

# PSYCHOMETRIC PROPERTIES OF THE LITHUANIAN VERSION OF THE ACCEPTANCE OF DISABILITY SCALE – REVISED (ADS-R): PILOT STUDY

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**Abstract.** The internal consistency reliability and structure-related validity of the Lithuanian version of the Acceptance of Disability Scale – Revised (ADS-R), a 32-item instrument originally developed to assess an individual's adaptation to disability, was the focus of the research study. The translated instrument was completed by 274 mobility impaired individuals aged from 18 to 80. In this pilot study, it was found that the Lithuanian version of ADS-R had preliminary sufficient internal consistency reliability and structure-related validity similar to those reported by the authors of the original instrument. However, this Lithuanian version still needs further studies with a larger sample and more specific disability representation for exploring the psychometric properties more thoroughly. Nevertheless, in that there are few instruments on adaptation that have already been translated and used with the Lithuanian population, the authors believe that this pilot study is a very important first step in the process of creating a valid and reliable instrument.

**Key words:** acceptance of disability, psychometric properties of the questionnaire, ADS-R, pilot study.

## INTRODUCTION

People with disabilities represent the largest minority group in the world. According to statistical data, currently around 10% of the world's population, or roughly 650 million people, live with a disability (Disabled world, 2018). Recent Lithuanian statistics revealed over 242,000 people

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have a disability, which is also around 10% of the Lithuanian population. Mobility disability is among the most common types of disability, especially for older adults, and contains over 31% of all Lithuanian individuals with a disability (Lithuanian Ministry of Social Security and Labour, 2018).

Like everyone, people with disabilities desire to achieve acceptance and inclusion in society. Sociopolitical definitions of disability, the independent living movement, improved media and social messages, observation and consideration of environmental barriers, and the implementation of Declaration of Human Rights of Persons with Disabilities have all transpired to influence how a person is accepting his or her disability (Harpur, 2012; Mallett & Runswick-Cole, 2014).

Despite all these improvements, many challenges remain for people with disabilities, and they continue to be affected by stigma and prejudice. They repeatedly contend with various issues of successful inclusion of the society, and pivotal to the societal acceptance of disabilities is the degree to which the individuals accept their own physical disabilities (Lee & Moore, 1998).

The concept of acceptance of disability was developed by Beatrice Wright (1960, 1983) based on her coping versus succumbing frameworks that underscored the importance of not enabling society to devalue people with disabilities. Wright's value shift theory was inspired by Kurt Lewin's (1939) work, which observed great variation in reactions to physical disability. He recognized that many people manage the negative implications of the disability by shifting their values so as to experience increased personal worth.

The extent of acceptance of disability is associated with the degree that a person (a) recognizes values other than those that are in direct conflict with the disability; (b) deemphasizes the aspects of physical ability and appearance that contradict his or her disabling condition; (c) does not extend his or her disability beyond actual physical impairment to other aspects of the functioning self; (d) does not compare him or herself with others in the areas of limitations but instead emphasizes his or her own assets and abilities (Dembo, Leviton & Wright, 1975; Lee & Moore, 1998).

Over the past century, a large number of measures of psychosocial adaptation to disability have been reported in the literature. Livneh

& Antonak (2005) discuss at least five measures that target a person's adjustment to disability, including Millon Behavioral Health Inventory (MBHI; Millon, Green, & Meagher, 1979), Psychosocial Adjustment to Illness Scale (PAIS; Derogatis & Lopez, 1983), Sickness Impact Profile (SIP; Bergner et al., 1976), Reactions to Impairment and Disability Inventory (RIDI; Livneh & Antonak, 1990) and Acceptance of Disability Scale (ADS; Linkowski, 1971).

Major strengths inherent in the ADS include its theory-driven rationale, reliability, and use in various samples (Livneh & Antonak, 2005). ADS particularly measures the concept of acceptance of disability and has been used in a number of studies (Townend, Tinson, Kwan & Sharpe, 2010; Nicholls, Lehan, Plaza, Deng, Romero et al., 2012; Carl, 2013). The original ADS consists of fifty self-report items associated with B. Wright's (1983) theory of loss that focuses on feelings, values, and emotions that may be associated with having a disability.

