INTERNATIONAL JOURNAL OF MODERN EDUCATION STUDIES

| Volume 7 - No 2 - December 2023 - ISSN 2618-6209 |

Research

Adaptation of the Questionnaire on Attitudes toward Disability in Higher Education into Turkish: Validity and Reliability Study

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Article Type
Original Research

International Journal of Modern Education Studies
2023
Volume 7, No 2
Pages: 499-510
http://www.ijonmes.net

Article Info:

Received : 05.05.2023
Accepted : 05.10.2023

Abstract:

The aim of this study was to adapt the Turkish version of the Questionnaire on Attitudes towards Disability in Higher Education (QAD-HE) developed by Fuentes, Pérez-Padilla, Fuente, and Aranda (2021) into the national literature by conducting validity and reliability studies. In this context, this study included findings related to the validity and reliability of the adapted scale. A total of 606 individuals from a state university participated in this study. Of the participants, 535 were students and 71 were teachers. The findings revealed that the Questionnaire on Attitudes toward Disability in Higher Education (QAD-HE), which was adapted within the scope of the research, contains 27 items and has a two-dimensional structure as "egalitarian attitudes" and "prejudiced attitudes." The findings showed that the Questionnaire on Attitudes toward Disability in Higher Education can be used to determine attitudes toward individuals with disabilities studying or working in higher education in Turkey.

Keywords: Attitudes, higher education, individuals with disabilities, physical disabilities, sensory disabilities.

Citation:
Sardohan Yıldırım, A. E., (2023). Adaptation of the Questionnaire on Attitudes toward Disability in Higher Education into Turkish: Validity and Reliability Study. *International Journal of Modern Education Studies, 7*(2), 499-510. https://doi.org/10.51383/ijonmes.2023.343

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INTRODUCTION

With the adoption of the social model in the United States and Europe, and with the consideration of special education based on human rights, radical changes have been made in the general education system within the framework of inclusive education. Along with the social model, inclusive education is an educational philosophy and practice that aims to ensure that all students learn and actively participate in educational activities (Morina, 2016). Simultaneously, positive changes in laws and regulations for individuals with disabilities are observed directly at all levels of education (from pre-school to higher education). The fact that students with disabilities receive education in the same environment as their typically developing peers and participate in cultural and social activities in their university life plays an important role in the formation of their peers' perceptions of and attitudes toward these students (Kauffman, Anastasiou et al., 2023). Attitudes guide individuals in improving their quality of life, developing friendships, and making academic progress. According to data from the Council of Higher Education (YÖK, 2020), 51,647 students with disabilities are studying at state and foundation universities in Turkey. Of these, 27,782 had associate degrees, 23,581 had bachelor's degrees, 236 had master's degrees, and 48 had doctoral degrees. 89% of students with disabilities are enrolled in open education programs (YÖK, 2020). Depending on the nature and degree of their disability, these students require adaptations in terms of materials, assistive technology, lecture notes, and accessibility to physical and social spaces (Brown and Wolf, 2021). Therefore, students with disabilities who continue their university education face difficulties in social, cultural, spatial, and educational aspects (Fajardo, 2017; Pace & Kuh, 1998). For a successful inclusive practice in universities, students' special needs should be considered by differentiating and specializing in teaching materials, methods, and settings.

The adaptations that need to be made for students with disabilities vary, and in this context, students with disabilities face negative attitudes from peers and staff that result in negative outcomes on their development and educational achievements (Garabal-Barbeira 2015). Understanding the scope, content, and direction of attitudes is important for preventing, eliminating, and positivizing prejudice against individuals with disabilities (Fuentes et al., 2021). There is a significant amount of literature on different attitude scales that have been developed for individuals with disabilities. Commonly used scales are the "Attitude toward Disabled People Scale (ATDP)" (Yuker et al., 1966), "Scale of Attitudes toward Disabled Persons" (Antonak, 1982), "The Educators' Attitudes toward Disability Scale" (EADS) (Freer, 2018), "Multidimensional Attitudes Scale toward Persons with Disabilities" (MAS) (Findler et al., 2007). In the Turkish literature, it is seen that scales named "Attitude scale towards the education of individuals with disabilities" (Köstereliоğlu, 2013), "Attitude scale towards individuals with special needs" (Yaralı, 2015) were developed. However, there is a lack of a scale that determines attitudes toward individuals with disabilities in higher education. Therefore, the adaptation of the (QAD-HE) into Turkish inclusive education research will provide comparable results in the international context.

