Disability & Rehabilitation, 2012, 1–12, Early Online

ISSN 0963-8288 print/ISSN 1464-5165 online
DOI: 10.3109/09638288.2012.656793

informa
healthcare

RESEARCH PAPER

Development and structural validation of a shortened version of the Participation Scale

S.A.M. Stevelink[1], T. Hoekstra[2,3], S.M.T. Nardi[4], C.H. van der Zee[5], N. Banstola[6], R. Premkumar[7], P.G. Nicholls[8] & W.H. van Brakel[1,9]

[1]Athena Institute for Research on Innovation and Communication in Health and Life Sciences, Faculty of Earth and Life Sciences, VU University Amsterdam, the Netherlands, [2]Department of Health Sciences and the EMGO Institute for Health and Care Research, Faculty of Earth- and Life Sciences, VU University Amsterdam, the Netherlands, [3]Department of Epidemiology and Biostatistics and the EMGO Institute for Health and Care Research, VU University Medical Center, the Netherlands, [4]Technical Team for Rehabilitation and Research, Lauro de Souza Lima Institute- Bauru-SP, Brasil and Center for Biomedical Sciences, Adolfo Lutz Institute, São José do Rio Preto-SP, Brasil, [5]Rudolf Magnus Institute of Neuroscience and Center of Excellence for Rehabilitation Medicine, University Medical Center Utrecht and Rehabilitation Center De Hoogstraat, Utrecht, the Netherlands, [6]Netherlands Leprosy Relief, Biratnagar, Nepal, [7]Schieffelin Institute of Health Research & Leprosy Centre, Karigiri, Tamil Nadu, India, [8]School of Health Sciences, University of Southampton, Southampton, Hants, United Kingdom, and [9]Royal Tropical Institute, Leprosy Unit, Amsterdam, the Netherlands

Purpose: **To validate a shortened version of the Participation Scale (P-scale) that will be quicker to use and to describe the factor structure found in the P-scale data in various study samples.** ***Methods:*** **A large multi-country and multi-cultural database was compiled consisting of 5125 respondents. Item analysis, explanatory factor analysis and confirmatory factor analysis were applied to identify items for deletion and investigate the factor structure of the P-scale.** ***Results:*** **The multi-country database included 11 databases from six different countries. Respondents were affected by a range of health conditions, including leprosy, HIV/AIDS, dermatological conditions and various disabilities. Of the respondents included 57% were male. The P-scale Short (PSS) contains 13 items. A two-factor structure, with factors named "work-related participation" (three items) and "general participation" (10 items), showed the best model fit (Comparative Fit Index = 0.983, Tucker Lewis Index = 0.979, Rooted Mean Square Error of Approximation = 0.061). The Cronbach's alphas were very good for both the whole scale and the subscales, 0.91, 0.83 and 0.90, respectively. Correlation between the two factors was high (r = 0.75) indicating that interpreting the P-scale as measuring an overall factor "participation" is still valid. A very high correlation (*r* = 0.99) was found between the full P-scale and the PSS.** ***Conclusions:*** **The findings suggest good validity of the P-scale across a range of languages and cultures. However, field testing needs to confirm the validity of the PSS to measure the level of social participation restrictions across cultures and health conditions.**

Implications for Rehabilitation

- The Participation Scale can be used to measure restrictions in social participation.
- The Participation Scale showed consistent structural validity across many different cultural settings and target groups.
- A shorter version of the scale was developed, namely the Participation Scale Short.
- The Participation Scale Short needs field testing before application to test its reliability, validity, reduction in administration time and usefulness.

Keywords: Disability, factor structure, measurement, participation, psychometric properties, scales

Introduction

People are social beings. All over the world they live in social relationships. They participate in family life, relationships with friends, community life, religious activities, civil society,

Correspondence: Sharon A.M. Stevelink, Athena Institute for Research on Innovation and Communication in Health and Life Sciences, Faculty of Earth and Life Sciences, VU University Amsterdam, the Netherlands. Tel: 0031630386936. E-mail: s.a.m.stevelink@vu.nl; sharonstevelink@hotmail.com

(Accepted January 2012)

work, politics and so on. The precise nature and level of this participation may vary from person to person and culture to culture, but otherwise, "social participation" is a global phenomenon. Many people living with disabling conditions such as leprosy, HIV/AIDS, physical disabilities, mental illness or epilepsy experience restrictions in their participation in daily life situations, such as marital and domestic life, relationships, communication, mobility, education and work. Participation, defined as 'the involvement in a life situation' in the International Classification of Functioning, Disability and Health (ICF), is therefore a key concept in disability and rehabilitation [1]. The above restrictions in participation are defined as "problems an individual may experience in involvement in life situations" [1]. Improving participation is often cited as an important goal of rehabilitation interventions [2–4].

To assess the level of participation (restriction), several instruments have been developed for adults as well as children [5–10]. The Participation Scale (P-scale) was developed to be suitable for use in low and middle income countries, while the majority of the other participation instruments have been developed and applied in high-income countries only [11,12].

Theoretically grounded in the ICF, the P-scale was developed simultaneously in six languages in three countries namely India, Nepal and Brazil [12]. The P-scale has been used widely across different study populations, languages and countries [4,12–16]. As far as we know, the instrument is available in at least 25 languages, including Bahasa Indonesia, Bangla, Dutch, Hausa, Hebrew, Hindi, Khmer, Nepali, Portuguese, Tamil, Telugu, Thai and Vietnamese. The scale has been used among persons affected by leprosy, HIV/AIDS, diabetes mellitus and various disabilities such as physical, visual, mental and multiple disabilities.

The psychometric properties of the scale were found to be good. During the initial validation study, factor analysis indicated a unidimensional structure [12]. The first factor, conceptualized to be "participation," accounted for 90% of the variability (n = 497). Additional analysis revealed a Cronbach's alpha of 0.92, intra-tester stability of 0.83 (weighted κ) and inter-tester reliability of 0.80 (n = 296 and n = 210, respectively) [12]. The P-scale was also part of a study conducted in West Bengal and Tamil Nadu (India) aimed at validating a tool kit to measure different aspects of stigma in a community-based rehabilitation setting. The analysis showed a Cronbach's alpha of 0.93 (n = 806) and test-retest reproducibility of 0.80 (weighted κ; n = 49) [14]. Recently, a further validation study in Eastern Nepal unexpectedly showed best fit for a two factor model instead of the previously found one-dimensional structure [17]. This two-factor model consisted of a factor "work-related participation" (three items) and "general participation" (15 items) [17]. These findings may have implications for the use and statistical analysis of the P-scale.

Experiences from the field suggest that the P-scale is very useful. However, further shortening of the scale would make it more suitable for rapid assessments. For example, it would encourage public health managers and researchers to use the scale in situations where a quick assessment is important, especially in surveys. For this reason, and because of the ambiguous results found regarding the dimensionality of the P-scale, the present study aimed to investigate ways to further shorten the instrument and to re-investigate the factor structure through secondary analysis of a large multi-country and multi-culture database.