Despite the wide and continued use of the ADS, the psychometric evidence used to support the validity and internal consistency of the measure was called into question in an evaluation by Keany and Gluekauf (1999), who examined the instrument and concluded that the ADS did not provide evidence of a systematic measure of the value change process. In response to these criticisms and the developer's initiative to update the disability terminology used in some items to reflect sociopolitical and legislative changes, Linkowski and Groomes (2007) revised the original scale in an effort to support empirically the reliability and validity of the scale's measurement of acceptance of loss theory, as well as to increase its relevance to persons with disability in contemporary society. In their study, Groomes and Linkowski (2007) made the discovery that the number of items could be reduced from fifty to thirty-two, while still maintaining psychometric integrity. They also changed the phraseology of certain items to reveal terminology consistent with broader disability issues and not just those reflective of rehabilitation services. This scale contains four subscales, representing four aspects of adjustment to disability process, which are described as follows (Groomes & Linkowski, 2007; Linkowski, 1971):

- Enlargement of Scope of Values (or 'enlargement') defines the degree to which an individual has enlarged his/her scope of values from

those that may have been lost with disability to those that do not conflict with one's disability;

- Transformation from Comparative Status to Asset Values (or 'transformation') describes the degree to which an individual has moved beyond comparing his/her own limitations with others and has begun emphasizing his/her own assets and liabilities;
- Containment of Disability (or 'containment') represents the degree to which one does not generalize from his/her actual impairment to other aspects of functioning not objectively impaired by the disability;
- Subordination of physique (or 'subordination') defines the extent to which individuals can minimize aspects of physical ability and appearance when in accordance with their disability.

All these processes are equally important and do not occur in any specific order – the 'enlargement' process is the first one to occur and is then followed by the other three (Grisr, 2010).

Since the revised version of ADS purports to measure the same underlying construct it follows that these studies provide initial evidence for the construct validity of the ADS-R. To date there have been not many validation studies of the English version of ADS-R (Carl, 2013; Chen, Kotbungkair & Brown, 2015). The validity has been tested in Chinese and Thai languages (Chiang, Lai, Livneh, Yeh & Tsai, 2013; Chen, Kotbungkair & Brown, 2015)

Since ADS is one of the most frequently used – and reported in the literature – measures of psychosocial adaptation to disability (Livneh & Antonak, 2005), it is important to have a valid and reliable version of this instrument, measuring acceptance of disability in the Lithuanian language. However, translation of the original instrument and its adaptation to mobility impaired individuals who live in Lithuania does not automatically mean that it is valid or matches the original instrument.

Therefore, the aim of this pilot study is to evaluate psychometric properties of the Lithuanian version of the ADS-R, evaluating the acceptance of disability and its correlates among mobility impaired individuals.

## RESEARCH METHODS

### Participants

In total, 516 people with mobility disability were invited to participate in this study. To be included in the study, a participant had to match three criteria: (1) be older than 18; (2) have a mobility disability which might be defined as a disabling condition or other health impairment that requires adaptation. People with mobility disabilities often use assistive devices or mobility aids, such as crutches, canes, wheelchairs and artificial limbs to obtain mobility; (3) be willing to participate in the study. The final study sample comprised 274 participants with mobility disabilities.

Sociodemographic variables associated with this sample included the following sociodemographic characteristics: (a) age range: 18 to 80 years ( $M = 39.64$ ,  $SD = 15.11$  years); (b) gender: women (59.1%), men (40.9%); (c) marital status: single (43%), married or living with a partner (37.8%), divorced (13.9%) or widowed (5.3%); (d) education: secondary education (32.5%), university education (26.3%), non-university education (18.9%), vocational training (16.7%), basic education (5.6%); (e) employment status: not employed (51.7%), employed (31.3%), students (12.7%), or employed students (4.3%).

The mobility disabilities ranged from mild walking impairment to using crutches, a walker, a wheelchair or other assistive devices. The severity of disability was reported as: (a) moderately severe (34.4%), (b) severe (33.7%), (c) non-severe (15.8%), (d) very severe (13.0%). These categories were formulated according to the law of Disability and Working Capacity Assessment in Lithuania (Disability and Working Capacity Assessment Office under the Ministry of Social Security and Labour of Republic of Lithuania, 2018).