In this study, the Questionnaire on Attitudes toward Disability in Higher Education (QAD-HE), which was developed to determine the attitudes of university students and academic staff toward individuals with disabilities at the university, was adapted to Turkish. Therefore, the results of the adaptation of the Questionnaire on Attitudes towards Disability in Higher Education (QAD-HE) developed by Fuentes, Pérez-Padilla, Fuente, and Aranda (2021) are analyzed. In line with this scale planned to be adapted, the direction and scope of attitudes towards students with special needs in higher education can be determined, and attitude change studies can be carried out accordingly.

METHOD

This was a scale adaptation study. Information about the characteristics of the study group and the data collection tool, the adaptation process of the scale to Turkish, and the data analysis are detailed below

Participants

A total of 606 individuals from a state university participated in this study. Of the participants, 535 were students and 71 were university lecturers. Of these students, 369 (68.97%) were female and 166 (31.03%) were male. The average age of students was 23 years (22.84; SD = 4.13). 67 (12.52%) students were in the 1st grade, 149 (27.85%) were in the 2nd grade, 193 (36.07%) were in the 3rd grade, 120 (22.43%) were in the 4th grade, three (0.56%) were in the 5th grade, one (0.19%) was in the 6th grade, and two students did not specify their grade. According to the opinions of the student participants, the mean level of knowledge about disability (scored from 1 to 4) was 2.95 (ss = 0.95). Among the lecturers, 45 (63.38%) were female and 26 (36.62%) were male. The average age of the lecturers was 38 years (38.32; SD = 6.39). According to the opinions of the participants, the average level of knowledge about disability was 3.30 (SD = 0.72).

Data Collection Tools

Sociodemographic Questionnaire

For the demographic characteristics of the participants, the sociodemographic questionnaire developed by the researchers was used. This form was prepared to determine the participants' gender, age, employment status, and type and frequency of contact with individuals with physical and sensory disabilities.

The data obtained are listed in Table 1.

Table 1

The type and frequency of contact with individuals with physical and sensory disabilities

	Students		Teachers	
	Frequency N(%)	Average frequency of communication M (SD)	Frequeny N(%)	Average frequency of communication* M (SD)
To meet someone close to you with a physical disability	212 (%39,63)	2,99 (1,69)	39 (%54,93)	3,54 (1,76)
Meet a classmate with a physical disability	116 (%21,68)	2,22 (1,55)	21 (%29,58)	2,56 (1,82)
To meet someone close to you with a sensory disability	160 (%29,91)	2,59 (1,66)	34 (%47,89)	3,20 (1,87)
Meet a classmate with a sensory disability	110 (%20,56)	2,14 (1,56)	20 (%28,17)	2,49 (1,80)

** On a scale from 1 to 6: 1 = hardly ever, 6 = constantly.*

Questionnaire on Attitudes toward Disability in Higher Education (QAD-HE)

The Questionnaire on Attitudes towards Disability in Higher Education (QAD-HE) was developed by Fuentes, Pérez-Padilla, Fuente, and Aranda (2021). This scale consists of two sub-sections and 27 items that examine the attitudes of university students and academic staff toward individuals with disabilities. A Likert-type scale was used to score each item (1 = strongly disagree, 2 = somewhat disagree, 3 = slightly agree, 4 = somewhat agree, 5 = agree, 6 = strongly agree). Internal consistency coefficient ($\alpha > .90$).

Some items of the questionnaires are as follows: "I feel proud to have a friend who is disabled", "Sensory disabled people (blind/deaf) are unable to do most things", "I think hanging out with someone disabled is very complicated".

The adaptation process of the Questionnaire into the Turkish

For a reliable adaptation, the Questionnaire on Attitudes towards Disability in Higher Education (QAD-HE) is culturally considered to adapt to the Turkish language and culture (Çapık, Gözüm, & Aksayan, 2018; Deniz, 2007; Hambleton & Patsula, 1999).

1) First, the authors were contacted via e-mail, and permission was obtained for the adaptation of the scale to Turkish.

