Background – The Outcomes and Impact Scale – Revised (O&IS-R) was developed to measure the impact of service provision on adults with disability. The aim of this research was to explore the psychometric properties of the scale following a recent revision.

Method – Adults with disability and/ or their carers or support workers participated in the research. Participants were recruited across Australia using a range of strategies and completed the scale in relation to a service or support that they nominated. Two forms of the scale were developed (easy and standard English), which could be completed in hardcopy of via a bespoke website.

Results – The O&IS-R demonstrated good internal consistency and alternate form reliability. Factor analysis of the scale revealed one factor that clearly corresponded to the whole of life construct that the scale was designed to measure and, in general, participants with disability and staff understood the intent or purpose of the survey. All domains except the spiritual and political domain were considered to be relevant service outcomes. Some changes to wording were suggested to improve clarity.

Conclusions - The O&IS-R is a psychometrically sound scale that can be used in service and research settings to measure the impact of services and supports.

Background

According to Miller *et al*. (2008), outcomes refer to the impact or the consequences that a service or support has on users. At the individual level, outcomes data enables service users to track changes that have occurred to them over time (Batty *et al*. 2012), hence can help them determine whether they have achieved the results that they wanted. At the service level, outcomes data can provide information about whether a service is achieving its objectives, identify areas for service development, and drive funding allocation (Garralda *et al*. 2000). From a Government perspective, reporting outcomes data is a way of being accountable to the public for the quality of services that are being provided or commissioned using tax payer funds (Department of Health 2014).

Although the consistent collection of outcomes data can have wide ranging benefits, its application in practice does not appear to be widespread, particularly in community services (Young & Cheeson 2006). To date, disability service providers have focused on measuring outputs (e.g., number of service users, hours of service provided) or processes (e.g., how a service is provided), most likely because it has been mandated by government for reporting purposes. There is, however, an increasing focus on measuring outcomes both nationally and internationally. In the United Kingdom, for example, The Adult Social Care Outcomes Framework has led to the collection of outcomes data that purportedly matters to service users and their carers, and provides a mechanism by which the public can establish how well their council is performing (Department of Health 2014). The Framework also provides councils with the data and information needed to help drive up standards (Department of Health 2014). In Australia, the impetus for the increased interest in measuring outcomes has been the National Disability Insurance Scheme (NDIS). This Scheme funds supports to help people with a permanent and significant disability achieve their goals and participate in community life (Commonwealth of Australia 2016). The NDIS has a strong emphasis on outcomes to help manage cost and ensure that it remains financially sustainable, learn about the efficacy of services and generate good outcomes for people with disability, ensure the provision of cost-effective services and interventions, and drive good performance from service providers (Productivity Commission 2011).

Interest in measuring outcomes has created debate about the type of outcomes that disability service providers should capture (Dijkers *et al*. 2000; Petch *et al*. 2005). A *whole of life* (i.e., encompassing whole of life aspirations and outcomes, such as independence, participation, choice, control) and *whole of person* (i.e., encompassing a representative range of personhood domains, such as health, wellbeing, spirituality) approach has been promoted (Kober & Eggleton 2009; Wilson 2006, 2008), and one that takes into account the perspectives of the service user or consumer (Kober & Eggleton 2009; Miller *et al*. 2008; Quilliam & Wilson 2011).

Given the renewed focus on measuring outcomes, there is an ensuing need to identify ways in which disability service providers might reasonably and meaningfully measure outcomes. In order for disability service providers to embed measurement in their day-to-day practice, measures and associated processes must be practical, affordable, require minimal training, low effort and time for completion or administration and scoring, be multidimensional, and psychometrically sound (Gallagher & Teesson 2000; Hagiliassis *et al*. 2014). Quilliam and Wilson (2011) have argued that outcomes measures used by disability service providers should, as far as possible, also have the capacity to elicit information directly from people with disability, rather than rely on only proxy report. According to Hagiliassis *et al*. (2014), eliciting views directly from people with disability affirms their contribution as citizens.