Most of the participants had acquired disability (62.8%), while others had congenital disability (37.2%). Age at the time of the acquired disability ranged from 1 to 66 years ( $M = 14.82$ ,  $SD = 11.11$  years). Most participants had a visible (48.9%) or partly-visible (31.9%) disability. The majority of respondents (73.4%) reported feeling chronic pain due to their mobility disability and its frequency was reported as: (a) never (16.3%),

(b) rarely (15.0%), (c) sometimes (32.3%), (d) often (28.8%), (e) most of the time (12.5%). Intensity of perceived chronic pain ranged from 0 to 10 ( $M = 5.02$ ,  $SD = 2.57$ ).

### **Instruments**

*Acceptance of disability.* The Acceptance of Disability Scale-Revised (ADS-R) is a 32-item self-reporting measure of adjustment to disability among people with disabilities (Groomes & Linkowski, 2007). Each statement is rated on a 4-point Likert-type scale ranging from 1 (strongly disagree) to 4 (strongly agree). Possible scores on the ADS-R range from 32 to 128. A low score reflects a low level of acceptance of the disability. The scale contains four subscales:

- 1) Transformation from Comparative Status to Asset Values (T) – 9 items,
- 2) Containment of Disability (C) – 9 items,
- 3) Enlargement of Scope of Values (E) – 9 items,
- 4) Subordination of Physique (S) – 5 items.

Twenty-two items on the ADS-R are reversed scored, so reverse scoring was completed before the data analysis.

### **Procedure**

The permission for translating and using the ADS-R was given by the major author of the instrument. The translation was organized following the procedure of back–forward translation according to the recommendations prepared by Van de Vijver and Hambleton (1996). One of the authors of this publication translated the instrument, and the translated items were reviewed by the Lithuanian language expert. This was followed by a bilingual (Lithuanian and English speaking) psychologist translating the instrument back into the English language. These translations were reviewed and analyzed by the authors of this publication. Difficult items were discussed after the back–forward translation and corrected by translators proficient in both languages.

The completed instrument was then completed by the study participants (adults who have any kind of mobility disability). The sample was a convenience sample, in that only individuals who would agree to participate in the study were selected. Potential participants were reached

while collaborating with various Lithuanian associations and organizations for people with disability. The data of the study came from self-administered questionnaires. Respondents were personally asked to fill in the questionnaires, after they had been informed about the purpose and procedure of the study.

The study participants were asked to complete the survey containing sociodemographic information questionnaire, ADS-R, and several other questionnaires related to quality of life and psychological well-being (these are not analyzed in this publication). All surveys were completed individually by contacting each respondent in person. Every participant of the study was informed about the main goal of the study, study procedure, data protection, and their right to cancel their participation at any time of the study.

### **Data Analysis**

The data were analysed using SPSS software, version 23.0 for Windows. The confirmatory factor analysis was conducted using the Mplus 6.0 program (Muthén & Muthén, 1998–2012).

Statistical significance was considered when the  $p$ -value  $\leq .05$ .

## **RESULTS**

### **Reliability**

The internal consistency of the ADS-R was established by calculating Cronbach's alpha coefficient for four subscales, representing adjustment to disability processes: enlargement of scope of values, subordination of physique, containment of physical effects and transformation from comparative to asset values.

The subscales of the ADS-R showed good internal consistency (Cronbach's  $\alpha = .74-.88$ , Table 1). Confidence intervals show that all scales are appropriate at least for a group testing. The internal consistencies of all four subscales were very similar to the original sample (Groomes & Linkowski, 2007). The overall reliability of the scale was very high (Cronbach's  $\alpha = .958$ , original sample - Cronbach's  $\alpha = .93$ ).

**Table 1.** Internal Consistency of the ADS-R Subscales among Lithuanian and Original Samples

Acceptance of disability (subscales)	Cronbach's alpha	
	Lithuanian sample (N = 274)	AD-R original sample (N = 356)
Enlargement of scope of values	.84 CI [.81; .87]	.82
Subordination of physique	.74 CI [.69; .79]	.71
Containment of physical effects	.88 CI [.86; .90]	.88
Transformation from comparative to asset values	.87 CI [.85; .89]	.88

Note: CI – confidence interval; N – study sample.

### Concurrent Validity

The validity of the AD-R was examined analyzing correlations among scores. Pearson's correlation coefficients were calculated among four subscales scores.