2) The scale structure was examined in detail in both cultures, the similarity of the scale items was confirmed, and it was decided to use the scale with this information.

3) The scale was presented to five faculty members working on individuals with disabilities, special education, and adult education in higher education to be examined in terms of its adequacy to serve the purpose. The faculty members stated that they found the scale adequate and culturally appropriate.

4) Studies were also conducted to ensure the language, construct, and criterion validity of the scale, and the reliability of the Turkish version of the scale was analyzed.

5) The scale was translated from English, the original language, into Turkish, the target language, by three academicians who are experts in the field, fluent in both languages, and have a good understanding of Turkish culture. The measurement tool was translated into Turkish by an expert group, the Turkish form was translated into English by another expert group, and the original and translated English forms were compared.

6) For the translation into English to be linguistically simple, comprehensible, clear, and concise, studies were conducted to determine the Turkish terms, definitions, and expressions that best meet the English expressions, and the Turkish form of the scale was created.

7) For clarity and comprehensibility of the final form of the scale, the opinion of a Turkish language expert was obtained, and the final form was created.

Data Analysis

Within the scope of the research, before the analysis, the dataset was examined for incorrect data entry and missing data. In line with the examination, no incorrect data entry or missing data were found in the dataset; thus, the analysis was conducted. Confirmatory factor analysis was conducted to determine the structure of the adapted Questionnaire on Attitudes toward Disability in Higher Education (QAD-HE). To determine the appropriate estimation method for confirmatory factor analysis, the univariate and multivariate normal distributions of the variables were examined (Appendix A). Because the Mardia test was greater than three, it was determined that the assumption of multivariate normal distribution was not met. Therefore, robust maximum likelihood estimation was used as the estimation method for confirmatory factor analysis. Cronbach's alpha was calculated to determine the reliability of the scores on the adapted scale.

Ethical considerations

In this study, the regulations of the Higher Education Institutions Scientific Research and Publication Ethics Directive" were followed. The regulations of the section of "Actions Against Scientific Research and Publication Ethics" were strictly followed to ensure ethical research conduct.

Ethical review board name: Akdeniz University

Chairmanship of the Social and Humanities Scientific Research Ethics Committee

Date of ethics review decision: 03.04.2023

Ethics assessment document issue number: 08/157

RESULTS

The Questionnaire on Attitudes towards Disability in Higher Education (QAD-HE) with 27 items has a two-dimensional structure. The Egalitarian Attitudes dimension includes 11 items and the Prejudiced Attitudes dimension includes 16 items. Confirmatory factor analysis was conducted to determine whether the adapted scale exhibits a two-dimensional structure in Turkish culture. During confirmatory factor analysis, model– data fit was evaluated by examining fit index values, factor loadings, and error variances. Because of the confirmatory factor analysis conducted within the scope of the research, it was determined that the factor loading of the 15th item under the prejudiced attitudes dimension was 0.03 and the error variance was 1.00. Factor loadings lower than 0.30 and error variance higher than 0.90 are accepted as indicating that the item does not make a valid measurement in the relevant dimension (Tabachnick, & Fidell, 2007, p.587, 614). When the fifteenth item is examined, it is as follows: " I don't think disabled people should receive any special treatment at university." The rationale for why this item does not work in Turkish culture is the possibility that distance education offers anyone with internet access and a suitable device the opportunity to actively participate in education from a convenient location without having to go to school. This situation has eliminated the need for many adaptations or regulations regarding access to space and education, especially for individuals with disabilities. Although distance education creates the need for different adaptations and arrangements in the education of students with disabilities, since distance education is a new situation experienced intensively for the first time throughout the country, the participants may have thought that anyone with internet access and technological devices can participate in the lessons, prepare their homework, presentations, and upload them to the system. Therefore, they may not have found it appropriate to provide special treatment to individuals with disabilities. Therefore, this item is not suitable for Turkish culture and the item was removed from the dataset and the analyses were repeated. The fit index values, factor loading values (max-min), and error variance (max-min) values obtained because of the confirmatory factor analysis are presented in Table 2.

