Measuring Stress in the Mildly Intellectually Handicapped: The Factorial Structure of the Subjective Stress Scale

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Abstract

The Subjective Stress Scale (SSS) was developed by Bramston and Bostock (1994) to provide a sensitive measure of stress for people with intellectual disabilities. The present study examined the underlying structure of the SSS by analysing responses of 221 intellectually disabled people to the questionnaire. Exploratory factor analysis of the inter-item correlation matrix yielded at least three solutions which were quite interpretable: a one-factor, a two-factor, and a four-factor solution. Factors in all three solutions bore a strong resemblance to stress dimensions reported for the general population using other stress measures. The results suggest that although the actual stressors vary, persons with mild intellectual disability are affected by the same major stress dimensions as the general population. The results also suggest that the SSS can be used as a much needed measure of subjective stress levels in people with mild intellectual disabilities.

Measuring Stress in the Mildly Intellectually Handicapped: The Factorial Structure of the Subjective Stress Scale

One of the most noteworthy developments in the assessment of stress is the recent trend to focus on self-appraisal of its impact rather than on an objective evaluation of its frequency (Hewitt, Flett, & Mosher, 1992). A focus on subjective appraisal takes into account that a stressful event can often affect people differently and what is important is each person's perception of the event and ability to cope with it. This conceptualization of stress is quite consistent with that of Lazarus and associates (Lazarus & Folkman, 1984) who regard stressors as events appraised by individuals as threats to their well-being. Such events are not considered stressful in their own right unless the individual defines them as such. The recognition of this subjective element in the stress response has been accompanied by a realisation that these subjective responses are themselves influenced by broad stress dimensions. Many recently published measures of daily stressors apply the subjective approach in an attempt to identify and tap these underlying dimensions.

Kanner, Coyne, Schaefer, & Lazarus (1981) developed the Daily Hassles Scale to detect everyday sources of stress particular to individuals, and this was revised to emerge as the Hassles and Uplifts Scale (DeLongis, Folkman, & Lazarus,1988). A factor analysis of the original scale revealed eight factors that included: future security, time pressure, work, household, health, inner concern, financial responsibility and environment (Lazarus, DeLongis, Folkman, & Gruen, 1985). Second-order analysis of these eight factors (Dohrenwend & Shrout, 1985) found evidence for a single factor involving a general level of upset that is strongly associated with the original eight factors.

The Daily Stress Inventory (DSI) (Brantley & Jones, 1989) is a 58 item scale of daily hassles. Respondents are able to calculate daily fluctuations in both the frequency and impact of minor stressors in their lives. The psychometric properties of the DSI are acceptable and well documented (Brantley, Cocke, Jones, & Goreczny, 1988). The structure of the DSI was developed by seven expert judges who sorted the items into meaningful groups. Six categories emerged: interpersonal problems, personal competency, cognitive stressors, environmental hassles, health concerns and varied stressors.

The Perceived Stress Scale (PSS) focusses on more global life stressors (Cohen, Kamarch, & Mermelstein, 1983). The PSS provides appraisals of stress by asking respondents to report whether their lives seem to be unpredictable, uncontrollable, and overloaded. Because the scale focuses on global appraisals of stress, Cohen et al. (1983) argued that it is more sensitive to stress from chronic conditions and situations often not listed on other life events scales. Factor analysis of the PSS data from 96 psychiatric subjects yielded two factors (Hewitt et al., 1992). The authors interpreted the first factor as a general distress factor which included items that tapped lack of control, and items involving negative affective reactions such as anger, upset, and nervousness. The second factor involved the perception of an ability to cope. This suggests that the PSS measures not only the presence of negative responses to stressors, but also a perception of the degree of coping ability in relation to existing stressors. Thus, perceiving oneself as distressed may involve both a negative affective experience and a negative perception of one's ability to deal effectively with events or changes (Hewitt et al., 1992).

It is apparent that the adoption of a subjective approach to the measurement of stress has not helped to resolve the debate over the nature of the construct itself. Although there are quite marked similarities in some of the dimensions themselves, the three popular measures of stress cited above assume a different number of underlying dimensions. It is not difficult to see why this confusion has arisen: the very notion of subjectivity suggests that whatever dimensions are identified are likely to have "fuzzy edges" because of large individual variations in responses to standard test items. There is no guarantee that a particular item will elicit a stress response; perhaps because it refers to a stressor outside the experience of the individual, perhaps because it is just not perceived as stressful at the time. These problems are highlighted when stress is considered in the context of special subgroups of the general population. The notion of subjectivity applies here too, but this time at two levels. There is the level of the individual, which is what we have been discussing. There is also the group level, where the principal question becomes: are there unique features of the subgroup which may alter the nature of the stress response? The present study looked at this question in relation to individuals with intellectual disability.