Although there are a plethora of outcomes measures evident in the literature, few take a whole of life approach, or meet the criteria specified by Gallagher and Teesson (2000) so that they can be embedded in day-to-day practice and, fewer still, if any, meet the criteria suggested by Quilliam and Wilson (2011) about being accessible to people with a wide range of abilities. Further, many outcomes measures focus on only a narrow selection of outcomes or are clinical in nature relating to only specific functional skills(e.g., Knee Injury and Osteoarthritis Outcome Score, Roos *et al*. 1998; The Canadian Occupational Performance Measure, Law *et al*. 1990), utilise complex rating scales that would not be easily understood by people with intellectual disability (e.g., goal attainment scaling, Kiresuk & Sherman 1968), or are lengthy and administratively burdensome (e.g., Personal Outcome Measures, Council on Quality & Leadership 2000), particularly for disability service providers.

Some researchers (e.g., Kober & Eggleton 2006, 2009; Verdugo *et al*. 2005) have argued that quality of life (QOL) measures could be used by disability service providers to explore outcomes and performance at the individual, program, and/ or service provider level. Whilst some existing QOL measures meet a number of criteria already described (e.g., elicit the views of people with disability directly, measure from a whole-of-life perspective rather than one, narrow aspect), they are not necessarily designed to describe the impact of a specific service on an individual or group. For example, a quality of life scale will show whether or not a person is satisfied with various aspects of their life, but cannot help determine whether access to a specific service has had any impact on those aspects of life. As such, QOL scales do not have the capacity to give disability service providers information that could be used to improve services. Further, many are plagued by the same issues as some of the other less broad measures, such as being too administratively burdensome (e.g., Personal Outcome Measures, Council on Quality & Leadership 2000) and so are unlikely to be utilised as standard practice by disability service providers.

This paper reports on the psychometric properties (i.e., internal consistency, alternate form reliability, construct validity, content validity, and face validity) of a scale that was specifically designed to measure outcomes associated with disability service provision. The scale was designed to address some of the shortcomings that have been identified in other measures, such as not taking a whole of life approach, difficulties being incorporated into a service environment (e.g., training staff in use, lengthy administration, special requirements for analysis) and, not providing opportunities, as far as possible, to elicit opinions from people with disability directly.

Methods

Participants

Participants were adults with disability and carers or support workers across Australia.

Measures

The Outcomes and Impact Scale – Revised (O&IS-R; Wilson *et al*. 2014) was used in the current study to measure whole of life outcomes associated with disability service provision. The original scale, The Outcomes and Impacts Scale (Wilson & Hagiliassis 2007), was developed in a service setting for use in early childhood intervention services. The scale asks respondents to rate the degree to which a service or support has an impact on nine life domains. The domains included in the scale were identified from a comprehensive literature review about outcomes and person centred care, consideration of the policy context, understanding the type of outcomes that were likely to be of interest to disability service providers and Government, as well as exploring the experiences and aspirations reported by people accessing disability services and supports. The original scale was not subject to any psychometric evaluation.

The O&IS-R differs from the original scale in that wording was revised to apply to adults, the domain definitions were updated, and an easy English form developed (in addition to the standard English form). Easy English is a writing style that has been developed to provide people with low literacy with concise and understandable information (Communication and Inclusion Resource Centre 2015). Easy English focusses on using simplified language, grammar, font, layout and design, minimal punctuation, and images to illustrate headings and key messages (Communication and Inclusion Resource Centre 2015). Although easy English is often used interchangeably with plain English, there are differences that relate to language and punctuation that is considered acceptable, and the use of images.

In the revised scale, respondents are instructed to select a service or support from a pre-determined list (accommodation, equipment services, therapy, counselling, case management, day program, employment, education, respite, community inclusion, and "other" services) and rate the degree to which that service or support has had an impact on nine life domains (personal wellbeing, social life, political life, cultural life, recreational and leisure life, economic life, educational life, spiritual/ religious life, and your environment) using a 5-point likert scale ranging from "*A Very Negative Change*" to "*A Very Positive Change*" on the easy English form, and from "*Very Negative Impact*" to "*Very Positive Impact*" on the standard English form. A 5-point likert scale was used to ensure that the scale would provide sufficient data that service providers could use to inform service development. According to Hodge and Gillespie (2003), a higher number of response alternatives in a scale increases the amount of information collected and the reliability of a scale. For adolescents and adults with intellectual disability, Harvey and MacLean (2006) demonstrated that as many as five response alternatives can be utilised in a scale without any decreases in response rates. A demographic section was also added to the scale and a question about ease of use. For ease of use, a 10-point rating scale ranging from "*Hard to Use*" to "*Easy to Use*" was used.