Methods

Design

Several large databases with P-scale data were collected from six countries and synthesized into one large database.

Sample

With the help of one of the initial developers of the P-scale (W.v.B), several previous and current users of the scale were contacted and kindly requested to share their databases for the compilation of a large multi-country and multi-cultural database. The following in and exclusion criteria were applied. The databases had to have:

- At least 150 respondents
- Sufficient data quality (<25% missing values) and availability of an extended study description (e.g. study population, sampling method, methods used).

We decided to include only respondents of 16 years and older based on the applicability of the work-related items in the P-scale. In addition, the P-scale was developed and validated for use in adult populations, defined by the *World Health Organization* as "persons aged 16 years and older" [18]. Since various versions of the P-scale exist, only the databases that used versions three to five of the P-scale were included in the multi-country database. This was done to ensure the comparability of the items used.

Research instrument

The P-scale, used to measure the level of participation restriction, consists of 18 items that cover most participation domains conceptualized in the ICF, namely learning and applying knowledge, communication, mobility, self-care, domestic life, interpersonal interactions and relationships, major life areas and community, social and civic life. The scale has a two-tier question and response format. First, a respondent is asked to indicate whether they experience restriction in a particular aspect of participation. Only if this is the case, the respondent is asked how big a problem this restriction is to him or her, namely "no problem" (one point), "small problem" (two points), "medium problem" (three points) or "large problem" (five points). A unique feature of the P-scale is the peer concept, where respondents are asked to compare themselves with a peer, defined as "someone similar to the respondent in all respects except for the disease or disability" [12]. For example, "Do you have equal opportunity as your peers to find work? Answer options, *Yes, No* or *Sometimes; [if sometimes or no]* How big a problem is this to you?" The overall P-score is derived by summing the individual item scores. A higher score indicates a higher level of participation

restriction. As mentioned above, the scale has shown to have good psychometric properties in several studies [4,12,14,15].

Data analysis

Data were cleaned and prepared for analysis. Missing values were handled as follows: a participant was excluded when more than two missing items were identified in the P-scale. Otherwise the mean score of the participant was imputed. For invalid scoring, the same criteria were applied. Data were analyzed using MPlus (version 6.11) and SPSS (version 16.0).

The statistical procedure, based on the guidelines proposed by Floyd and Widaman, was divided in two rounds [18]. A randomly selected 50% of the cases in the database was used during round one [19]. The other 50% was used during round two, to cross-validate the structure found [19].

The first round consisted of the application of explanatory factor analysis (EFA) because we aimed primarily to clarify the dimensions being measured with the P-scale [20]. Because of the discrepancy between the two-factor structure found in the recent study in Nepal and the unidimensional factor structure found in the initial development study, common factor analysis was applied without limiting the number of factors [12,17]. An oblique geomin rotation method (weighted least squares with adjustment for means and variances) was used, assuming correlated factors and taking into account the non-normal distribution of the data [19,20]. Factors were extracted during the first round based on the break point of the successive eigenvalues identified in the Scree Plot (e.g. number of factor points before a break in the Scree Plot), item factor loadings (at least $r = 0.30$) and interpretability [20–21]. In addition, items were identified as eligible for deletion based on the presence of cross loadings ($r > 0.30$), factor loadings ($r < 0.30$), item-total correlations ($r < 0.40$), endorsement levels (>80% of the respondents answering "no restriction" on a particular item), substantial increase in Cronbach's alpha if the item was deleted (>0.05) and field experiences [21–23].

During the second round, confirmatory factor analysis (CFA) was applied to investigate whether the scale showed the same dimensions across the different study populations and to determine the best model of the P-scale fitting the research data. Sufficient model fit was measured using the comparative fit index (CFI), Tucker Lewis index (TLI) and rooted mean square error of approximation (RMSEA). The latter was considered adequate if below 0.08, where the first two fit indices needed to exceed the threshold of 0.95 [24,25]. Furthermore, Pearson's correlation between the full and the shortened version of the P-scale short (PSS) was investigated. We hypothesized a highly significant correlation of at least 0.60 between the full and shortened version of the P-scale.

These statistical procedures were applied first on the individual databases from the different study samples. Subsequently, the multi-country database was analysed to describe the definitive structure of the P-scale.

Results

A total of 11 databases from six different countries, namely Bangladesh, Brazil, India, Indonesia, Nepal and the Netherlands, were included in the present study (Table I). The final multi-country database consisted of 5125 respondents with a range of health conditions, including leprosy, HIV/AIDS and various disabilities. The percentage missing values per item was acceptable (<1% per item). The multi-country database comprised 2917 males and 2203 females (five missing items) with a mean age (SD) of 44.1 SD 16.1. The mean total score of the 18-item P-scale was 18.8 SD 19.2 and the median was 12.0 (interquartile range: 24). Figures 1 and 2 provide an overview of the median P-scale total score stratified by gender, health condition and country.

Table I. Overview of included databases P-scale.

Authors and year	Country	Language	Study population	Number of respondents	Mean score (SD) P-scale
van Veen et al., 2011 [45]	Bangladesh	Bangla	Respondents with leprosy-related disability	222	13.53 (18.30)
Nardi et al., 2011 [27]	Brazil	Portuguese	Leprosy affected respondents after treatment	220	13.53 (14.77)
Rensen et al., 2011 [14]	India	Tamil, Bengali	Respondents affected by leprosy	795	16.37 (19.13)
Stevelink et al., 2011 [15]	India	Tamil	Respondents affected by leprosy or living with HIV/AIDS	190	13.05 (15.58)
Pichaimuthu et al., 2011 [28]	India	Tamil	Respondents affected by psoriasis or vitiligo	290	8.45 (11.84)
van Brakel et al., in preparation	Indonesia	Bahasa Indonesia	Respondents with various disabilities	295	17.47 (21.14)
Sihombing et al., in press [47]	Indonesia	Bahasa Indonesia	Respondents affected by leprosy	1299	13.99 (14.70)
Stevelink et al., 2012 [43]	Nepal	Nepali	Respondents with various disabilities	151	36.00 (23.49)
NLR report, 2009 [46]	Nepal	Nepali	Respondents with various disabilities	1430	29.71 (20.66)
van der Zee et al., 2011 [44]	Netherlands	Dutch	Respondents with various disabilities	384	17.36 (16.28)
van Brakel et al., 2006 [12]	Development database; Brazil India Nepal	Portuguese Nepali Tamil Hindi Telugu Bengali	Respondents with various disabilities	555	15.04 (14.75)

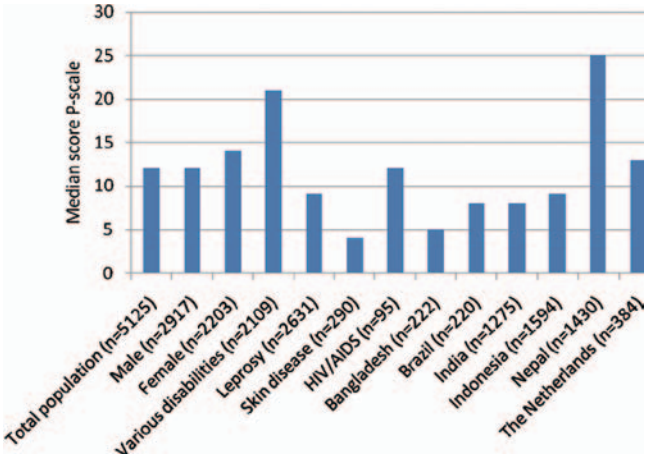

Figure 1. Overview median scores total score 18-item P-scale.