Table 2
Confirmatory Factor Analysis Results of the Questionnaire on Attitudes toward Disability in Higher Education (QAD-HE)

								Factor Loading Values		Error Variances	
	$\chi 2$	$\chi 2$/sd	p	CFI	NFI	NNFI	RMSEA	max	min	max	min
Scale	1273,09	4,29	0,000	0,93	0,91	0,93	0,074	0,72	0,37	0,86	0,49
Recomm.		$\chi 2$/sd≤3		≥90	≥90	≥90	≤0,080	≥0,30		≤0,90	

When Table 1 is examined, it is seen that the $\chi 2/sd$ value is between 3 and 5 accordingly, it can be said that the model shows a moderate fit to the data. The CFI value is 0.93, the NFI value is 0.91 and NNFI value is 0.93. These values being above 0.90 means that the model fits the data very well. When evaluated in terms of the RMSEA index, it was found that this index was 0.074 for the model, and since this value is less than 0.080, it can be said that the model fits the data well according to this index. When the fit indices are evaluated in general, the two-dimensional model fits the data. The factor-loading values of all items on the scale are higher than 0.30. Accordingly, it can be interpreted that all items serve their purpose. The measurement model obtained because of the analysis is presented in Figure 1.

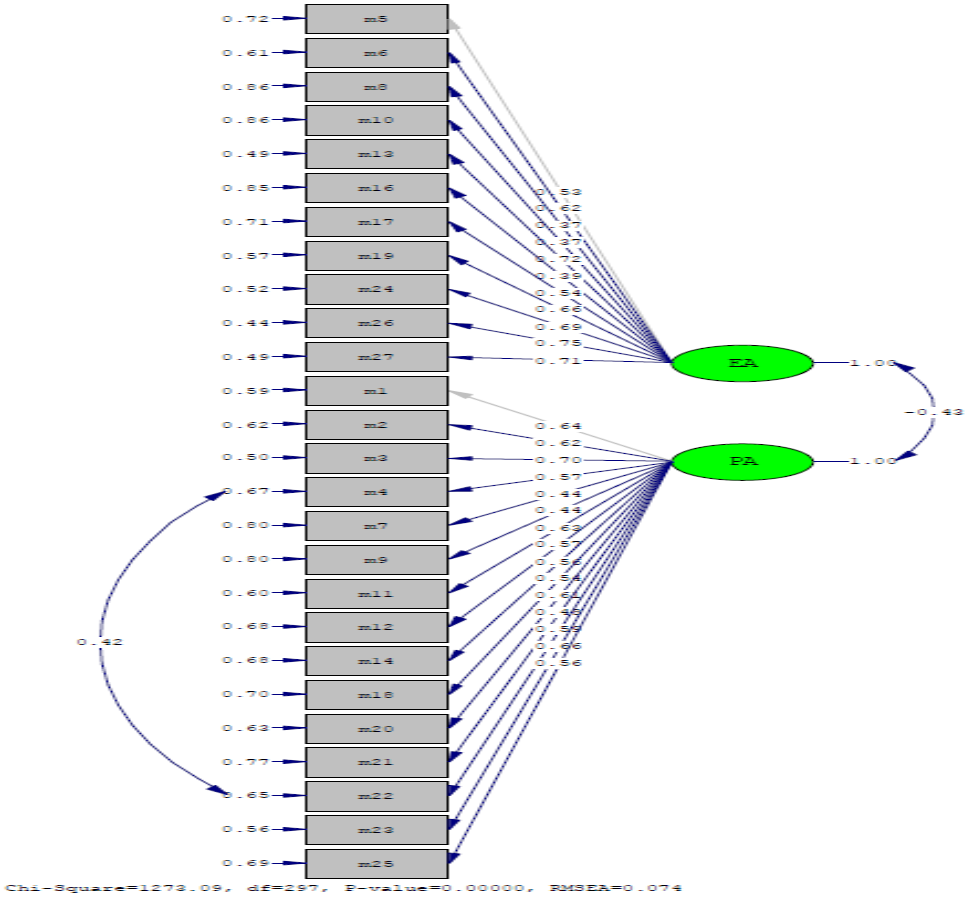

Figure 1. Model Questionnaire on Attitudes toward Disability in Higher Education

Cronbach's alpha and McDonald's omega coefficients were calculated to determine the reliability of the Attitudes toward Disability Scale scores in higher education. The results are presented in Table 3.

