occupational balance during the past month. In the first item, an extra time layer is
564 added; “when I think of a regular week, I have an appropriate amount of occupations to
565 do”. This means that a patient responding to the item is supposed to think of a regular
566 week within the past month. For patients experiencing a disruptive change in everyday
567 life such as illness or injury, a regular month or week may not exist.

568 In addition to multiple time frames, aggregated time perspectives pose a
569 challenge by introducing a so-called aggregation error by placing a burden on the
570 respondent to remember and mentally aggregate how time has been distributed (Juster
571 et al., 2003). This appears, e.g., in item 11: “I am satisfied with the time I spend on
572 sleep, rest and restitution”. To reply to the item, the respondent must first aggregate
573 time spend on the mentioned categories and then consider whether this is satisfactory. A
574 new wording may be considered to promote an unambiguous understanding and reduce
575 aggregation bias.

576 **6.4 Limitations**

577 We have attempted to promote the transparency of the study by describing the stepwise
578 planning and execution of the research process. However, some limitations deserve
579 mention. By predefining the categories of content validity in the analysis, it may be
580 argued that *a priori* conceptualizations were forced upon the interview data. However,

581 the concept-driven deductive method has proven advantages in that it identifies
582 interesting themes from data while respecting an experientially based reality and also
583 addressing specific predefined aspects of content validity; face validity, relevance,
584 comprehensiveness and comprehensibility.

585 The results showed both overlapping and unique perspectives in data
586 represented across the purpose-sampled groups. However, it may be argued that content
587 redundancy may not have been reached with the three interviews. Additional studies are
588 recommended to substantiate the results.

589 The study was focused on the perspective of occupational therapists, and patient
590 perspectives were represented through their reflections only. To fully assess the content
591 validity as recommended in the COSMIN guides, a complementary study could focus
592 on issues related to comprehensibility or relevance related to the patients' direct
593 perspectives. However, we recommend that recommended revisions should be applied
594 prior to further studies.

595 ***6.5 Clinical, educational and international implications***

596 Important results have emerged in the form of an enhanced understanding of clinicians'
597 experience with the use of the OBQ-DK to assess occupational balance in clinical
598 settings. We were surprised to learn that the occupational therapists perceived the
599 questionnaire to be clinically useful and relevant despite the above assessed
600 comprehensibility challenges. The OBQ-DK excelled in assessing occupational balance
601 even for patients who had a high functional level and who presented no challenges in
602 relation to assessment of occupations of everyday life. In occupational therapy practice,
603 assessing occupational balance could be highly relevant for patients even with no
604 apparent occupational limitations to provide a full picture of the patient's everyday life

605 following illness or injury. We recommend cautious application of the OBQ-DK for
606 patients with limited abstract thinking.

607 In education, presenting the OBQ-DK to students should be done with precautions for
608 the validity concerns raised in our study. For international inspiration, we hope that the
609 methods and limitations shared in our study could be helpful in assessment of the
610 content validity of the OBQ or similar assessment tools in other languages.

611 **7.0 Conclusion**

612 The content validity of the OBQ-DK was assessed by occupational therapists in three
613 clinical settings. Comprehensiveness issues were found and new wordings or elaborate
614 instructions are recommended to enhance constructional clarity. Furthermore, the
615 response scale labels and levels should be adapted prior to use in occupational therapy
616 practice. The spider web add-on may promote therapeutic dialogue in clinical practice.
617 The patient perspective needs further investigation.

618 **Key findings**

- 619 • All items in the OBQ-DK were regarded as relevant for assessment of
620 occupational balance
- 621 • Some concerns were raised regarding the content validity of the OBQ-DK
- 622 • Revisions were recommended for the OBQ-DK prior to further studies or
623 clinical use

624 **What the study has added**

625 This study contributed with an assessment of the content validity of the OBQ-DK
626 among occupational therapists in clinical settings, and revisions were recommended
627 prior to further studies or clinical use.