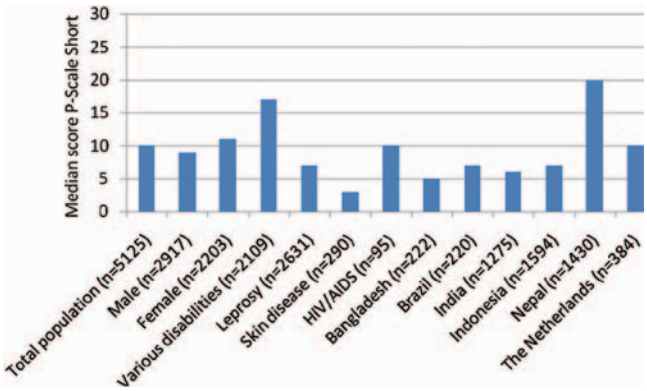

Figure 2. Overview median scores 13-item P-scale Short.

EFA and CFA per database

The EFA results suggested two different factor structure patterns across the study samples (Table II). A one factor structure, named "participation" was found in four databases (Bangladesh, India and Indonesia). Four databases revealed a two-factor solution that consisted of "work-related participation" (N1–N3) and "general participation" (remaining items) (Nepal, the Netherlands and Indonesia). Both one (four databases) and two-factor structure [4] models were found across the different health conditions included in the studies. The cumulative variance explained by the best EFA fitting models ranged from 44.4% to 70.2%. The majority of the items showed adequate factor loadings. However, inadequate item-total correlations of some items (<0.4) were identified in different study samples (Table II).

The CFI, TLI and RMSEA showed adequate fit across the different factor structures and all the Cronbach's alphas were found to be above the threshold of 0.70 (Table II). Two databases (Brazil and India) showed insufficient fit indices for both the one and two factor solutions.

After the analysis by database, a multi-country database was compiled consisting of 5125 respondents. This database was randomly divided in two subsets. The first subset for EFA (n = 2562) and the second subset for CFA (n = 2563) were comparable with respect to gender, health condition and country (Table III).

EFA multi-country database

The Scree Plot suggested a one-factor model; however, the magnitude of the eigenvalues (>1.0) suggested a two-factor structure model (Figure 3).

Four items were identified for deletion based on a combination of substantial cross-loadings ($r > 0.30$), low item-total correlations ($r < 0.40$), endorsement levels (<20%; data not shown) and no or minimal reduction in the Cronbach's alpha after item deletion (Table IV). These were "Caring for oneself" (N9), "Using separate eating utensils" (N15), "Helping other people" (N16) and "Learning new things" (N18). After several rounds of analyses, where several item deletion combinations were tested, the decision was made to select these four items for deletion. In addition item seven, "being socially active," was deleted based on our own experiences in the field research, as well as those from other researchers (personal communications, Beise, 2010 and Sermrittirong, 2011). Respondents were confused because of the overlap with items five and six and the abstract wording of this particular item. Removal of this item had no substantial implications for the Cronbach's alpha and fit indices. After deletion, a two-factor model consisting of "work-related participation" (three items) and "general participation" (10 items) best fitted the data (Table IV).

CFA multi-country database

The one-factor models suggested inadequate model fit, whereas the two-factor models indicated good fit for the 18-item P-scale (CFI = 0.970, TLI = 0.966, RMSEA = 0.065) (Table V). The 13-item P-scale showed even better overall fit indices (CFI = 0.983, TLI = 0.979 and RMSEA = 0.061). The correlation between the two factors was high, specifically $r = 0.75$ (Table V). In both versions of the P-scale the factor loadings were adequate (Table VI). The internal consistency (Cronbach's alpha ≥ 0.70) was very good for both item versions. An alpha of 0.93 was found for the 18-item version of the P-scale. The subscales "work-related participation" and "general participation" showed an alpha of 0.83 and 0.92, respectively. The shortened version of the P-scale showed an alpha of 0.91 for the total scale and 0.83 and 0.90 for the subscales. Furthermore, the full P-scale total score was highly correlated with the score of the PSS ($r = 0.99$, $p < 0.001$).

Extended results of the EFA and CFA can be obtained via the corresponding author. See Appendix 1 for the PSS.

Discussion

The purpose of the present study was to develop a shortened version of the P-scale and describe the factor structure with the best possible fit.

We performed item analysis, and exploratory and confirmatory factor analyses. In combination with the results of the EFA, the item analysis helped to identify possible items for deletion. In addition, EFA determined the structure of the item set that would make up the PSS. CFA then validated the hypothesized factor structure by determining the goodness-of-fit in a random 50% of our database. We excluded

Table II. Results of EFA and CFA for the different databases from Bangladesh, Brazil, India, Indonesia, Netherlands and Nepal.