**Table 2.** Concurrent Validity between the ADS-R Subscales

Adjustment to disability (subscales)	1	2	3
1. Enlargement of scope of values			
2. Subordination of physique	.443**		
3. Containment of physical effects	.757**	.553*	
4. Transformation from comparative to asset values	.784**	.617**	.890**

\*p<.05; \*\*p<.001



The results showed (see Table 2) that the scores of all four ADS-R subscales are significantly related to each other, which confirms high concurrent validity of the scale.

## **FACTOR STRUCTURE**

### **Exploratory Factor Analysis.**

First of all, the exploratory factor analysis (EFA) was conducted by employing Principal Axis Factoring with Oblimin rotation for ADS-R, and a fixed number of four factors was selected as this structure was reported for original scale. The extracted factors explained 59.6% of variance of the Lithuanian sample, while the extracted factors explained 42.1% of the ADS-R variance of the original sample (Groomes & Linkowski, 2007).

Unfortunately, the authors of the original study have conducted the EFA only with the primary 50-item ADS but now with the revised version, so we had limited possibilities to compare our results with the original results obtained by Groomes and Linkowski (2007).

During the EFA four factors were extracted from 32 items about the acceptance of disability. The Kaiser–Meyer–Olkin value was .958, exceeding the recommended value of .6 (Cekanavičius & Murauskas, 2002). Bartlett’s test of sphericity reached statistical significance ( $\chi^2 = 5465.86$ ,  $p = .001$ ) meaning that variables are correlated and suitable for factor analysis. The initial eigenvalues were 14.2 for the 1<sup>st</sup> factor, 2.0 – for the 2<sup>nd</sup> factor, 1.6 – for the 3<sup>rd</sup> and 1.3 for the 4<sup>th</sup> extracted factor. As the results revealed, 1<sup>st</sup> factor explained 44.35% of variance, 2<sup>nd</sup> – 6.30%, 3<sup>rd</sup> – 4.90%, and 4<sup>th</sup> – only 4.02% of variance of the acceptance of disability.

In the original sample, the eigenvalues for the subscales ranged from 12.8 to 1.8 (Groomes & Linkowski, 2007). In the original study, 1<sup>st</sup> factor explained 25.67% of variance, 2<sup>nd</sup> – 7.44%, 3<sup>rd</sup> – 5.44%, and 4<sup>th</sup> – only 3.54% of variance of the acceptance of disability.

**Table 3.** *Item Loadings for the Components Extracted from Oblimin Rotation for Each Loading Following Principal Axis Factoring for ADS-R Items*

<i>Item</i>	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>Factor 4</i>
1. With my disability, all areas of my life are affected in some major way (C)	<b>.663</b>	-.038	.000	.064
2. Having my disability, I am unable to do things like people without disabilities do (T)	.673	-.160	.168	-.038
3. Disability or not, I am going to make a good in life (E)	.006	.155	<b>.609</b>	-.077
4. Because of my disability, I have little to offer other people (T)	<b>.617</b>	.122	.101	-.044
5. Good physical appearance and physical ability are the most important things in life (S)	.000	<b>.548</b>	.005	-.156
6. A person with a disability is restricted in certain ways, but there is still much s/he is able to do. (E)	.008	.219	<b>.625</b>	.319
7. No matter how hard I try or what I accomplish, I could never be as good as the person who does not have my disability (T)	.319	<b>.333</b>	.119	-.010
8. It makes me feel very bad to see all the things that people without disabilities can do that I cannot (C)	<b>.352</b>	.170	.082	-.346
9. The most important thing in this world is to be physically capable (S)	.046	<b>.488</b>	.130	-.244
10. Because of my disability, other people's lives have more meaning than my own (T)	.246	.299	.111	<b>.496</b>
11. Because of my disability, I feel miserable much of the time (C)	<b>.530</b>	.091	.223	-.185
12. Though I have a disability, my life is full (E)	.236	-.122	<b>.570</b>	-.273
13. The kind of person I am and my accomplishments in life are less important than those of persons without disabilities (T)	.245	.274	-.023	.398
14. A physical disability affects a person's mental ability (S)	.188	<b>.536</b>	-.085	<b>.023</b>