Stress as experienced by people with intellectual disabilities has only recently begun to attract attention from sections of the research community (e.g., Schalock & Kiernan, 1990; Zetlin, 1993). Foremost among the issues that have been explored is the question of whether or not people with intellectual disabilities experience stress. Despite suggestions to the contrary, recent research suggests that most people with intellectual disability experience the full range of affective disorders (Benavidez & Matson, 1993; Benson & Ivins, 1992; Matson, 1983). A related research issue concerns the measurement difficulties associated with assessing stress in people with intellectual disabilities, a group that often has difficulty understanding traditional paper and pencil self-report instruments, such as those discussed above. Poor reading ability, expressive and receptive language deficits, memory, acquiescence, 'nay' saying and compliance with unreasonable requests are just a few of these reported difficulties (Damon & Hart, 1982; Rosen, Clark and Kivitz, 1977; Sigelman, Budd, Spanhel, & Schoenrock, 1981).

A relatively new stress scale for people with intellectual disabilities that has come to terms with many of these challenges is the Subjective Stress Scale (SSS). This measure was designed to assess the perceived stress levels of people with intellectual disabilities, and it incorporates daily events and issues that typically stress them at varying times in their lives (Bramston & Bostock, 1994). Original items for this scale were derived from 89 people with mild intellectual disabilities who took part in one of 22 brainstorming groups set up across two Australian states. Participants discussed what aspects of their day-to-day lives upset, bothered, worried, and stressed them. Twenty four people who worked closely with people with intellectual disabilities completed similar brainstorming exercises and their responses were added to the pool of ideas. After duplications were removed, 60 stressors remained that were then worded into interview questions. The scale was then tested widely among people with mild intellectual disabilities and reviewed for content and clarity of item wording by a panel of 6 people consisting of academics(2), teachers in the disabilities field(2), and parents of adults with intellectual disabilities(2). Based on their responses and the trials, the items were revised and the scale reduced to 31 items. This test development process is described in detail elsewhere (Bramston & Bostock, 1994).

The availability of a stress measure suitable for use with people with intellectual handicapps has opened the way for further investigation of questions relating to the generality of the concept of stress. In particular, it is important to establish whether a scale that has been developed for this population captures the same stress dimensions as those identified in the general population. The twin aims of the present study were to examine the factorial structure of the SSS in a heterogeneous sample of people with mild intellectual disabilities, and to note any correspondence between the factors obtained and those reported in the general stress literature.

Method

Subjects

A total of 221 people with mild intellectual disabilities completed a shortened form of the Subjective Stress Scale. The sample consisted of 141 men and 80 women, most of whom were between 20 and 30 years of age. The majority of subjects lived with their parents (56%) and the remainder in residentials either with live-in staff or drop-in supervision. Most of the subjects worked in sheltered workshops (68%), with 16% still at school and the remainder at therapy centres. Subjects were selected on three criteria: functioning in the mild range of intellectual disability (based on agency assessment files), exhibiting adequate conversational skills (based on staff reports), and volunteering to participate in the project after it was explained to them. Volunteers meeting these criteria in each of the 21 establishments visited were included in the study.

Materials

Subjects completed the Subjective Stress Scale (SSS) shown in Appendix 1 (Bramston and Bostock, 1994). Early research on this scale indicates that it is both reliable and valid for use with an intellectually disabled population. Based on a sample of 66 people with intellectual disabilities, Bramston and Bostock reported a Cronbach alpha coefficient of 0.88 and a test-retest reliability over 2 weeks of .718 ($p<.001$). In addition, the Impact scores on the SSS were found to correlate .54 ($p<.001$) with scores on the Daily Stress Inventory when administered to 47 university students. Although the scale was not designed for use with students, the data provide tentative support for the concurrent validity of the SSS.