		Results EFA				Results CFA			
Country (authors, year, n)[a]	Factors	Eigen values	Cumulative variance (%)	Item factor loadings below 0.30	Item-total correlations below 0.40	CFI	TLI	RMSEA	Internal consistency
Bangladesh (van Veen et al., 2011 [45], n = 222)	F1: participation (N1–18)	10.47	58.2	None	NLearn (0.377)	0.981	0.978	0.046	0.91
Brazil (Nardi et al., 2011 [27], n = 220)	F1: participation (N1–N18)	6.88	38.2	NEat (0.260) N Discuss (0.298)	NDiscuss (0.192) NEat (0.224) NMeet (0.267)	0.879	0.863	0.073	0.87
	F1: N1–N13, N15 (NEat) F2: N14 (N Discuss), N16–18 (NHelp, NMeet, NLearn)	F1: 6.88 F2: 1.89	48.7	None	"same"	0.895	0.880	0.068	F1: 0.87 F2: 0.48
India (Rensen et al., 2010 [14], n = 795)	F1: participation (N1–N18)	11.21	62.3	None	None	0.972	0.969	0.066	0.93
India (Pichaimuthu et al., 2011 [28], n = 290)	F1: participation (N1–N18)	7.86	43.7	None	NOpwork (0.334) NDiscuss (0.232) NCare (0.323) NMove (0.375) NRespect (0.311) NMeet (0.399)	0.767	0.736	0.093	0.85
	F1: work-related participation & learning (N1–N3 & N18) (NOpWork, NEconomic, NWorkHard, NLearn) F2: general participation (N4–N17)	F1: 7.86 F2: 2.24	56.1	F1: None F2: None	"same"	0.912	0.900	0.058	F1: 0.74 F2: 0.86
Indonesië (van Brakel et al., in preparation, n = 295)	F1: participation (N1–N18)	11.94	66.3	None	NMeet (0.344) NRespect (0.207) NEat (0.344)	0.989	0.987	0.062	0.94
Indonesia (Sihombing et al., in press [47], n = 1299)	F1: participation (N1–N18)	8.27	45.9	None	NDiscuss (0.361) Neat (0.246)	0.942	0.934	0.077	0.91
	F1: work-related participation (N1–N3) (NOpWork, NEconomic, NWorkHard) F2: general participation(N4–N18)	F1: 8.27 F2: 1.321	53.3	F1: None F2: None	"same"	0.968	0.964	0.057	F1: 0.78 F2: 0.89
Nepal (Stevelink et al., 2012 [43], n = 151)	F1: participation (N1–N18)	10.87	60.4	None	NOpWork (0.359) NRelation (0.304) NMeet (0.322)	0.979	0.976	0.114	0.93
	F1: work-related participation (N1–N3) F2: general participation (N4–N18)	F1: 10.87 F2: 1.76	70.2	F1: None F2: None	"same"	0.992	0.991	0.069	F1: 0.78 F2: 0.93
Nepal (NLR report 2009 [46], n = 1430)	F1: participation (N1–18)	9.77	54.3	None	NHelp (0.272)	0.934	0.925	0.127	0.93
	F1: work-related participation (N1–N3) F2: general participation (N4–N18)	F1: 9.77 F2: 1.38	61.9	F1: None F2: NVisit (0.275) Cross-loading with Factor 1 (0.297)	"same"	0.959	0.954	0.101	F1: 0.81 F2: 0.92
Netherlands (van der Zee et al., 2011, [44] n = 384)	F1: N1–N18	8.90	49.4	None	NLearn (0.381) NEat (0.222)	0.938	0.930	0.093	0.91
	F1: work-related participation (N1–N3) F2: general participation (N4–N18)	F1: 8.90 F2: 1.39	57.2	F1: None F2: None	"same"	0.979	0.976	0.055	F1: 0.82 F2: 0.90
Development; Brazil, India, Nepal, (van Brakel et al., 2006 [12], n = 555)	F1: participation (N1–13 N15–N18)	7.99	44.4	None	NDiscuss (0.224) NEat (0.220) NCare (0.311) NMeet (0.233)	0.974	0.970	0.051	0.86

EFA, explanatory factor analysis; CFA, confirmatory factor analysis; CFI, comparative fit index; TLI, Tucker Lewis index; RMSEA, rooted mean square error of approximation.

[a]The database from India was included in the multi-country database but excluded for the analyses per database due to "one or more zero cells in the bivariate table."

five items with poor properties in this process resulting in a 13-item scale with good goodness-of-fit indices and excellent Cronbach's alphas (see Appendix 1).

All 11 study samples showed good internal consistency indicating that the P-scale can be used to measure participation restrictions in a reliable manner across countries and different study populations. Two different factor structures were identified in the samples, a unidimensional structure (measuring "general participation") and a two-dimensional structure (measuring "work-related participation" and "general participation"). The variance in factor structure may be explained due to local cultural differences in the experience of participation restriction, including the social composition of communities, economic differences, environment, traditional roles and family life as well as the effect of translation into a particular language [26,27]. In the samples where a two-dimensional structure was found, both factors were highly correlated, suggesting that, together, they measured a higher-level factor which may be interpreted as "participation."

For two study samples, namely Brazil [28] and India [29], the one- and two-factor model showed inadequate model fit. This may be due to the fact that several items showed inadequate item-total correlations or factor loadings, which may account for the factor instability [22]. In addition, the P-scale median for both studies was low, seven and four, respectively. This indicates that the variability in the study sample was less than in the other databases resulting in difficulties to establish a sufficient factor model. Despite this finding, we decided to include both studies in the multi-country database to establish an as large as possible sample size. Additional analysis revealed that exclusion of the studies from the multi-country database showed no remarkable differences in fit indices (data not shown).

During a study performed in 2000, factor stability of the General Health Questionnaire was investigated [30]. This questionnaire can be used to assess the psychological well-being of respondents. A total of 15 different centres, comprising 11 different languages, were included and principal component analysis was conducted. Also in this study, the factor structure differed between the centres. According to the authors, possible explanations were sampling variation and multiple cross-loadings of the items [30]. Another widely used instrument, the Short From (SF)- 36 Health Survey, was tested extensively on the generalisability of the expected two-dimensional construct of health (physical and mental) [31]. Findings showed that the proposed factor structure was stable across countries supporting the construct validity of the scale [32]. In addition, tests to investigate the cross-cultural equivalence of the SF-36, such as structural equation modelling and Rasch analysis, were performed also and showed similar findings across countries results [33,34]. The latter two methods are also interesting opportunities for future research to provide detailed evidence for the cultural equivalence of the P-Scale.

Large differences were found in the median score of the P-scale (Figures 1 and 2). The persons affected by various disabilities, such as physical, multiple, hearing or vision-related disability reported a twice as high level of restrictions

Table III. Respondent characteristics multi-country 1 (n = 2562) and multi-country 2 (n = 2563) subsets.

Variable	Multi-country 1 N (%)(EFA)	Multi-country 2 N (%)(CFA)	χ^2 p value
Total	2562 (50)	2563 (50)	
Sex			0.508
Male	1457 (49.6)	1481 (50.4)	
Female	1103 (50.5)	1080 (49.5)	
Health Condition			0.593
Various disabilities	1077 (50.8)	1042 (49.2)	
Skin disease	141 (50.5)	138 (49.5)	
Leprosy	1306 (49.4)	1336 (50.6)	
HIV/AIDS	38 (44.7)	47 (55.3)	
Country			0.558
Bangladesh	104 (48.6)	110 (51.4)	
Brazil	119 (52.0)	110 (48.0)	
India	618 (49.8)	624 (50.2)	
Indonesia	786 (48.6)	830 (51.4)	
Nepal	746 (51.9)	692 (48.1)	
Netherlands	189 (49.0)	197 (51.0)	

EFA, explanatory factor analysis; CFA, confirmatory factor analysis.