**Table 3 cont.**

<i>Item</i>	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>Factor 4</i>
15. Since my disability interferes with just about everything I try to do, it is foremost in my mind practically all of the time (C)	<b>.494</b>	.195	.129	-.170
16. There are many things a person with my disability is able to do (E)	.167	-.013	<b>.628</b>	.055
17. My disability in itself affects me more than any other characteristic about me (C)	<b>.402</b>	.118	.063	-.332
18. There are many more important things in life than physical ability and appearance (E)	-.069	.037	<b>.400</b>	-.284
19. Almost every area of life is closed to me (T)	<b>.818</b>	-.021	.075	.055
20. My disability prevents me from doing just about everything I really want to do and from becoming the kind of person I want to be (C)	<b>.676</b>	.097	.052	-.132
21. I feel like an adequate person regardless of the limitation of my disability (E)	.103	-.151	.470	.529
22. My disability affects those aspects of life that I care most about (C)	<b>.794</b>	.055	-.096	.070
23. A disability such as mine is the worst possible thing that can happen to a person (T)	<b>.501</b>	.211	.103	-.161
24. You need a good and whole body to have a good mind (S)	-.013	<b>.640</b>	.070	.103
25. There are times that I completely forget that I have a disability (E)	.137	.016	<b>.524</b>	.000
26. If I didn't have my disability, I think I would be a much better person. (T)	.209	<b>.483</b>	.154	-.051
27. When I think of my disability, it makes me so sad and upset that I am unable to do anything else (C)	<b>.492</b>	.211	.121	-.193
28. People with disabilities are able to do well in many ways (T)	-.014	.140	<b>.691</b>	-.009
29. I feel satisfied with my abilities and my disability does not bother me too much (E)	.349	-.105	<b>.552</b>	.045

**Table 3** *cont.*

<i>Item</i>	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>Factor 4</i>
30. In just about everything, my disability is annoying to me so that I can't enjoy anything (C)	<b>.403</b>	.238	.228	-.182
31. Physical wholeness and appearance make a person who s/he is (S)	-.075	<b>.620</b>	.040	.053
32. I know what I can't do because of my disability, and I feel that I can live a full life (E)	.093	-.025	<b>.582</b>	-.277

As the results of our EFA revealed (see Table 3), the most items of four extracted factors match four original factors representing four ADS-R subscales. The first and the largest factor was contained by all nine items from the 'containment' subscale and four items from the 'transformation' subscale. Meanwhile, the second factor matched the 'subordination' factor the best – originally this subscale contains five items, and in our results all of them correlated with the same second factor, together with two other items from the 'transformation' subscale. Our data also matched the 'enlargement' subscale well – eight of nine original items correlated the strongest with the third factor, together with one item from the 'transformation' scale. The fourth and the smallest factor contained only three items – two items from the 'transformation' subscale and one from the 'enlargement' subscale.

### Confirmatory Factor Analysis

A confirmatory factor analysis (CFA) of the ADS-R was conducted in order to identify whether the data fit the original ADS-R instrument model created by Groomes & Linkowski (2007). The second-order factor model was tested, where four dimensions of the ADS-R load onto a single general acceptance factor. The MLR estimation was used in the CFA.

The statistics of the ADS-R model was evaluated using the following indices (Ceknavičius & Murauskas, 2011): 1)  $\chi^2$  test ( $p$  should be  $> 0.05$ ); 2) RMSEA (root mean square error of approximation) and its lower and upper limits of a 90% confidence interval –  $RMSEA \leq .05$  indicates a good fit of the model;  $RMSEA \leq 0.08$  is acceptable; 3) CFI (comparative fit index) –  $CFI \geq .95$  indicates a good fit;  $CFI \geq .90$  indicates an acceptable fit.

As the results of our CFA revealed, the original model does not fully fit our data ( $\chi^2 = 983.21$ ,  $df = 460$ ,  $p = .001$ ). Other fit indices are acceptable (RMSEA = .064, CI [.059-.070]) or very close to being acceptable (CFI = .877). The authors of ADS-R scale did not conduct a confirmatory factor analysis in their original study (Groomes & Linkowski, 2007).

## DISCUSSION

The present study examined the psychometric properties of the revised version of the Acceptance of Disability Scale among Lithuanian adults who have mobility disability. The results of the Lithuanian version of the ADS-R indicate that Cronbach's alpha coefficients are acceptable for group testing. The internal consistency of adjustment to disability and its subscales is similar to the original ADS-R data (Groomes & Linkowski, 2007).