Table 3
Reliability of the Questionnaire on Attitudes toward Disability in Higher Education Scale Scores

Sub Dimensions	Number of Items	Cronbach Alfa	McDonald Omega
Egalitarian Attitudes	11	0,83	0,85
Prejudiced Attitudes	15	0,88	0,89

According to Table 2, the Cronbach's alpha value calculated for the egalitarian attitude dimension of the Questionnaire on Attitudes towards Disability in Higher Education was 0.83, the McDonald Omega reliability was 0.85, the Cronbach's alpha value calculated for the prejudiced attitude dimension was 0.88, and the McDonald Omega reliability was 0.89. For reliability measurements, values below 0.50 are considered low reliability, values between 0.50 and 0.80 are considered moderately reliable, and values above 0.80 are considered highly reliable (Salvucci, Walter, Conley, Fink, & Saba, 1997). Accordingly, the questionnaire scores on attitudes toward disability in higher education are highly reliable.

CONCLUSION AND DISCUSSION

The aim of this study was to adapt the Questionnaire on Attitudes towards Disability in Higher Education (QAD-HE) developed by Fuentes, Pérez-Padilla, Fuente, and Aranda (2021) into Turkish and bring it into the national literature by examining the validity and reliability of the scale. In this study, it was determined that one item did not fit the adaptation of the Questionnaire on Attitudes towards Disability in Higher Education to Turkish culture. The rationale considered within the scope of the relevant item may be that the participants did not consider the situations related to adaptations for their peers and/or students with disabilities because of reasons such as the fact that the participants continued distance education for a long time, the trainings were online and distance, and they thought that everyone was equal in accessing education (Dayı & Basık, 2022). Since all courses are online in the distance education process and course materials are systematically uploaded to the computer environment, it facilitates physical, social, and educational adaptations for students with disabilities. After removing this item from the scale, it was determined that the two-dimensional structure had the desired characteristics, and the scale scores were reliable and valid. The two dimensions included 27 items : "egalitarian attitudes" and "prejudiced attitudes".

The Cronbach's alpha value calculated for the Questionnaire on Attitudes toward Disability in Higher Education for the egalitarian attitude dimension was 0.83, the McDonald Omega reliability was 0.85, the Cronbach's alpha value calculated for the prejudiced attitude dimension was 0.88, and the McDonald Omega reliability was 0.89. For reliability measurements, values below 0.50 are considered low reliability, values between 0.50 and 0.80 are considered moderately reliable, and values above 0.80 are considered highly reliable (Salvucci et al., 1997). The scale is graded on a 6-point Likert scale as "1-Strongly disagree", "2-Somewhat disagree", "3- Undecided", "4-Somewhat agree", "5- Agree", "6-Strongly agree". Accordingly, the Questionnaire on Attitudes toward Disabilities in higher education can be used to determine attitudes toward individuals with disabilities studying or working in higher education in Turkey. Determining the attitudes of individuals on this issue is a necessary step in developing, implementing, and evaluating inclusion practices, attitude change activities, and social acceptance programs for students with disabilities.

LIMITATIONS AND RECOMONDATIONS

Because this study is a scale adaptation study, the differences regarding the demographic information of the participants, such as gender, age, and the departments they study/work in, were not examined. Therefore, in future studies, the relationships between the demographic information of university students and teachers and the scores they obtained from the Questionnaire on Attitudes towards Disability in Higher Education (QAD-HE) can be examined. A significant limitation of the study is that the data were collected from a single university and during the distance education process. The reliability and validity of the scale should be tested repeatedly when face-to-face education is introduced.

REFERENCES

Antonak, R. F. (1982). Development and psychometric analysis of the scale of attitudes toward disabled persons. *Journal of Applied Rehabilitation Counseling, 13*(2), 22–29. https://doi.org/10.1891/0047-2220.13.2.22

Brown, J.T. & Wolf, L. (2021). Legal issues and academic accommodations in higher education. In *Handbook of Autism Spectrum Disorder and the Law*; Volkmar, F.R., Loftin, R., Westphal, A., Woodbury-Smith, M., Eds. (pp. 359–372) Springer: Berlin/Heidelberg, Germany.