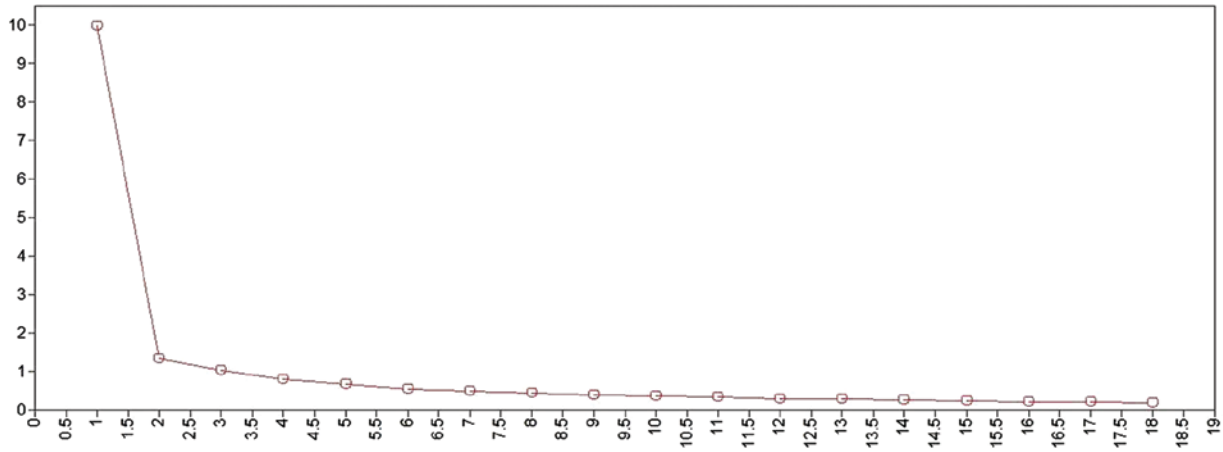

Figure 3. Scree Plot explanatory factor analysis multi-country database (n = 2562).

Table IV. Results EFA multi-country subset 1 (n = 2562).

		Results EFA						
Database	Factors	Eigenvalues	Cumulative variance (%)	Item factor loadings below 0.30	Cross-loadings (>0.30)	Internal consistency	Item-total correlations below 0.40	Cronbach's alpha if item deleted
Multi-country subset 1 (N = 2562)	F1: participation (N1-N18)	9.98	55.4	None	NA	0.92	NHelp (0.370)	NLearn: 0.92 NEat: 0.92 NCare: 0.92 NHelp: 0.93
	F1: work-related participation (N1–N3) (NOpWork, NEconomic, NWorkHard) F2: general participation (N4–N18)	F1: 9.98 F2: 1.34	62.9	F1:None F2: None	NLearn (F1: 0.399 & F2: 0.341)NEat (F1: 0.371 & F2: 0.389)NCare (F1: 0.276 & F2: 0.462)	F1: 0.83 F2: 0.92	F1: NoneF2: NHelp 0.387	F1: -F2: NHelp: 0.92 NLearn: 0.91 NEat: 0.91 NCare: 0.91
Multi-country subset 1 (N = 2562) (Exclusion N7, N9, N15, N16, N18) (NSocActiv, NCare, NEat, NHelp NLearn)	F1: N1–N6 N8 N10–N14 N17	F1: 7.80	60.0	None	NA	F1: 0.91	None	-
	F1: work-related participation (N1–N3)F2: general participation N4–N6 N8 N10–N14 N17	F1: 7.80 F2: 1.17	69.0	None	None	F1: 0.83 F2: 0.90	None	F1: - F2: -

EFA, explanatory factor analysis.

Table V. Results CFA multi-country subset 2 (n = 2563).

Database	Factors	CFI	TLI	RMSEA	Correlation between factors
Multi-country subset 2 (N = 2563)	F1: participation(N1–N18)	0.935	0.927	0.096	–
	F1: work-related participation (N1–N3) F2: general participation (N4–N18)	0.970	0.966	0.065	$r = 0.762$
Multi-country subset 2(N = 2563) (Exclusion N7, N9, N15, N16, N18) (NSocActiv, NCare, NEat, NHelp NLearn)	F1: participation (N1–N6 N8 N10–N14 N17)	0.937	0.924	0.118	–
	F1: work-related participation (N1–N3) F2: general participation (N4–N6 N8 N10–N14 N17)	0.983	0.979	0.061	$r = 0.751$

CFA, confirmatory factor analysis; CFI, comparative fit index; TLI, Tucker Lewis index; RMSEA, rooted mean square error of approximation.

compared to leprosy affected persons and even four times that of people with skin diseases (vitiligo and psoriasis). This difference may be explained by the fact that more than half of the respondents were more severely affected by a physical or multiple disability, which may increase the level of participation restriction (mobility, involvement community, social, civic life etc.) compared to the persons affected by leprosy or skin disease that had in most cases no (visible) impairments. Corresponding results were found in a study conducted in the Netherlands among persons affected by leprosy. A significant correlation was identified between the severity of the impairment with activity limitations and participation restrictions [35]. In addition, activity limitations were found to be a major determinant of participation restriction [35]. A study conducted in the Philippines aimed to compare the level of activity limitation and participation restriction in persons with a visible impairment due to leprosy, persons newly diagnosed with leprosy without an impairment and persons with other skin diseases symptomatic for more than 1 month [36]. They concluded that persons with a visible impairment reported higher levels of activity limitations and participation restrictions compared to persons without a visible impairment.

The possibility may be there that the identified differences in mean P-scale score can be partly explained by improper translation procedures. However, the P-scale was simultaneously developed in Nepal, Brazil and in four languages in India using a lengthy and extensive validation process [12]. To facilitate the process of further translation of the scale into additional languages, an extensive user manual was developed, including fairly detailed translation instructions. These

Table VI. Factor loadings for the 18- and 13-item version of the P-scale (n = 2563).

	18-item version P-scale		13-item version P-scale	
Item	Factor 1	Factor 2	Factor 1	Factor 2
N1 Opportunity to find work	0.864		0.857	
N2 Work as hard	0.859		0.871	
N3 Contribute economically to household	0.822		0.814	
N4 Visit places outside village/ neighbourhood		0.822		0.835
N5 Take part in festivals and rituals		0.862		0.862
N6 Take part in casual social and recreational activities		0.838		0.830
N7 Socially active		0.831		
N8 Same respect in community		0.790		0.791
N9 Opportunity to take care of yourself		0.664		
N10 Visit other people in community		0.759		0.740
N11 Move around inside and outside house and village/ neighbourhood		0.788		0.802
N12 Visit public places in village/ neighbourhood		0.856		0.864
N13 Household work		0.618		0.620
N14 Opinion count family discussions		0.720		0.732
N15 Eating utensils kept with those used by the rest of the household		0.675		
N16 Help other people		0.486		
N17 Comfortable meeting new people		0.722		0.724
N18 Confident to learn new things		0.671		

cover the initial meaning and key words of the items and a recommended translation procedure. The Bahasa Indonesia, Bangla and Dutch version of the P-scale were established using the translation protocol in the P-scale user manual. The other studies included in this paper used language versions that were already developed during the initial validation study. Therefore, improper translation seems an unlikely cause for variation in the scale scores.