To explore content validity, a separate survey was developed asking participants (disability staff) to rate the relevance of each life domain as an outcome of service provision using a 4-point likert scale ranging from "*Very Relevant*" to "*Not Relevant*" (Lynn 1986; Polit *et al*. 2007; Polit & Beck 2006; Zamanzadeh *et al*. 2015). This question taps into the degree to which participants believe that disability services are likely to have an impact on each life domain. Two open-ended questions were also included about the extent to which the nine life areas reflected the full range of a person's life that services/ supports may have an impact on, and if anything was missing from the scale.

Another survey was developed to explore face validity from the perspective of adults with disability and/or their carers. This survey comprised a series of questions including an open-ended one asking about what the scale appeared to measure, and five close-ended questions about its usability (e.g., "*I understand what the survey is asking me to do*", "*The questions are easy to understand*", "*The layout/ formatting is easy to read and follow*") rated on a 4-point likert scale ranging from "*Strongly Disagree*" to "*Strongly Agree*".

Procedure

Ethics approval was obtained from the {insert identifying name} Human Research Ethics Committee. Potential participants were invited to complete the surveys anonymously and consent was implied by the completion and return/ submission of the survey/s.

The O&IS-R could be completed in one of two ways: 1) hardcopy (and returned to the researchers via mail), or 2) online. For the online completion, a bespoke website was developed that met web accessibility criteria and, as far as possible, was responsive to assistive technologies that might be used by adults with disability. The website was tested by adults with disability for accessibility, responsiveness to assistive technologies, and usability, and minor changes were made before data collection began.

Participants from across Australia were recruited into the research. Disability and mainstream services that adults with disability may have accessed were contacted by email and phone, and invited to promote the research to adults with disability and/ or carers and support workers. Promotional posters, flyers and other collateral were provided to service providers to distribute to adults with disability and/ or carers and support workers. Where possible, service providers were also visited by one of the researchers who explained the research. Social media (Facebook, Twitter, and LinkedIn) was also used to promote the research widely.

The O&IS-R could be completed by the adult with disability independently, with assistance, or via a proxy. Participants were able to choose whether they completed the standard or easy English form of the scale. The easy English form was translated from the standard English form by speech pathologists with expertise in easy English. It was piloted with people with intellectual disability before being finalised.

Those participants who chose to complete the scale online and chose the standard English form were also provided with the easy English form. The easy English form was presented after the standard English form had been completed, and participants were instructed to complete the latter in relation to the same service/ support. This process enabled the exploration of alternate form reliability. The website was developed in a way that prevented the participant from backtracking and checking responses. Participants who chose to complete the scale online and selected the easy English form completed only that form of the scale. Participants who completed the scale in hardcopy received only the form they requested along with a self-addressed envelope for return. In all cases, the scale was completed in relation to a service or support nominated by the participant.

Disability staff, as lay experts (Rubio *et al* 2003), from two large disability service providers were invited to participate in the content validity component of the research. The survey for this component could be completed online via Survey Monkey or in hardcopy. Explanatory statements were distributed to staff by managers on behalf of the researchers. Participation was voluntary and anonymous, and return of completed surveys implied consent. Given time and resource constraints, content validity was explored for the standard English form only.

Adults with disability and/ or carers or support workers from these two disability service providers were invited to participate in the face validity component of the study. Managers and coordinators of the services distributed explanatory statements to potential participants on behalf of the researchers. The survey could be completed online via Survey Monkey or in hardcopy. Participation was voluntary and anonymous, and return of completed surveys implied consent. Given time and resource constraints, face validity was explored for the standard English form only.