Procedure

The SSS is a self-report scale administered by interview. Subjects were asked to acknowledge if any of the stressful events listed in the scale had occurred in the last fortnight (e.g., "Have you argued with anyone recently?"). To counter any tendency towards acquiescence, the stressful option was “yes” for half the items and “no” for the remainder. If the stressful option was indicated by the response, the subject was asked to rate how stressful the event currently was by pointing to a spot on a 4-point Likert scale. The rating scale clearly set out the numbers “1-4”, written descriptors from “not stressful” to “a great deal of stress”, and graphic representations of each point using buckets with varying amounts of water in them.

The SSS interviews were conducted by one of two interviewers, both aged in their late 30's, one male and one female. Both were experienced clinicians and familiar with the scale. Each interviewer saw approximately half the subjects in each of the centres. Allocation of subjects to interviewer was by chance and none of the subjects were previously known to either of the interviewers. [In an earlier study

involving 10 people with intellectual disabilities who were interviewed twice on the same day, the SSS was found to have an inter-rater reliability of .87 ($p<.01$) between the same two raters used in the present study.] Subjects were helped to feel at ease and then asked if they would simply say whether certain events or issues had occurred in their life within the last two weeks. The interviewers were required to verify subject responses with the prompt "Tell me more about that", so that unreliable responses could be detected and scored accordingly. The interviews generally took about 15 minutes each.

Results

Before commencing analysis of the structure of the SSS, frequency analyses were run on all 31 items in the scale. The possible response categories were: '0', indicating that the subject had not experienced this stressor; '1', indicating that this source of stress had been encountered but had not given rise to any feelings of stress; '2', to indicate some stress; '3', a moderate amount; and '4' a great deal of stress. The frequency data provided some indication of the success of each item in capturing sources of stress for this population over a 2-week period. Data reflecting the selection patterns for the 31 items are reported in Table 1.

Table 1

Percentages for Various Response Categories for All Items (N=221)

Item	Response Categories					
	Not Experienced	No Stress	Some Stess	Moderate Stress	A Great Deal of Stress	No Response (missing)
Choice	77	8	7	3	3	2
Privacy	67	11	9	6	7	0
Argue	27	15	25	10	22	0
Treatdf	69	11	7	3	5	5
Rights	74	6	4	3	1	0
Death	47	12	18	7	16	0
Partner	51	15	11	7	6	0
Family	69	8	9	6	8	0
Listen	56	10	16	10	8	1
Quick	50	13	18	10	8	1
Instrct	75	9	10	3	3	2
Unstyou	74	12	10	2	2	0
Bully	53	7	12	7	20	0
Interpt	40	13	17	14	16	0
Tease	44	10	11	11	23	0
Worksup	81	8	5	4	3	0
Coerce	62	8	12	7	7	4
Fights	55	11	7	11	16	0
Restrict	55	7	14	5	7	12
Expect	79	9	8	3	1	1
Help	82	9	5	3	1	1
Crowds	45	26	16	6	5	0
Helpless	52	11	10	6	3	18
Informed	76	9	8	3	1	3
Find Job	78	11	5	3	2	0
Change	67	14	10	6	3	0
Home	74	8	8	4	6	0
Intrub	54	12	18	4	6	6
Friends	74	11	10	3	1	0
Cantdo	52	11	12	4	7	14
Likeyou	87	7	2	0	3	0

Note: Figures are percentages.

These data reveal some interesting facts about stressors in this population. The large number of '0' responses indicates that, despite a heavy culling of items in earlier validation work with this test, many of the stressors listed in the scale were not encountered. The trend was for the majority of subjects to state that an item was not relevant to them. A smaller number of subjects said that it applied to them but did not create stress, and relatively small numbers ticking the remaining categories. There were some exceptions to this rule, where infrequently encountered stressors did, in fact, create considerable stress for those unfortunate enough to experience them. The variable described as 'bully' was a good example. At the other end of the scale, some items were reported as stressors for the majority of subjects and showed a reasonably flat profile in Table 1. 'Argue' is a good example, with over 57% of respondents indicating that it was a source of stress.