The results from the analyses of the multi-country database suggested the best model fit for a two-factor model. The first factor, named "work-related participation," relates to the major life area "work and employment" and represents three items related to acquiring work, performance and economic self-sufficiency [1,12]. The second factor, labelled "general participation," relates to the remaining domains of participation such as community, social and civic life, interpersonal interactions and relationships, domestic life, mobility and communication [1,12]. Due to the item reduction process, the participation domains of learning and applying knowledge and self-care are no longer covered [1]. For this reason, the abbreviated version will be less useful to compile a complete profile of participation restriction. An important advantage of the item reduction may be a reduced administration time of the P-scale imposing less burden on the respondent. As a result, the short version is particularly suitable for use in surveys that use a toolkit of measurements, or in other situations where time is short in supply, to provide a quantification of the level of participation restriction in the population under study.

The item reduction may raise a question regarding the content validity of the P-scale. However, we believe that the PSS still covers the most important domains of participation. The explained variance and the internal consistency are still very high suggesting that the deleted items only hardly contributed to the participation measurement. In addition, no definitive consensus exists about the domains that are part of the participation construct [2]. We realize that "activity" and "participation" are part of the same component in the ICF, but in several participation instruments, such as the Participation Objective, Participation Subjective and the Participation Measure Post Acute Care, self-care is not included [37,38]. Self-care can be argued to be more related to activity than participation, although it contributes to fulfilling life roles [2,37,39]. "Activity" is defined as "execution of a task or action by an individual" [1]. One other item, "confidence to learn new things," can also be considered to relate more to activity than participation.

Compared to other measures of participation that are widely used, such as the Impact on Participation and Autonomy (IPA) [6] and the Assessment of Life Habits (LIFE-H) [8], the full version of the P-scale was already shorter. This advantage has now been further strengthened with the PSS [4,40]. However, field testing needs to confirm the time reduction achieved with the PSS compared to the full form of the P-scale. Several studies have shown that the available scales measure participation restriction in an adequate manner (and some also activity limitation) and, in general, have good psychometric properties [40,41]. The LIFE-H is developed in Canada and, to the best of our knowledge, only validated for use in high-income country settings [7,8,42,43]. Therefore, the use of the LIFE-H in low and middle-income countries needs further investigation. The IPA focuses on the concept of autonomy, a very important concept in many high-income countries [6]. However, this may limit its applicability because autonomy is culture dependent. In many cultures, inter-dependence is valued most, rather than autonomy. People have not the choice or the ability to live the way they want or to fulfil their tasks in the way they want. The P-scale uses comparison with "peers" as a benchmark for participation. Peers are people like the respondent, but without the condition that is investigation. In this way, differences between cultures and also between groups within cultures are more easily overcome. Nevertheless, a thorough translation and contextualisation process is needed to ensure local cultural validity. This will be the same for the short version of the P-scale.

The 13-item PSS is shorter than the original by deletion of five items. Four of these were deleted because they performed less well than the rest. These were "Learning new things" (N18), "Helping other people" (N16), "Caring for oneself" (N9) and "Using separate eating utensils" (N15). A possible explanation may be the fact that these did not include the distinctive (peer) comparison feature used in the majority of the

P-scale items. The item "Socially active" (N7) was removed because our own field experiences with the P-scale as well as those from other researchers. These suggested that respondents were confused by the perceived overlap with the items "Do you take part in religious festivals and rituals" (N5) and "Do you take part in social and recreational activities" (N6) (personal communication, Beise, 2010 and Sermrittirong, 2011). Furthermore, respondents reported that the item was difficult to understand due to its abstract formulation ("being socially active"). However, we recognize the importance of the deleted item and for this reason decided to rephrase the item "Do you take part in social and recreational activities" into "Do you take part in social activities as much as your peers do? (e.g. sports, chat, meetings, religious or community activities)," adding the examples of the deleted item.

The study that used the latest version of the P-scale (version 6.0), which had replaced the item "Using separate eating utensils" by "Maintain or start a long-term relationship," was excluded from the analyses because only one study was available that used this version and the sample size was too small to perform adequate factor analysis. At this moment, the evidence is insufficient to make an adequate decision about the inclusion of the new item in the PSS.

The question arises of the implication of the two factor structures for the use of the scale and the statistical analysis of both versions of the P-scale. For three reasons we believe that the overall P-score can still be regarded valid and reliable measure of the construct of participation. First, while the model fit statistics of the CFA suggest a two-factor model, strong correlation was found between the factors. This would support the existence of a "high-order" general participation factor. Second, the factor loadings were also adequate for a unidimensional model of the P-scale (data not shown). Third, internal consistency for the unidimensional scale was found to be excellent in all databases. The variations in fit statistics found reflect both the wide variation in cultures and conditions represented in the databases and the complex nature of the underlying construct. Given these factors, the consistency found between the various databases regarding the various indices is more remarkable than the differences.

Taking these results into account, we suggest that the P-scale can be used either as one overall scale or as two subscales of "work-related" and "general participation" that load on a strong general factor of "participation." The score calculation for the 13-item version of the P-scale will be the same, only the range of the score will change from 0–90 to 0–65. The division in several severity categories of participation restrictions, such as proposed in the initial development study, based on the 95th percentile of a control population and the distribution of the participation restriction scores in the affected populations, needs further research, before these categories can be revised. The same is true for the possible application of the sub-scale "work-related participation" as an indicator instrument. The results found during this study are very promising for the validity of the PSS. Internal consistency was found to be good for the PSS and a very high correlation was found between the full P-scale and the PSS, supporting the construct validity of the PSS. However, adequate field testing is necessary to confirm these expectations. We invite researchers to use the PSS across study populations to further test its reliability, validity, reduction in administration time and usefulness.

An important strength of the study is the large sample size. As a consequence we were able to cross-validate the proposed structure resulting from the EFA by CFA with a random subset of the multi-country database. Due to the applied randomisation, the groups were comparable for important variables such as gender, country and health condition that might affect the factor structures within the groups [19,20]. An important limitation is the fact that only small study samples were included for certain subgroups, such as subjects from Bangladesh and Brazil, HIV/AIDS-affected respondents and respondents with skin diseases such as vitiligo or psoriasis. Secondly, in some of the studies included, no special efforts were made to test the validity of the P-scale in the particular study setting. The results from such studies should be interpreted with caution. However, the good internal consistency found across the study populations and the consistency of the factor models across the study samples plead in favour of the validity of the P-scale data used. Other culturally important and socio-demographic variables such as residency, religion, education and income were not available in the majority of the databases. They may have accounted for the differences in factor structures of the diverse study samples.

In conclusion, a 13-item version of the P-scale, the P-scale-Short, was established and showed good results. Both versions of the P-scale showed optimal fit for a two-factor model comprising "work-related participation" and "general participation." However, they can be applied as an unidimensional scale also. Additional field testing needs to confirm the validity of the PSS.