Çapık, C., Gözüm, S. & Aksayan, S. (2018). Kültürlerarası ölçek uyarlama aşamaları, dil ve kültür uyarlaması: güncellenmiş rehber [Intercultural Scale Adaptation Stages, Language and Culture Adaptation: Updated Guideline]. *Florence Nightingale Journal of Nursing, 26*(3), 199-210 Retrieved from https://dergipark.org.tr/tr/pub/fnjn/issue/39968/397481

Dayı, E. & Basık, R. (2022). Özel gereksinimli üniversite öğrencilerinin uzaktan eğitim süreci ve engelli öğrenci birimlerinin iş birliği durumunun incelenmesi [Examining of Distance Education Process of University Students with Special Needs and Cooperation of Disabled Student Units] *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi, 42*(2) , 1709-1749 . https://doi.org/10.17152/gefad.994613

Deniz, Z. (2007). Psikolojik ölçme aracı uyarlama [The Adaptation of Psychological Scales] *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi, 40* (1), 1-16. https://doi.org/10.1501/Egifak_0000000180

Fajardo, S. (2017). Inclusive higher education in some Latin American countries: Progress, obstacles, and challenges. *Revista Latinoamericana de Educación Inclusiva, 11*(1), 171–197. https://doi.org/10.4067/S0718-73782017000100011

Findler, L., Vilchinsky, N., & Werner, S. (2007). The multidimensional attitudes scale toward persons with disabilities (MAS): *Construction and Validation. Rehabilitation Counseling Bulletin, 50*(3), 166–176. https://doi.org/10.1177/00343552070500030401

Freer, J. (2018). The educators' attitudes toward disability scale (EADS): A pilot study. *International Journal of Disability, Development and Education, 65*(6):581–598. https://doi.org/10.1080/1034912X.2018.1426098

Fuentes, V., Pérez-Padilla, J., De La Fuente, Y. & Aranda, M. (2022). Creation and validation of the questionnaire on attitudes towards disability in higher education (QAD-HE) in Latin America, *Higher Education Research & Development*, *41*(5): 1514-1527. https://doi.org/10.1080/07294360.2021.1927997

Garabal-Barbeira, J. (2015). Actitudes de docentes y estudiantes hacia la discapacidad en la Universidad de la Coruña [Attitudes of teachers and students towards disability at the University of La Coruña]. *Revista de Estudios e Investigación en Psicología y Educación*, *11*, 015-019. https://doi.org/10.17979/reipe.2015.0.11.220

Hambleton, R. K. & Patsula, L. (1999). Increasing the validity of adapted tests: Myths to be avoided and guidelines for improving test adaptation practices. *Journal of Applied Testing Technology. 1*(1), 1-30.

Kauffman, J. M. (2023). Anastasiou, D.; Felder, M.; Lopes, J.; Hallenbeck, B.A.; Hornby, G.; Ahrbeck, B. Trends and issues involving disabilities in higher education. *Trends Higher Education., 2*, 1–15. https://doi.org/10.3390/higheredu2010001

Köstereliоğlu, İ. (2013). Engelli bireylerin eğitilmesine yönelik tutum ölçeğinin geliştirilmesi [Development of an altitude scale for the training of individuals with disabilities]. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi (KEFAD), 14(3):*211–226. Retrieved from https://dergipark.org.tr/tr/pub/kefad/issue/59470/854580

Moriña, A. (2017) Inclusive education in higher education: challenges and opportunities, *European Journal of Special Needs Education, (32):*1, 3-17, https://doi.org/10.1080/08856257.2016.1254964

Pace, C. R., & Kuh, G. D. (1998). *College student experiences questionnaire* (4th ed.). Indiana University Center for Postsecondary Research and Planning.

Salvucci, S., Walter, E., Conley, V., Fink, S., & Saba, M. (1997*). Measurement error studies at the National Center for Education Statistics (NCES).* Washington D. C.: U. S. Department of Education.

Tabachnick, B. G. & Fidell, L. S. (2007). *Using multivariate statistics*. (Fifth Edition). Boston, MA: Pearson.