Data Analyses

Analyses were conducted separately for the two forms using SPSS Version 23.0 (IBM Corp, 2016).The range of scores for each item was explored using descriptive statistics (i.e., frequencies and percentages). Cronbach’s alpha was used for internal consistency where a value of .7 and above is considered acceptable (Nunnally 1978). Alternate form reliability was tested using Pearson’s Product Moment Correlations and construct validity was explored using principle components analyses (PCA). For PCA, a sample size of at least 300 is considered sufficient (Tabachnick & Fidell 1996). Content validity was explored using item relevance and calculating an item content validity index (I-CVI) for each item. The I-CVI is the proportion of participants who rate the scale’s content as valid (i.e., select a rating of either “*Very Relevant*” or “*Relevant*” (Lynn 1986; Polit *et al*. 2007; Polit & Beck 2006; Zamanzadeh *et al*. 2015). An I-CVI of at least 0.78 is considered good and indicates that the item has been judged as relevant to the scale (Polit *et al*. 2007). Responses to the open-ended questions were analysed thematically. Frequencies and percentages were used to analyse quantitative data obtained from the face validity component of the research, and qualitative data were analysed thematically.

Results

Reliability

For each analyses, the frequencies and percentages showed that there were a broad range of scores indicating no floor or ceiling effects.

Internal consistency

For the easy English form, data about 450 adults with disability (190 males, 250 females, five ‘Other’, five undisclosed) with an average age of 41.8 years (range is 18 to 94 years) were included for analysis. The most frequently reported disability was intellectual (26.2%) followed by physical (22.0%) and neurological (7.3%). Almost half of the respondents were adults with disability completing the scale independently (45.3%), and about one-quarter (26.7%) were proxies or people with disability completing it with assistance (25.3%). Participants responded to the survey in relation to a broad range of services, including day programs (19.8%), employment (12.7%), accommodation (9.8%), equipment services (6.9%), therapy (6.9%), counselling (6.4%), community inclusion (6.4%), case management (5.8%), “other” services (8.9%), unspecified services (8.4%), respite (4.4%), and education (3.6%). The “other” services included domestic/ home help (2.0%), personal care (1.6%), pension or other government benefit (1.6%), guide dog training (0.7%), support groups (0.4%), and other activities that could not classified more broadly (2.7%). Analyses revealed that the easy English form had good internal consistency with an alpha value of .91.

For the standard English form, data about 303 adults with disability (117 males, 179 females, five ‘Other’, two undisclosed) with an average age of 43.3 years (range is 18 to 94 years) were included for analyses. Most participants had a physical disability (25.1%) followed by intellectual (16.5%) or neurological (10.6%). The majority of respondents were people with disability completing the scale independently (49.8%), followed by proxies (39.6%), and people with disability completing it with some assistance (8.9%). Participants responded to the survey in relation to a broad range of services, including “other” services (19.1%), day programs (12.2%), accommodation (10.9%), equipment services (10.2%), employment (9.6%), counselling (8.9%), therapy (8.6%), case management (8.3%), community inclusion (5.6%), respite (5.3%), education (4.6%), and 3.0% did not specify the service. The “other” services included personal care (2.3%), domestic/ home help (3.6%), pension or other government benefit (2.0%), guide dog training (1.0%), support groups (0.67%), and other services that could not classified more broadly (3.3%). As with the easy English form, analyses revealed that the standard English form had good internal consistency with an alpha value of .89.

Alternate form reliability

Table 1 displays correlations between equivalent questions on the alternate forms of the scale. This table shows that there are large correlations between equivalent domains suggesting a strong relationship between the two forms of the scale.

[Table 1 About Here]

Validity

Construct validity

The samples for construct validity were the same as those for internal consistency. For the easy English form (N = 450), all of the correlations between domains were greater than .30 (refer to Table 2) indicating the data were suitable for factor analysis (Pallant 2005). For the standard Easy form (N = 303), the majority of correlations were greater than 0.30 (refer to Table 3). The Kaiser-Meyer-Oklin statistic obtained was .91 and .90 for the easy and standard English form, respectively, exceeding the minimum value of .60 recommended by Tabachnick and Fidell (1996). The Bartlett's Test of Sphericity reached statistical significance for both forms, thereby supporting the factorability of the correlation matrix (Pallant 2005).