The pattern of responses shown in Table 1, with marked positive skewness for those stressors that were not experienced by a large number of respondents, created potential problems for subsequent analyses. These variables could be regarded as censored. A censored variable has a high concentration of cases at the upper or lower end of the distribution. In this instance, the concentration was at the lower end and the variables could be described as censored below. PRELIS (Joreskog & Sorbom, 1988), a statistical package for multivariate data screening and data summarisation, handles this type of variable by converting values to weighted normal scores (refer PRELIS User's Guide, p.B-3, for a description of the formulae). This package was used to create a parallel data set so that, in the preliminary stages of analysis, two data sets were analysed: the first was the original data set in which all variables were treated as continuous; the second was this same data set with all variables declared as censored and transformed to a type of normal score using the PRELIS option. The results from both analyses were very similar, although there was a tendency for interitem correlations (hence communalities) to be slightly higher for the censored data. Factor analyses based on the two sets yielded very similar factor patterns and, for this reason, all reported results are based on the original (untransformed) data set.

The items used to form the SSS were selected on an individual basis. They had all been identified as potential stressors by people with mild intellectual disabilities, or by people who worked with this group. An important task in the present study was to determine whether these items formed recognisable groups representing underlying dimensions of stress for this population. As a first step in this process, a correlation matrix was constructed from the 31 variables. It was apparent from the predominance of positive correlations in the matrix that most of the items shared some variance. Such evidence of positive manifold is often interpreted as support for the existence of a general factor; in this case, a general stress factor. It was also apparent that none of the correlations were particularly high, with a maximum value of .43. There were no other noteworthy features among the correlations. In order to examine the underlying structure of this matrix, exploratory factor analytic routines from the SPSS package were used. Factor analysis was used rather than principal components analysis because the main aim was to identify underlying dimensions that explained the shared variance in the matrix. Oblique, rather than orthogonal, solutions were employed because of suggestions in the stress literature that a general stress factor is the major contributor to stress responses. Finally, the choice of extraction method was made somewhat arbitrarily: both maximum likelihood and principal axis factoring techniques, the two most common

extraction techniques, yielded virtually identical solutions. The latter will be reported here.

In the initial run, a principal axis factor (PAF) solution employing the root one criterion yielded a set of 10 components accounting for 59% of the variance. The first eigenvalue in the principal component solution accounted for 19.4% of the variance, the second accounted for a further 6.6%, the third an extra 5.2%, with the remaining eigenvalues in the root one solution accounting for between 4.8% and 3.3%. Following oblique (oblimin) rotation of axes with squared multiple correlations entered as initial estimates of communalities, this 10 factor solution resulted in less than 5% of the off-diagonal entries in the residual correlation matrix taking values above .05. In this sense, it represented a reasonable fit to the data. With just 31 items in the abbreviated form of the SSS, however, a 10 factor solution did not represent a substantial data reduction. Furthermore, the sharp drop in the eigenvalues after the extraction of the first principal component suggested that it would be worthwhile examining a one-factor solution, especially since there have been suggestions in the literature that stress is unidimensional. A less obvious but distinct discontinuity in the scree plot after the second eigenvalue, combined with reports in the literature that there are two stress dimensions, pointed to the need to examine a two factor solution as well. Principal axis factor pattern matrices for one and two factor solutions are reported in Table 2. The two factor solution again employed oblique (oblimin) rotation.

Table 2
Factor Loadings for One and Two Factor Solutions

Item (Q)	One Factor Solution		Two Factor Solution		
	Factor I	h^2	Factor I	Factor II	h^2
	eigen = 5.2		eigen = 5.3	eigen = 1.3	
Rights (Q5)	.37	.13	.52	-.12	.20
Partner (Q7)	.35	.13	.31	.09	.11
Instrct (Q11)	.45	.20	.37	.14	.33
Expect (Q20)	.44	.19	.48	.01	.36
Help (Q21)	.63	.40	.77	-.05	.56
Worksup (Q16)	.39	.15	.43	.00	.20
Helpless (Q23)	.38	.15	.33	.10	.15
Informed (Q24)	.41	.17	.54	-.08	.25
Find Job (Q25)	.41	.16	.65	-.21	.26
Likeyou (Q31)	.46	.21	.46	.06	.27
Friends (Q29)	.41	.17	.34	.13	.21
Choice (Q1)	.43	.18	.30	.20	.21
Privacy (Q2)	.45	.20	.30	.22	.18
Argue (Q3)	.41	.17	-.01	.52	.22
Treatdf (Q4)	.52	.30	.28	.33	.33
Listen (Q9)	.43	.19	.21	.30	.17
Bully (Q13)	.40	.16	.07	.42	.30
Interupt (Q14)	.23	.05	-.11	.40	.10
Tease (Q15)	.33	.11	-.15	.58	.33
Coerce (Q17)	.50	.25	.08	.54	.27
Fights (Q18)	.47	.22	-.06	.67	.37
Home (Q27)	.50	.25	.23	.36	.25
Intrub (Q28)	.46	.21	.21	.33	.24
Restrict (Q19)	.46	.22	.25	.30	.16
Crowds (Q22)	.27	.07	.07	.26	.11
Change (Q26)	.21	.04	.22	.02	.09
Cantdo (Q30)	.26	.13	.14	.28	.10
Death (Q6)	.28	.08	.12	.22	.08
Family (Q8)	.35	.13	.18	.23	.12
Quick (Q10)	.35	.12	.26	.15	.10
Unstyou (Q12)	.32	.10	.27	.10	.18
			Factor Intercorrelation		
				I	
			II	.47	