Acknowledgements

We would like to express our gratitude to Ms. Corline Brouwers, Dr. Bassey Ebenso, Dr. Marcel Post, Ms. Carin Rensen, Dr. Benyamin Sihombing, Dr. Vania Del'Arco Paschoal, Dr. Dirce Zanetta and Dr. Natasja van Veen for their willingness to share their database with us. In addition, we would like to thank Prof. Henrica de Vet for her comments on the methodological framework as well as Dr. Peter Nicholls for his useful feedback on an earlier draft of this paper.

***Declaration of interest*:** The authors report no conflicts of interest.

References

1. World Health Organisation. International Classification of Functioning, Disability and Health (ICF). Geneva, Switzerland: WHO; 2001.
2. Dijkers MP. Issues in the conceptualization and measurement of participation: an overview. Arch Phys Med Rehabil 2010;91:S5–16.
3. Dijkers MP, Whiteneck G, El-Jaroudi R. Measures of social outcomes in disability research. Arch Phys Med Rehabil 2000;81:S63–S80.
4. van der Zee CH, Priesterbach AR, van der Dussen L, Kap A, Schepers VP, Visser-Meily JM, Post MW. Reproducibility of three self-report participation measures: The ICF Measure of Participation and Activities

Screener, the Participation Scale, and the Utrecht Scale for Evaluation of Rehabilitation-Participation. J Rehabil Med 2010;42:752–757.
5. Bedell GM. Developing a follow-up survey focused on participation of children and youth with acquired brain injuries after discharge from inpatient rehabilitation. NeuroRehabilitation 2004;19:191–205.
6. Cardol M, de Haan RJ, van den Bos GA, de Jong BA, de Groot IJ. The development of a handicap assessment questionnaire: the Impact on Participation and Autonomy (IPA). Clin Rehabil 1999;13:411–419.
7. Fauconnier J, Dickinson HO, Beckung E, Marcelli M, McManus V, Michelsen SI, Parkes J, et al. Participation in life situations of 8-12 year old children with cerebral palsy: cross sectional European study. BMJ 2009;338:b1458.
8. Noreau L, Fougeyrollas P, Vincent C. The LIFE-H: Assessment of the quality of social participation. Technol Disabil 2002;14:113–118.
9. Noreau L, Lepage C, Boissiere L, Picard R, Fougeyrollas P, Mathieu J, Desmarais G, Nadeau L. Measuring participation in children with disabilities using the Assessment of Life Habits. Dev Med Child Neurol 2007;49:666–671.
10. Rosenberg L, Jarus T, Bart O. Development and initial validation of the Children Participation Questionnaire (CPQ). Disabil Rehabil 2010;32:1633–1644.
11. Noonan VK, Kopec JA, Noreau L, Singer J, Chan A, Mâsse LC, Dvorak MF. Comparing the content of participation instruments using the international classification of functioning, disability and health. Health Qual Life Outcomes 2009;7:93.
12. van Brakel WH, Anderson AM, Mutatkar RK, Bakirtzief Z, Nicholls PG, Raju MS, Das-Pattanayak RK. The Participation Scale: measuring a key concept in public health. Disabil Rehabil 2006;28:193–203.
13. Ebenso B, Fashona A, Ayuba M, Idah M, Adeyemi G, S-Fada S. Impact of socio-economic rehabilitation on leprosy stigma in Northern Nigeria: findings of a retrospective study. Asia Pac Disabil Rehabil J 2007;18:98–119.
14. Rensen C, Bandyopadhyay S, Gopal PK, Van Brakel WH. Measuring leprosy-related stigma - a pilot study to validate a toolkit of instruments. Disabil Rehabil 2011;33:711–719.
15. Stevelink SA, van Brakel WH, Augustine V. Stigma and social participation in Southern India: differences and commonalities among persons affected by leprosy and persons living with HIV/AIDS. Psychol Health Med 2011;16:695–707.
16. vander Zee CH, Priesterbach AR, van derDussen L, Kap A, Schepers VPM, Visser-Meily JMA, Post MW et al. Reproducibility of three self-report participation measures: the ICF measure of participation and activities screener, the participation scale, and the utrecht scale for evaluation of rehabilitation-participation. J Rehabil Med 2010;42:752–757.
17. World Health Organization. Enhanced Global Strategy for Further Reducing the Disease Burden due to Leprosy (plan period: 2011–2015). New Delhi: WHO Regional Office for South-East Asia; 2009.
18. Floyd FJ, Widaman KF. Factor analysis in the development and refinement of clinical assessment instruments. Psychol Assess 1995;7: 286–299.
19. de Vet HC, Adèr HJ, Terwee CB, Pouwer F. Are factor analytical techniques used appropriately in the validation of health status questionnaires? A systematic review on the quality of factor analysis of the SF-36. Qual Life Res 2005;14:1203–18; dicussion 1219.
20. Costello AB, Osborne JW. Best practices in exploratory factor analysis: four recommendations for getting the most from your analysis. Pract Assess Res Eval 2005;10. Available at: http://pareonline.net/getvn.asp?v=10&n=7
21. StatSoft. Electronic Statistics Textbook. 2011. Available at: http://www.statsoft.com/textbook/Accessed on June 2011.
22. Nunnally J. Psychometric theory. New York: McGraw-Hill; 1978.
23. Hu LT, Bentler PM. Cut-off criteria for fit indexes in covariance estructure analysis: conventional criteria versus new alternatives. Struct Equat Model 1999;6:1–55.
24. Schreiber JB, Nora A, Stage FK, Barlow EA, King J. Reporting structural equation modeling and confirmatory factor analysis results: A review. J Educ Res 2006;996:323–337.
25. Law M. Participation in the occupations of everyday life. Am J Occup Ther 2002;56:640–649.
26. Herdman M, Fox-Rushby J, Badia X. 'Equivalence' and the translation and adaptation of health-related quality of life questionnaires. Qual Life Res 1997;6:237–247.
27. Nardi SM, Paschoal VD, Zanetta DM. Social participation of people affected by leprosy after discontinuation of multidrug therapy. Lepr Rev 2011;82:55–64.
28. Pichaimuthu R, Ramaswamy P, Bikash K, Joseph R. A measurement of the stigma among vitiligo and psoriasis patients in India. Indian J Dermatol Venereol Leprol 2011;77:300–306.
29. Werneke U, Goldberg DP, Yalcin I, Ustün BT. The stability of the factor structure of the General Health Questionnaire. Psychol Med 2000;30:823–829.
30. Ware JE, Snow KK, Kosinski M, Gandek B. SF-36 Health Survey manual and interpretation guide. Boston, MA: The Health Institute; 1993.
31. Ware JE Jr, Kosinski M, Gandek B, Aaronson NK, Apolone G, Bech P, Brazier J, et al. The factor structure of the SF-36 Health Survey in 10 countries: results from the IQOLA Project. International Quality of Life Assessment. J Clin Epidemiol 1998;51: 1159–1165.
32. Keller SD, Ware JE Jr, Bentler PM, Aaronson NK, Alonso J, Apolone G, Bjorner JB, et al. Use of structural equation modeling to test the construct validity of the SF-36 Health Survey in ten countries: results from the IQOLA Project. International Quality of Life Assessment. J Clin Epidemiol 1998;51:1179–1188.
33. Raczek AE, Ware JE, Bjorner JB, Gandek B, Haley SM, Aaronson NK, Apolone G, et al. Comparison of Rasch and summated rating scales constructed from SF-36 physical functioning items in seven countries: results from the IQOLA Project. International Quality of Life Assessment. J Clin Epidemiol 1998;51:1203–1214.
34. Slim FJ, van Schie CH, Keukenkamp R, Faber WR, Nollet F. Effects of impairments on activities and participation in people affected by leprosy in The Netherlands. J Rehabil Med 2010;42:536–543.
35. Boku N, Lockwood DN, Balagon MV, Pardillo FE, Maghanoy AA, Mallari IB, Cross H. Impacts of the diagnosis of leprosy and of visible impairments amongst people affected by leprosy in Cebu, the Philippines. Lepr Rev 2010;81:111–120.
36. Brown M, Dijkers MP, Gordon WA, Ashman T, Charatz H, Cheng Z. Participation objective, participation subjective: a measure of participation combining outsider and insider perspectives. J Head Trauma Rehabil 2004;19:459–481.
37. Gandek B, Sinclair SJ, Jette AM, Ware JE Jr. Development and initial psychometric evaluation of the participation measure for post-acute care (PM-PAC). Am J Phys Med Rehabil 2007;86:57–71.
38. Noonan VK, Kopec JA, Noreau L, Singer J, Dvorak MF. A review of participation instruments based on the International Classification of Functioning, Disability and Health. Disabil Rehabil 2009;31: 1883–1901.
39. Magasi S, Post MW. A comparative review of contemporary participation measures' psychometric properties and content coverage. Arch Phys Med Rehabil 2010;91:S17–S28.
40. Noonan VK, Kopec JA, Noreau L, Singer J, Chan A, Masse LC, Dvorak MF, et al. Comparing the content of participation instruments using the International Classification of Functioning, Disability and Health. Health Qual Life Outcomes 2009;13:7.
41. Noreau L, Desrosiers J, Robichaud L, Fougeyrollas P, Rochette A, Viscogliosi C. Measuring social participation: reliability of the LIFE-H in older adults with disabilities. Disabil Rehabil 2004; 26:346–352.
42. Noreau L, Lepage C, Boissiere L, Picard R, Fougeyrollas P, Mathieu J, Desmarais G, et al. Measuring participation in children with disabilities using the assessment of life habits. Dev Med Child Neurol 2007;49:666–671.
43. Stevelink SAM, Terwee CB, Banstola N, van Brakel WH. Testing the psychometric properties of the Participation Scale in Eastern Nepal. Quality of life research. first published online 22-01-2012. Doi 10.1007/s11136-012-0116-8.
44. Van der Zee CH, Kap A, Ramabaran Mishre R, Schouten EJ, Post MW. Responsiveness of four participation measures to change during and after outpatient rehabilitation. J Rehabil Med. 2011;43: 1003–1009.
45. van Veen N, Hemo DA, Bowers RL, Pahan D, Negrini JF, Velema JP, Richardus JH. Evaluation of activity limitation and social participation, and the effects or reconstructive surgery in people with disability due to leprosy: a prospective cohort study. Disabil Rehabil 2011;33: 667–674.
46. Netherlands Leprosy Relief. Rapid Disability Appraisal Survey in Six VDCs of Morang District in Nepal: A study done by the Netherlands Leprosy Relief. 2009.
47. Sihombing B, Wilder-Smith A, Djarir H, Beise K, Kusumawardhani L, Yulihane R, Kurniasari, Muhammad Kasim HM, Kadek I, Kesumaningsih, van Brakel WH. Disability in people affected by leprosy: the role of impairment, activity, social participation, stigma and discrimination. In press.