628 **8.0 References**

- 629 Backman CL (2004) Occupational Balance: Exploring the Relationships among Daily
630 Occupations and Their Influence on Well-Being. *Canadian journal of*
631 *occupational therapy (1939)* 71(4): 202-209.
- 632 Binesh M, Aghili R and Mehraban AH (2021) Occupational balance in people with type-
633 2 diabetes: A comparative cross-sectional study. *The British Journal of*
634 *Occupational Therapy* 84(2): 122-129.
- 635 Brinkmann S and Kvale S (2018) *Doing interviews*. Los Angeles: SAGE.
- 636 Chaumillon R, Romeas T, Paillard C, et al. (2017) Enhancing data visualisation to capture
637 the simulator sickness phenomenon: On the usefulness of radar charts. *Data in*
638 *brief* 13: 301-305.
- 639 Creswell JW and Plano Clark VL (2018) *Designing and conducting mixed methods*
640 *research*. Thousand Oaks, CaliforniaL: SAGE.
- 641 Dür M, Steiner G, Fialka-Moser V, et al. (2014) Development of a new occupational
642 balance-questionnaire: incorporating the perspectives of patients and healthy
643 people in the design of a self-reported occupational balance outcome instrument.
644 *Health and quality of life outcomes* 12(1): 45-45.
- 645 Dür M, Unger J, Stoffer M, et al. (2015) Definitions of occupational balance and their
646 coverage by instruments. London, England: SAGE Publications, 4-15.
- 647 Eklund M and Argentzell E (2016) Perception of occupational balance by people with
648 mental illness: A new methodology. *Scandinavian Journal of Occupational*
649 *Therapy* 23(4): 304-313.
- 650 Eklund M, Orban K, Argentzell E, et al. (2017) The linkage between patterns of daily
651 occupations and occupational balance: Applications within occupational science
652 and occupational therapy practice. *Scandinavian Journal of Occupational*
653 *Therapy* 24(1): 41-56.
- 654 Elo S and Kyngäs H (2008) The qualitative content analysis process. *Journal of Advanced*
655 *Nursing* 62(1): 107-115.
- 656 Govaerts S, Verbert K, Klerkx J, et al. Visualizing Activities for Self-reflection and
657 Awareness. Berlin, Heidelberg: Springer Berlin Heidelberg, 91-100.
- 658 Günal A, Pekçetin S, Demirtürk F, et al. (2020) Validity and reliability of the Turkish
659 Occupational Balance Questionnaire (OBQ11-T). *Scandinavian Journal of*
660 *Occupational Therapy* 27(7): 493-499.

661 Hansen AØ, Boll M, Skaarup L, et al. (2020) Danish translation and validation of the
662 Occupational Balance Questionnaire. *Scandinavian Journal of Occupational*
663 *Therapy*. DOI: 10.1080/11038128.2020.1842491. 1-15.

664 Hitch D and Pepin G (2020) Doing, being, becoming and belonging at the heart of
665 occupational therapy: An analysis of theoretical ways of knowing. *Scandinavian*
666 *journal of occupational therapy*. DOI: 10.1080/11038128.2020.1726454. 1-13.

667 Håkansson C, Wagman P and Hagell P (2019) Construct validity of a revised version of
668 the Occupational Balance Questionnaire. *Scandinavian Journal of Occupational*
669 *Therapy*. DOI: 10.1080/11038128.2019.1660801. 1-9.

670 Jonsson H and Persson D (2006) Towards an Experiential Model of Occupational
671 Balance: An Alternative Perspective on Flow Theory Analysis. *Journal of*
672 *Occupational Science* 13(1): 62-73.

673 Joseph L. Fleiss and Bruce Levin MCP (2005) Statistical methods for rates and
674 proportions. *Statist. Med* 24: 2744-2745.

675 Juster FT, Hiromi O and Frank PS (2003) An Assessment of Alternative Measures of
676 Time Use. *Sociological methodology* 33(1): 19-54.

677 Kassberg A-C, Nyman A and Larsson Lund M (2021) Perceived occupational balance in
678 people with stroke. *Disability and Rehabilitation* 43(4): 553-558.

679 Kennedy H and Allen W (2017) Data Visualisation as an Emerging Tool for Online
680 Research. 307-326.

681 Krippendorff K (2013) *Content analysis : an introduction to its methodology*. Los
682 Angeles ;; SAGE.

683 Lee D, Reynolds CR and Willson VL (2003) Standardized Test Administration: Why
684 Bother? *Journal of forensic neuropsychology* 3(3): 55-81.

685 Lockwood C, Munn Z and Porritt K (2015) Qualitative research synthesis:
686 methodological guidance for systematic reviewers utilizing meta-aggregation. *Int*
687 *J Evid Based Healthc* 13(3): 179-187.

688 Lynn MR (1986) Determination and Quantification Of Content Validity. *Nursing*
689 *research (New York)* 35(6): 382-386.

690 Meyer RE and Robertson SA (2016) Surveys and objectifying the subjective. *Veterinary*
691 *anaesthesia and analgesia* 43(4): 358-360.

692 Mokkink LB, Terwee CB, Patrick DL, et al. (2010) The COSMIN study reached
693 international consensus on taxonomy, terminology, and definitions of

694 measurement properties for health-related patient-reported outcomes. *Journal of*
695 *clinical epidemiology* 63(7): 737-745.

696 Morville A HC, Wagman P, and T. H (2016) Validity of the Danish version of
697 Occupational Balance Questionnaire. In: *COTEC - ENOTHE*.

698 Nissmark S and Malmgren Fänge A (2020) Occupational balance among family members
699 of people in palliative care. *Scandinavian Journal of Occupational Therapy* 27(7):
700 500-506.

701 Norman G (2010) Likert scales, levels of measurement and the “laws” of statistics.
702 *Advances in health sciences education : theory and practice* 15(5): 625-632.