According to the results of our exploratory factor analysis, our data fit four original subscales of ADS-R. The highest fit was found for subordination of physique subscale: originally this subscale contains five items, and in our results all of them correlated with the same second factor, together with two other items from 'transformation' scale. The 'subordination' subscale mostly reflects the personal importance of physical abilities and appearance to the individual with disability (Linkowski, 1971; Grist, 2010). Two items from 'transformation' subscale, which were also correlated with the second extracted factor, indicate the individual's perception of their own worth compared with individuals not having a disability (e. g., 'If I didn't have my disability, I think I would be a much better person'), which could meaningfully explain this factor.

Our data matched also the 'enlargement' subscale well – eight of nine original items correlated the strongest with the third factor, together with one item from 'transformation' scale. The 'enlargement' subscale represents how individual's scope of values is extended from values that have been lost to those that do not conflict with their disability (Groomes & Linkowski, 2007). All these items, including the one from 'transformation' subscale, are formulated in a positive manner, representing an optimistic attitude to one's life despite having a disability (e. g., 'There are many things a person with my disability is able to do.'). So this factor could really describe the

enlargement aspect of acceptance process, which is the first step to successful adaptation to disability.

The first factor of our EFA had the highest eigenvalue and contained nine items from the 'containment' subscale and four items from the 'transformation' subscale. According to the authors of the original scale, individuals who do not spread their disability beyond actual impairment to other aspects of their functioning self, demonstrate the construct of containment of disability effects (Groomes & Linkowski, 2007; Linkowski, 1971). Meanwhile, the fourth and the smallest factor from our EFA contained only three items – two items from the 'transformation' subscale and one from the 'enlargement' subscale.

To sum up, our data matched the 'subordination', 'containment' and 'enlargement' subscales quite well. The 'transformation' subscale did not fit our data very well – all nine items of this subscale correlated with all four factors. According to Linkowski (1971), the value shift characteristics of transformation require individuals to move beyond comparing, against other individuals, their own limitations and liabilities, toward emphasizing his or her own assets and abilities (Linkowski, 1971; Wright, 1983). As the adjustment to disability is a long-term process, it can probably involve both negative and positive experiences, and maybe that could be the reason why this factor contained both positive and negative statements towards one's statement.

In addition, according to our results, it seems that in the ADS-R scale there were two strong main factors and the other two were weaker, explaining less than 5.0% of variance. The scale should originally contain four subscales which reflect four factors explaining the person's adjustment to his or her disability. These results may suggest that maybe two factors should be enough for explaining the variance of adjustment. On the other hand, the original study reported quite small eigenvalues of four extracted factors as well (Groomes & Linkowski, 2007).

While analyzing the results of CFA, we have found that the original model of ADR-S does not fully fit our data but the results we report look quite promising. While some model fit indices are acceptable, p-value of chi-square test was non-significant in our analysis. The Chi-square test assesses how well a theoretical model fits the observed data. If there is a good model fit, p-value should not be statistically significant. However, according to some researchers, chi-square statistic is very sensitive to sample size

and is no longer relied upon as a basis for acceptance or rejection (Schlermelleh-Engel et al., 2003; Vandenberg, 2006).

Unfortunately, the original authors of ADS-R did not conduct either EFA or CFA of the revised version of the scale, so we were unable to compare our results with the original sample. In general, not many previous studies analyzing EFA and CFA of the ADR-S were found. While testing the Chinese version of the questionnaire, EFA with principal component approach showed that this version of ADS-R comprised four primary components, which was equivalent to the original scale and explained 51.11% of total variance. Item composition in each component was also corresponding to the original scale (Chiang, Lai, Livneh, Yeh & Tsai, 2013). Previous studies have demonstrated that the ADS-R has good internal consistency in different groups of patients with chronic illnesses and disabilities, even though they have not analyzed the factorial structure of the questionnaire (Chiu, Livneh, Tsao & Tsai, 2013; Chen & Crewe, 2009). Most of these studies were implemented with Chinese or Taiwanese respondents, and there are fewer studies using the ADS-R for Western samples (Grist, 2010; Chen, Kotbungkair & Brown, 2015). Considering that the ADS-R is quite a new instrument, developed in 2007, further research using this scale for other foreign samples would be very welcome and useful.