Note: - Eigenvalues are taken from the "final statistics" table of the SPSS output.
- Total variance explained by one factor solution = 16.8%.
- Total variance explained by two factor solution = 21.2%.

Considering the left hand side of this table first, most of the variables loaded on the general factor and, to this extent, there was support for a unidimensional construct. Almost 50% of the coefficients in the residual correlation matrix, however, were above .05 and it is clear that further factors were needed to improve the fit. The two factor solution reduced the number of residuals above .05 to 42% and although

this is still indicative of poor fit, the solution is quite interpretable. Using a loading threshold of 0.30 as a rough guideline, factor 1 captures most of the stressors that are associated with meeting the expectations of others. We would interpret it as a general 'worry' factor: am I good enough to do this? can I get enough help to do it? will I understand what others want me to do? do people respect my rights? And so on. Factor 2, on the other hand, captures those stressors that are associated with negative experiences: arguments with others; getting into trouble; being teased; and so forth. These two factors appear to represent major dimensions of stress for intellectually disabled people. The correlation between the two factors is 0.47, suggesting that these two dimensions are part of a general stress syndrome. There were six items that did not load on either factor using .30 as the cutoff. They could, of course, have been included by lowering the criterion. Hair, Anderson, Tatham & Black (1992) advise that a loading of .18 could be regarded as significant with a sample of this size ($p<.01$). We preferred the .30 cutoff, however, which gave a closer approximation to simple structure even though it resulted in the exclusion of some items.

One further factor pattern matrix, based on the same principal axis factoring method with oblique rotation, is also reported. This is the four factor solution which still left 31% of the coefficients in the residual correlation matrix with values above .05, but again proved highly interpretable in terms of the dimensions it identified. The pattern matrix is reported in Table 3.

Table 3
Factor Pattern Matrix for Four Factor Solution

Item (Q)	Factor I eigen = 5.3	Factor II eigen = 1.4	Factor III eigen = 1.1	Factor IV eigen = 0.8	h^2
Treatdf (Q4)	.54	.16	- .13	- .16	.39
Instrct (Q11)	.53	.05	- .02	- .03	.30
Partner (Q7)	.30	.11	.07	.13	.16
Help (Q21)	.48	.01	.07	.45	.58
Unstyou (Q12)	.32	.09	.05	.05	.14
Likeyou (Q31)	.56	- .09	.12	.00	.34
Friends (Q29)	.33	.12	- .01	.10	.19
Argue (Q3)	.07	.49	.04	- .01	.28
Intrub (Q28)	.15	.32	.03	.14	.23
Bully (Q13)	.02	.49	- .06	.14	.28
Interupt (Q14)	.05	.36	.02	- .11	.14
Tease (Q15)	.03	.66	- .13	- .09	.39
Fights (Q18)	- .07	.62	.14	.04	.44
Coerce (Q17)	.03	.36	.36	.02	.36
Cantdo (Q30)	- .03	- .12	.92	- .08	.75
Restrict (Q19)	- .23	.21	.41	.41	.44
Rights (Q5)	.15	- .19	.23	.36	.27
Expect (Q20)	.22	.03	.04	.34	.24
Helpless (Q23)	- .12	.19	- .04	.50	.30
Informed (Q24)	.30	- .02	- .07	.36	.27
Find Job (Q25)	.12	- .08	- .09	.68	.48
Privacy Q2)	.20	.07	.29	.09	.22
Death (Q6)	.15	.06	.25	- .05	.12
Family (Q8)	.10	.25	.00	.15	.14
Listen (Q9)	.20	.14	.26	.02	.21
Worksup (Q16)	.28	- .05	.12	.19	.19
Choice (Q1)	.27	.13	.09	.08	.18
Change (Q26)	.27	- .01	.00	- .01	.07
Quick (Q10)	.18	.05	.18	.09	.13
Home (Q27)	.27	.21	.22	.00	.27