703 Ortiz-Rubio A, Cabrera-Martos I, Haro-Piedra E, et al. (2022) Exploring perceived
704 occupational balance in women with fibromyalgia. A descriptive study.
705 *Scandinavian Journal of Occupational Therapy* 29(5): 395-402.

706 Palm J and Ellegård K (2011) Visualizing energy consumption activities as a tool for
707 developing effective policy: Visualizing energy consumption activities.
708 *International journal of consumer studies* 35(2): 171-179.

709 Patrick DLPM, Burke LBRMPH, Gwaltney CJP, et al. (2011) Content Validity—
710 Establishing and Reporting the Evidence in Newly Developed Patient-Reported
711 Outcomes (PRO) Instruments for Medical Product Evaluation: ISPOR PRO Good
712 Research Practices Task Force Report: Part 2—Assessing Respondent
713 Understanding. *Value in Health* 14(8): 978-988.

714 Patton MQ, Patton MQ and Patton MQ (2015) *Qualitative research & evaluation*
715 *methods : integrating theory and practice*. Thousand Oaks, California: SAGE
716 Publications, Inc.

717 Peral-Gómez P, López-Roig S, Pastor-Mira MÁ, et al. (2021) Cultural Adaptation and
718 Psychometric Properties of the Spanish Version of the Occupational Balance
719 Questionnaire: An Instrument for Occupation-Based Research. *International*
720 *journal of environmental research and public health* 18(14): 7506.

721 Polit DF, Beck CT and Owen SV (2007) Is the CVI an acceptable indicator of content
722 validity? Appraisal and recommendations. *Research in nursing & health* 30(4):
723 459-467.

724 Röschel A, Wagner C and Dür M (2022) Associations between occupational balance,
725 subjective health, and well-being of informal caregivers of older persons based on
726 a cross-sectional study. *BMC geriatrics* 22(1): 445-445.

- 727 Smith RO (1992) The Science of Occupational Therapy Assessment. *OTJR (Thorofare,*
728 *N.J.)* 12(1): 3-15.
- 729 Tatiana Barcelos P and Helene P (2016) Enabling occupation: occupation-based and
730 client centred practice in Occupational Therapy. *Cadernos de Terapia*
731 *Ocupacional da UFSCar* 24(2): 403-412.
- 732 Taylor RR and Kielhofner G (2017) *Kielhofner's model of human occupation : theory*
733 *and application.*
- 734 Terwee CB, Prinsen CAC, Chiarotto A, et al. (2018) COSMIN methodology for
735 evaluating the content validity of patient-reported outcome measures: a Delphi
736 study. *Quality of life research* 27(5): 1159-1170.
- 737 Tong A, Sainsbury P and Craig J (2007) Consolidated criteria for reporting qualitative
738 research (COREQ): a 32-item checklist for interviews and focus groups.
739 *International journal for quality in health care* 19(6): 349-357.
- 740 Tornquist K and Sonn U (2014) Towards an ADL taxonomy for occupational therapists:
741 Previously published in Scandinavian Journal of Occupational Therapy 1994;
742 1:69-76. *Scandinavian Journal of Occupational Therapy* 21(sup1): 20-27.
- 743 Townsend ESSCAoOT (2002) *Enabling occupation : an occupational therapy*
744 *perspective.* Ottawa: Canadian Association of Occupational Therapists.
- 745 Uhrmann L, Hovengen I, Wagman P, et al. (2019) The Norwegian Occupational Balance
746 Questionnaire (OBQ11-N) - development and pilot study. *Scandinavian Journal*
747 *of Occupational Therapy* 26(7): 546-551.
- 748 Wagman P, Hjärthag F, Håkansson C, et al. (2021) Factors associated with higher
749 occupational balance in people with anxiety and/or depression who require
750 occupational therapy treatment. *Scandinavian Journal of Occupational Therapy*
751 28(6): 426-432.
- 752 Wagman P and Håkansson C (2014) Introducing the Occupational Balance Questionnaire
753 (OBQ). *Scandinavian Journal of Occupational Therapy* 21(3): 227-231.
- 754 Wagman P, Håkansson C and Björklund A (2012) Occupational balance as used in
755 occupational therapy: A concept analysis. *Scandinavian Journal of Occupational*
756 *Therapy* 19(4): 322-327.
- 757 Walder K and Molineux M (2017) Occupational adaptation and identity reconstruction:
758 A grounded theory synthesis of qualitative studies exploring adults' experiences

759 of adjustment to chronic disease, major illness or injury. *Journal of Occupational*
760 *Science* 24(2): 225-243.

761 Yerxa E (1990) An Introduction to Occupational Science, A Foundation for Occupational
762 Therapy in the 21st Century. *Occupational therapy in health care* 6(4): 1-17.

763 Yusoff MSB (2019) ABC of Content Validation and Content Validity Index Calculation.
764 *Education in Medicine Journal* 11(2): 49-54.

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766