We would also like to point out that a short measure of ADS-R named Brief Adaptation to Disability Scale-Revised (B-ADS-R) also exists. B-ADS-R contains 12 items and is based on the same four value changes postulated by B. Wright. This version was adapted in 2013 and has been tested in the sample Taiwanese respondent with spinal cord injury (Lin et al., 2013). The authors of the scale have received promising results and the B-ADS-R has demonstrated adequate psychometric properties. We did not manage to find any more research examining the measurement structure of the B-ADS-R but we believe that the readers could benefit in knowing about this version of the scale and maybe use it for future scientific and rehabilitation research.

Though this was the first study related to this topic there are some limitations. First, the non-randomness of the recruited study sample limits the generalizability of the findings to Lithuanian adults with mobility disabilities. Second, it was our non-homogeneous sample regarding the cause of disability. The main inclusion criterion for study participants was having a mobility disability, but the medical diagnosis was not important in

this study. Future studies might concentrate on a specific type of mobility disability (e.g., persons with spinal cord injury or patients with arthritis) for getting more accurate results. Another limitation is that our study lacks longitudinal data and we were unable to do test-retest reliability for the ADS-R.

With these limitations, we suggest that additional studies need to be conducted to replicate this study with a larger sample and more specific disability representation. Future studies might include a comparison. Moreover, analyzing other psychometric properties (e.g., test–retest reliability) of the Lithuanian version of ADS-R in future studies may provide some additional information.

Even with the forgoing limitations, the importance of this study is that this is the first attempt to translate, adapt, and use the instrument measuring an individual's acceptance of disability. This pilot study gives the basis for future research related to psychometric properties of the Lithuanian version of ADS-R. The preliminary reliability and structure-related validity analysis could be especially useful for other researchers who might wish to consider additional research with a Lithuanian sample. We hope that the results of this study will provide a base for other researchers to continue the exploration of the ADS-R with samples of individuals with various kinds of physical disabilities. We also believe that in the near future Lithuanian counselors, psychologists, rehabilitation specialists and researchers could possibly use this version of ADS-R to assess a person's adjustment to his or her disability and regarding the results, design more effective intervention strategies for dealing with the disability related issues.

## **CONCLUSIONS**

In this pilot study, it was found that the Lithuanian version of ADS-R has preliminary sufficient internal consistency reliability and structure-related validity. The preliminary conclusion was made that the Lithuanian version of ADS-R, just like the original instrument, has four subscales representing four processes of acceptance of disability. However, it requires additional studies with a larger sample and more specific disability representation for exploring the psychometric properties more thoroughly. Nevertheless, in that there are few instruments on adaptation that have already been translated and used with the Lithuanian population; the authors believe that



this pilot study is a very important first step in the process of creating a valid and reliable instrument.

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## **PATOBULINTO NEGALIOS PRIĖMIMO KLAUSIMYNO (ADS-R) LIETUVIŠKOS VERSIJOS PSICHOMETRINIAI RODIKLIAI: ŽVALGOMASIS TYRIMAS**

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**Santrauka.** Šio žvalgomojo tyrimo tikslas – išanalizuoti patobulinto negalios priėmimo klausimyno (angl. „Acceptance of Disability – Revised“, ADS-R) lietuviškos versijos psichometrinius rodiklius. Klausimyną sudaro 32 teiginiai, jo paskirtis – įvertinti asmens prisitaikymą prie turimos negalios. Žvalgomajame tyrime dalyvavo ir į lietuvių kalbą išverstą klausimyną užpildė 274 įvairaus sunkumo judėjimo negalią turintys asmenys nuo 18 iki 80 metų amžiaus. Tyrimo rezultatai atskleidė, kad lietuviška klausimyno versija pasižymi gana geru vidiniu suderinamumu, jo faktorių struktūra panaši į tą, kurią pateikė šio klausimyno autoriai D. Gromes ir D. C. Linkowski. Visgi, siekiant tiksliau nustatyti klausimyno validumą bei faktorių struktūrą, reikėtų atlikti tolesnius tyrimus su didesne bei negalios atžvilgiu labiau homogeniška imtimi. Mūsų šalyje trūksta lietuviškų klausimynų, matuojančių asmens prisitaikymą, tad šis žvalgomasis tyrimas yra pirmas žingsnis siekiant turėti patikimą ir validizuotą instrumentą.

**Reikšminiai žodžiai:** prisitaikymas prie negalios, psichometriniai rodikliai, ADS-R, žvalgomasis tyrimas.

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