Factor Intercorrelation Matrix

Factor	I	II	III
II	.37		
III	.32	.30	
IV	.39	.23	.24

Note: - Eigenvalues are taken from the "final statistics" table of the SPSS output.
- Total variance explained by four factor solution = 27.7%.

The first factor is defined by items which could be said to represent concern with social support. The second factor is the same as that which appeared in the two factor solution: a concern with negative experiences. The third factor is quite narrow but easily labelled: it would appear to reflect concern for personal competency, or self-efficacy. The fourth factor is harder to interpret, but we would label it as concern for what other people think of one's personal competency. All factors were

correlated, reinforcing the notion that there is a common dimension underlying all stress factors. From a theoretical point of view, all three solutions reported here can be supported. Our preferred solution is the two factor pattern shown in Table 2, mostly for practical reasons. Although all three solutions reported above are theoretically plausible, only the first and second solutions could serve as the basis for the construction of scales. The three factor (not reported), four factor, and subsequent solutions all contained factors with too few marker variables to serve as the basis for a reliable scale.

As a final step in the data analysis, items which defined the two factors shown in the right hand side of Table 2 were treated as two scales and Cronbach's Alpha was calculated to estimate the internal consistency. The 'worry' scale, with 13 items, had an Alpha of 0.81 with all items contributing to the reliability, as one would expect with scales formed on the basis of factor analysis. The 'negative experience' scale, with 11 items, had an Alpha value of 0.76. As a further validity check, the sample was divided into equal halves on the basis of position in the data file and the reliabilities recalculated. The estimates for the 'worry' scale were 0.80 and 0.79. The estimates for the 'negative experience' scale were 0.74 and 0.71, almost equivalent to the full sample estimate.

Discussion

The main aim of the present study was to attempt to define the stress dimensions captured by the SSS. When the scale was originally constructed, items were not selected as exemplars of hypothesised stress dimensions. Rather, items were included in the scale because they had been identified by members of the intellectually disabled population and their helpers as being potential stressors. The actual structure of the scale, however, was unclear. The exploratory analyses conducted in this study have uncovered a number of dimensions for which support can be found in the data. It is true that none of the solutions accounted for a very large portion of the variance, but this is to be expected in scales where one of the response options includes a “not experienced” category. The differing "popularity" of the items is quite typical of daily hassles scales generally where the number of items rated as stressful by individual subjects tends to fall somewhere between 3 and 12 (Hurst, Jenkins, & Rose, 1978). The important feature of the SSS is that it contains items which are relevant to the population of interest and presents them in such a way that they can be understood by people with intellectual disabilities. Despite low estimates of variance explained, recognizable factors did emerge and this in itself is a noteworthy finding.

There is definitely some support in these analyses for a general stress factor. It is clearly recognizable in all solutions but does not by itself account for much of the variance. A two factor solution (Table 2) is actually our preferred solution. The first dimension of the SSS appears to be a generalized stress factor. The items defining the factor address subjects' feelings about their inability to cope with the demands of daily life, their concerns over a perceived lack of skills and perceived lack of social support. We have labelled it a “general worry” factor. As much as anything else, it reflects a need for these people to have more supported control over their lives and thus taps one of the most important principles of service delivery for people with intellectual disabilities - empowerment. It is a principle that is increasingly enshrined in policy and legislation worldwide and has strong empirical foundations with the

connection between control and stress now well established (e.g., Lazarus & Folkman, 1984). The second factor involved unpleasant interpersonal interactions such as arguing, being bullied, being teased, or hearing others arguing. We have labelled this “negative interpersonal experiences”. The four factor solution reported in Table 3 also has some appeal because it separates the “worry” factor of the two factor solution into plausible sub-components. The problem with this solution, and solutions with still more factors, is that the number of indicator variables becomes too small to form practically useful scales. An expanded version of the SSS may see clearer definition of these dimensions.