[Table 2 About Here]

[Table 3 About Here]

PCA of the easy English form data revealed the presence of one factor with an eigenvalue exceeding 1 explaining 56.9% of the variance. PCA of the standard English form data similarly revealed the presence of one factor with an eigenvalue exceeding 1 explaining 53.5% of the variance. Table 4 shows that factor loadings for each domain where a loading of above .40 is considered relevant. Inspection of the scree plots revealed a clear break after the first component confirming the one-factor structure for both forms suggesting the scales measure a single, underlying dimension.

[Table 4 About Here]

Content validity

Forty-three staff responded to the questions for the calculation of I-CVI. Participants were support workers (n = 9), therapists (n = 10), service coordinators/ managers (n = 9), and team leaders (n = 7). Five participants did not disclose their role and three identified an "other" role. Participants had worked in the disability sector an average of 12.7 years (range from less than one year to 35 years). The I-CVI for each item for the standard English form is presented in Table 5 and shows that participants judged the majority of items as relevant with the exception of the political and spiritual/ religious domains, which did not meet the cut-off of .78 for good content validity.

[Table 5 About Here]

Thirty-two staff responded to the question about the extent to which the nine life areas reflected the full range of a person's life that services may influence. The majority (n = 25; 78.1%) of participants reported that the domains reflected the full range of a person's life that could be affected by services. Other comments made by participants were that the scale was not applicable to children (n = 2; 6.3%), needed greater emphasis on home activities and self-care activities (n = 2; 6.3%) and family life (n = 1; 3.1%), queried the definition of the political domain (n = 1; 3.1%), and whether fulfilment should be included (n = 1; 3.1%). Responses regarding what was missing from the scale are shown in Table 6, which shows that wording changes were suggested and home/ family life was thought to be missing. Other domains that were reported as missing were sexuality, community life, and functional skills.

[Table 6 About Here]

Face validity and usability

Thirty eight participants (20 males, 18 females) responded to the question about the purpose of the standard English form (n = 8 people with disability independently, n = 23 people with disability with assistance, n = 5 proxies, n = 2 undisclosed). Participants age ranged from 18 to 69 years (*M* = 33.2 years) and 39.4% (n = 15) reported that their primary disability was cerebral palsy, 10.5% (n = 4) autism or Asperger's, 10.5% (n = 4) intellectual disability, and 5.3% (n = 2) Down Syndrome. For a further 12 participants (31.6%), primary disability could not be classified more broadly and included a range of disabilities (e.g., vision impairment, amputee, Fragile X), and one (2.6%) other participant did not disclose their primary disability. An equal proportion of participants stated that the scale measured services and their impact on life (n = 8; 21.1%), the things they did in life (n = 8; 21.1%), that they did know what it measured (n = 8; 21.1%), and 13.2% (n = 5) believed that the scale measured happiness or contentment. A further 23.7% (n = 9) of responses were difficult to decipher.

With regards to usability, Table 7 shows that the majority of the 42 participants (22 males, 19 females, one did not specify gender; M_{age} = 34.8 years, age range 18-70 years) who responded to the questions strongly agreed or agreed that they understood what the standard English form asked them to do, that the questions were clear and easy to understand, the nine life areas adequately reflected all aspects of life, and that the layout/ formatting was easy to read and follow. Table 7 also shows that there were mixed views about whether other people with disability would be able to answer the questions.

[Table 7 About Here]

Ease of Use

The samples for *ease of use* were the same as for internal consistency, alternate-form reliability, and construct validity. The mean average score for ease of use was 8.3 and 8.6 for the easy and standard English forms, respectively, from a maximum score of 10.

Discussion

Both forms of the O&IS-R had adequate internal consistency and alternate form reliability, and the factor structure was consistent with whole of life construct that it was designed to tap into. Overall, the two forms of the scale have sound psychometric properties. Given these findings and that the scale addresses many of the limitations evident in other outcomes measures (e.g., can be used by people with a range of abilities, easy to use, quick to administer and interpret, whole of life approach), this is a scale that could be easily incorporated into the day-to-day practice of disability service and enable them to collect outcomes data that could be used to design, improve and develop services.