Yaralı, D. (2015). Özel gereksinimli bireylere yönelik bir tutum ölçeğinin geliştirilmesi. [Developing of an attitude scale towards individuals with special needs] *E-Kafkas Eğitim*

Araştırmaları Dergisi, 2(3).,1-11. Retrieved from https://dergipark.org.tr/tr/pub/kafkasegt/issue/19197/204104

YÖK, (2020). https://engelsiz.yok.gov.tr/Sayfalar/Haberler/2020/engelsiz-erisim-engelsiz-egitim.aspx#:~:text=H%C3%A2lihaz%C4%B1rda%20Y%C3%96KS%C4%B0S%20verilerine%20g%C3%B6re%2051.647,u%20a%C3%A7%C4%B1k%C3%B6%C4%9Fretim%20programlar%C4%B1nda%20yer%20almaktad%C4%B1r (accessed on 11 July 2023)

Yuker, H. E., Block, J. R., & Young, J. H. (1966). *The measurement of attitude toward disabled persons.* Albertson, NY., Human Resources Center.

Data Availability Declaration

Data Availability Upon Formal Request:

While the primary datasets utilized in this study are not publicly accessible due to certain constraints, they are available to researchers upon a formal request. The authors have emphasized maintaining the integrity of the data and its analytical rigor. To access the datasets or seek further clarifications, kindly reach out to the corresponding author. Our aim is to foster collaborative academic efforts while upholding the highest standards of research integrity.

Author Contributions

The sole author of this research, Adile Emel SARDOHAN YILDIRIM, was responsible for the conceptualization, methodology formulation, data collection, analysis, and interpretation. Furthermore, Adile Emel SARDOHAN YILDIRIM took charge of drafting the initial manuscript, revising it critically for vital intellectual content, and finalizing it for publication. The author has read and approved the final manuscript and takes full accountability for the accuracy and integrity of the work presented.

Author(s)' statements on ethics and conflict of interest
Ethics statement: I hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. I take full responsibility for the content of the paper in case of dispute.
Statement of interest: No
Funding: Not applicable.
Acknowledgements: Not applicable.

Biographical notes:

Adile Emel SARDOHAN YILDIRIM[1]: She completed her undergraduate, graduate and doctoral studies in special education. Her research areas special needs education, teacher training, inclusive education, children with multiple disabilities. She is working as an assistant professor at Akdeniz University.

Appendix-A. Normality Results

Variable	min	max	skew	c.r.	kurtosis	c.r.
m25	1,000	6,000	2,449	24,613	5,759	28,941
m23	1,000	6,000	,942	9,464	,163	,818
m22	1,000	6,000	,565	5,682	-,804	-4,041
m21	1,000	6,000	,151	1,520	-1,230	-6,182
m20	1,000	6,000	1,970	19,803	3,742	18,801
m18	1,000	6,000	1,654	16,620	2,286	11,485
m15	1,000	6,000	,374	3,756	-,840	-4,221
m14	1,000	6,000	1,154	11,598	,753	3,785
m12	1,000	6,000	,856	8,602	-,542	-2,723
m11	1,000	6,000	2,007	20,170	3,659	18,384
m9	1,000	6,000	,939	9,440	-,297	-1,492
m7	1,000	6,000	1,804	18,128	1,957	9,832
m4	1,000	6,000	,853	8,571	-,471	-2,366
m3	1,000	6,000	2,579	25,920	6,371	32,015
m2	1,000	6,000	2,562	25,748	6,491	32,616
m1	1,000	6,000	,946	9,503	-,085	-,428
m5	1,000	6,000	-1,684	-16,920	2,224	11,176
m6	1,000	6,000	-2,152	-21,627	4,290	21,558
m8	1,000	6,000	-,739	-7,424	-,543	-2,727
m10	1,000	6,000	-1,659	-16,670	1,660	8,341
m13	1,000	6,000	-2,889	-29,035	8,367	42,043
m16	1,000	6,000	-,512	-5,149	-,701	-3,525
m17	1,000	6,000	-1,318	-13,241	1,139	5,725
m19	1,000	6,000	-1,191	-11,972	,974	4,896
m24	1,000	6,000	-2,147	-21,579	4,226	21,237
m26	1,000	6,000	-2,008	-20,176	4,097	20,587
m27	1,000	6,000	-2,786	-27,997	7,521	37,794
Multivariate					**296,647**	**92,268**