Appendix I: The Participation Scale Short

No	Participation Scale-Short	Not specified, not answered	Yes	Sometimes	No	Irrelevant, I don't want to, don't have to	NO problem	Small	Medium	Large	SCORE
1.	Do you have equal opportunity as your peers to find work?		0			0					
	[if sometimes or no] How big a problem is it to you?						1	2	3	5	
2.	Do you work as hard as your peers do? (same hours, type of work etc)		0			0					
	[if sometimes or no] How big a problem is it to you?						1	2	3	5	
3.	Do you contribute to the household economically in a similar way to your peers?		0			0					
	[if sometimes or no] How big a problem is it to you?						1	2	3	5	
4.	Do you make visits outside your village / neighbourhood as much as your peers do? (except for treatment) e.g. bazaars, markets		0			0					
	[if sometimes or no] How big a problem is it to you?						1	2	3	5	
5.	Do you take part in major festivals and rituals as your peers do? (e.g. weddings, funerals, religious festivals)		0			0					
	[if sometimes or no] How big a problem is it to you?						1	2	3	5	
6.	Do you take part in social activities as much as your peers do? (e.g. sports, chat, meetings, religious, or community activities)		0			0					
	[if sometimes or no] How big a problem is it to you?						1	2	3	5	
7.	Do you have the same respect in the community as your peers?		0			0					
	[if sometimes or no] How big a problem is it to you?						1	2	3	5	
8.	Do you visit other people in the community as often as other people do?		0			0					
	[if sometimes or no] How big a problem is it for you?						1	2	3	5	
9.	Do you move around inside and outside the house and around the village / neighbourhood just as other people do?		0			0					
	[if sometimes or no] How big a problem is it to you?						1	2	3	5	
10.	In your village / neighbourhood, do you visit public places as often as other people do? (e.g. schools, shops, offices, market and tea/ coffee shops)		0			0					
	[if sometimes or no] How big a problem is it to you?						1	2	3	5	
11.	In your home, do you do household work?		0			0					
	[if sometimes or no] How big a problem is it to you?						1	2	3	5	

(*Continued*)

Appendix I (Continued).

No	Participation Scale-Short	Not specified, not answered	Yes	Sometimes	No	Irrelevant, I don't want to, don't have to	NO problem	Small	Medium	Large	SCORE
12.	In family discussions, does your opinion count?		0			0					
	[if sometimes or no] How big a problem is it to you?						1	2	3	5	
13.	Are you comfortable meeting new people?		0		0						
	[if sometimes or no] How big a problem is it to you?						1	2	3	5	
											TOTAL

Comment:

Name: _____

Age: _____ Gender: _____

Interviewer: _____ Date of interview: ___ / ___ / ____