Findings with respect to the inclusion of spiritual/ religious and political domains were mixed. On the one hand, the factor analysis revealed that both the spiritual/ religious and political domains emerged along the same construct as the other items, and hence should be retained as components of the overarching ‘whole of life’ dimension. On the other hand, these two domains did not meet the criterion cut-off for relevance to disability service provision. There are a number of possible reasons for these contrasting findings. It may be participants did not consider the full range of benefits, intended or unintended, that could arise from service provision. In other words, if a disability service did not specifically target spirituality/ religion (few would), then participants may not have considered that changes in this life domain were likely to arise. Another possibility is that, because most of the examples provided on both forms of the scale related to religion, participants may have confused spirituality with religion. Although levels of religious involvement are still substantial in Australia, Australia is becoming increasingly secular (Australian Bureau of Statistics 2012), and fewer people report being affiliated with a particular religion (Australian Bureau of Statistics 2004). If participants associated spirituality with religion and religion was not important to those people, they are unlikely to consider it to be an outcome that is relevant to disability services. The results, however, of the factor analyses and internal consistency, which provides higher level evidence, indicated that the spiritual/ religious item should be maintained and conversely, there is no justification for its removal. It may be beneficial, however, to revise some of the examples provided for this particular domain to ensure that it more accurately encompasses spirituality (e.g., connectedness, values, practices, Mason *et al*. 2007; Peach 2003), as well as religion and religious activities.

Much has been made about the importance of political life for people with disability. Researchers have argued that political participation is important in life because it is a catalyst for self-determination (Pacheco & Lange 2010) and that the option to participate in political activities may be more important than actual participation, or the outcome of participation (Frey & Stutzer 2000 2005). These arguments are, however, purely theoretical with limited empirical evidence (Pacheco & Lange 2010). Based on the current research exploring the content validity of the standard English form, there were conflicting results about its relevance as an outcome of disability services. In the standard English form, political life is defined as having a say about things that are important to you, being involved in decisions about your service, community or nation/ country. As with spiritual/ religious life, services are not necessarily designed to have an impact on political life, and people who do not reflect on services holistically may not consider that unanticipated benefits could occur in areas of life that are not specifically targeted by the service. Despite this, the retention of political life on the scale is similarly justified as evidenced by the results of factor analysis and internal consistency.

Both forms of the scale are shown to be psychometrically sound but the standard English form may benefit from refining some of the wording, particularly relating to the range of examples that are provided for each domain and specifying the target group in the scale instructions. In relation to the domain wording, some changes could be made to the examples provided to better describe the range of activities that each domain encapsulates. In the current study, the target group (i.e., adults) was specified in the explanatory statements, however, should be included on the scale to prevent confusion.

Most participants with disability (or their proxies) understood the purpose of the standard-English form of the scale. There were, however, a small proportion of participants who raised some concerns, but these are likely to be addressed by fine-tuning some of the wording. Overall there were mixed views by participants with disability (or their proxies) about whether other people with disability would be able to complete the scale. It should be noted that these questions related to the standard English form only and that participants were unlikely to know that an easy English form was available for others who might find the standard English form too complex. On a whole, participants reported that both forms of the scale were easy to use.

Combined, the results of the research demonstrate that the two forms of the scale are psychometrically sound and can be used to measure outcomes associated with disability service provision. Notwithstanding the important findings, a limitation of the research is that the sample was not random and may have been biased. The sample size was, however, sufficient and a range of disability types were represented, as well as ages. The gender ratio was biased towards females, which was surprising since more males than females have an intellectual disability (Boyle *et al*. 2011), but it may be that it reflected the gender distribution of physical disability, which was the second most common disability reported by participants, and is more prevalent in females than males (Murtagh & Hubert 2004). Content validity and face validity was restricted to only the standard English form and based on relatively small sample sizes, which was another limitation of the current research. Future research should focus on replicating the content validity component of the research on a larger scale, with both forms of the scale, and extend it to include people with disability and their carers. There is also need for reliability studies, particularly inter-rater and intra-rater to explore agreement between different raters (for example, agreement between two support workers or carers, or a carer and a support worker) and consistency of scores over time, respectively. Sensitivity to change in scores over time would also be an area for future research to focus on.