There are no other published scales dealing with stress responses for people with intellectual disabilities, but some interesting comparisons can be drawn with selected studies that have used other scales in the general population. The Daily Hassles Scale (Kanner, Coyne, Schaefer, & Lazarus, 1981) reportedly yielded a single factor of general upset that resembles the “negative experiences” factor described above. The Perceived Stress Scale (PSS), described in Hewitt et al. (1992), yields a single stress factor that reportedly taps feelings of loss of control and difficulty coping with negative interpersonal relationships. This would appear to be a combination of the two factors described above. A close parallel also exists between the factors yielded by the SSS and two of those measured by the Daily Stress Inventory (DSI) (Brantley & Jones, 1989). These researchers identified six factors, the first of which dealt with negative interpersonal relationships and another reflected concern with lack of skills and competency.

The close parallels noted between the underlying factor structure of the SSS (a compilation of items taken directly from interviews with people with disabilities and their service personnel) and the PSS and DSI (both measures in common use with the general population) suggests that stress may be a common experience for both groups. Whether the intellectually disabled encounter the full range of stressors is uncertain, but it can be claimed that they are subject to at least a subset of the stressors felt by the general population. Staying on good terms with a flatmate, for example, can be difficult for anyone, and the consequences of a breakdown in relations are likely to be stressful. This commonality provides partial support for the claims of Nucci and Reiss (1987) that people with intellectual disabilities react to stress much like non disabled people.

It is envisaged that in future research we will build upon this exploratory analysis of the structure of the SSS by using confirmatory factor analytic techniques to test specific structural hypotheses. Particular attention will be paid to expanding the SSS using theoretical models of stress in the general population as the basis for selection of additional items. We will test for the responsiveness of persons with intellectual disabilities to other dimensions of stress. When this happens it is likely that the revised version will include a greater number of subscales. This would improve the clinical utility of the SSS where people with intellectual disabilities are facing major or multiple stressors in their lives. A better understanding of what they are experiencing will assist in the provision of support and perhaps even in the development of stress management programs to enable individuals to face new opportunities in their lives with confidence. Use of the SSS with non-disabled populations for whom anger, control and powerlessness may be an issue (e.g., the incacerated, may also prove interesting). In this regard, we are also investigating in people with intellectual disabilities some of the emerging components of stress suggested by these data, such as anger and lack of control over decisions and choices.

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Author's Note:

The correlation table upon which all factor analyses were based is available on request from the authors.

Appendix

The Subjective Stress Scale (Bramston & Bostock, 1994)

1 . Do you get to choose things that are important to you? (Choice)
2 . Do you get enough privacy/time to yourself? (Privacy)
3 . Have you heard people you know arguing? (Argue)
4 . Do people treat you as though you are different? (Treatdf)
5 . Do people respect your rights? (Rights)
6 . Has someone you know been seriously ill or died? (Death)
7 . Have you been getting on with your partner/girlfriend/boyfriend? (Partner)
8 . Do you get on well with your family? (Family)
9 . Do people listen to you when you have something to say? (Listen)
10. Do you feel you can't do things properly or quickly enough? (Quick)
11 . Can you understand other peoples instructions or directions? (Instrct)
12 . Can people understand you? (Unstyou)
13 . Does anyone bully or hit you? (Bully)
14 . Do people interrupt you when you are busy? (Interupt)
15 . Do people tease you or call you names? (Tease)
16 . Do you get on well with your supervisor/teacher? (Worksup)
17 . Do people make you do things you don't really want to do? (Coerce)
18 . Have you had any arguments or fights with anyone? (Fights)
19 . Have you ever wanted to do something and and never been given the chance to try? (Restrict)
20 . Can you do the things people want you to do? (Expect)
21 .Can you get enough help when you want or need it? (Help)
22 . Have you recently been in any really crowded places? (Crowds)
23 . Have you ever been in a difficult situation where you didn't know what to do? (Helpless)
24 . Do people around you let you know what's going on? (Informed)
25 . Will you always be able to have/find a job? (Findjob)
26 . Do you feel confident handling money and counting change? (Change)
27 . Do you like living where you live at the moment? (Home)
28 . Have you been in trouble lately? (Intrub)
29 . Do you have enough friends? (Friends)
30. Do people think you can't do things when you think you can? (Cantdo)
31 . Do people like talking to you? (Likeyou)