Table 1

Correlations between domains from alternate forms of the scale

	Standard English								
	Personal wellbeing (N = 245)	Social (N = 239)	Political (N = 236)	Cultural (N = 233)	Recreational & leisure (N = 237)	Economic (N = 234)	Educational (N = 232)	Spiritual (N = 233)	Your environment (N = 234)
Easy English	.77**	.74**	.69**	.80**	.83**	.73**	.76**	.81**	.75**

**p<0.01

Table 2

Correlations between domains on the easy English form

Domain	Personal wellbeing	Social	Political	Cultural	Recreational & leisure	Economic	Educational	Spiritual	Your environment
Personal wellbeing	-	.71**	.62**	.49**	.54**	.47**	.51**	.34**	.51**
Social life		-	.63**	.62**	.66**	.50**	.55**	.40**	.55**
Political life			-	.57**	.53**	.50**	.55**	.39**	.47**
Cultural life				-	.65**	.42**	.49**	.52**	.51**
Recreational & leisure life					-	.44**	.53**	.41**	.62**
Economic life						-	.60**	.38**	.42**
Educational							-	.44**	.51**
Spiritual								-	.37**

**p<0.01

Table 3
Correlations between domains on the standard English form

Domain	Personal wellbeing	Social	Political	Cultural	Recreational & leisure	Economic	Educational	Spiritual	Your environment
Personal wellbeing	-	.66**	.50**	.48**	.55**	.39**	.50**	.31**	.57**
Social		-	.62**	.62**	.66**	.42**	.59**	.31**	.58**
Political			-	.55**	.50**	.38**	.51**	.34**	.45**
Cultural				-	.64**	.25**	.46**	.41**	.50**
Recreational & leisure					-	.34**	.48**	.36**	.68**
Economic						-	.47**	.29**	.40**
Educational							-	.29**	.51**
Spiritual								-	.28**

**p<0.01

Table 4

Domain factor loadings

Domains	easy English	standard English
Personal wellbeing	.77	.78
Social	.84	.85
Political	.78	.74
Cultural	.78	.76
Recreational & leisure	.80	.81
Economic	.69	.58
Educational	.76	.74
Spiritual	.61	.51
Your environment	.73	.77

Table 5

Evaluation of the content validity of the standard English form

Domains	Number of participants who gave a rating of 3 or 4	I-CVI
Personal wellbeing	43	1
Social	41	0.95
Political	25	0.58
Cultural	34	0.79
Recreational & leisure	39	0.91
Economic	35	0.81
Educational	37	0.86
Spiritual	26	0.60
Your environment	40	0.93

Table 6

Staff responses to "What is missing from the scale?"

	Number (%)
Domain definitions and examples should be refined	5 (23.8)
Home/ family life	5 (23.8)
Sexuality/ sex education	2 (9.5)
Community life	1 (4.8)
Self care/ functional skills	1 (4.8)
Weekend activities	1 (4.8)
School age questions	1 (4.8)
Design issues (e.g., font size, layout)	1 (4.8)
People with disability should identify missing elements	2 (4.8)

Note. It was difficult to interpret the responses of two (9.5%) participants.

Table 7

The degree to which participants agreed with statements regarding the content of the scale

Question	Strongly Disagree	Disagree	Agree	Strongly Agree
I understand what the survey is asking me to do	3 (7.1)	3 (7.1)	22 (52.4)	14 (33.3)
The questions are clear and easy to understand	3 (7.1)	7 (16.7)	20 (47.6)	12 (28.6)
The nine life areas adequately reflect all aspects of my life	2 (4.8)	7 (16.7)	23 (54.8)	8 (19.0)
Other people with disabilities will be able to answer these questions	3 (7.1)	17 (40.5)	15 (35.7)	5 (11.9)
The layout/ formatting of the survey is	7 (16.7)	6 (11.3)	22 (52.4)	7 (16.7)

easy to read and follow

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The Outcomes and Impact Scale – Revised: The psychometric properties of a scale assessing the impact of service provision

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