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Polish adaptation of the Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults (GIDYQ-AA-PL)

Polska Adaptacja Kwestionariusza Identyfikacji i Dysforii Płciowej u Młodzieży i Dorosłych (GIDYQ-AA-PL)

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Abstract

Introduction and objective: The aim of the study was to develop a tool to measure the level of gender dysphoria in adolescents and adults, as well as to assess its psychometric properties. **Materials and methods:** The study attempted a Polish adaptation of the questionnaire to assess dysphoria and gender identification in adolescents and adults (Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults, GIDYQ-AA). It involved 1,780 respondents aged 11 to 73 years, diverse in terms of sex assigned at birth and gender identity. The questionnaire used in the adaptation study consisted of three parts: statistical data, the Hospital Anxiety and Depression Scale (HADS) and the GIDYQ-AA questionnaire translated into Polish. **Results:** The analysis showed that the structure of the tool is single-factor. Items 4 and 13 of the original tool were removed from the Polish version due to poor correlation with the scale and low factor loadings of these items. The structure equivalence analysis showed that developing general standards could lead to flattening of conclusions from individual measurements. It was decided to create norms taking into account sex and age. The obtained tool has a reliability of 0.97 CR and good validity measured as the correlation coefficient between the level of dysphoria and the level of anxiety, depression and irritability. **Conclusions:** The adaptation and analysis gave rise to a 25-item tool with high reliability and validity. Unlike the original tool, in-depth statistical analyses allowed for the creation of detailed dysphoria norms for age and sex assigned at birth. The presented questionnaire is a valuable contribution to the system of Polish standards for diagnosing people struggling with gender nonconformity.

Keywords: gender dysphoria, gender identification, gender nonconformity, diagnostic questionnaire, adaptation of the questionnaire

Streszczenie

Cel pracy: Celem badania było stworzenie polskiego narzędzia mierzącego poziom dysforii płciowej u nastolatków i osób dorosłych, ocena jego własności psychometrycznych i opracowanie norm. **Materiał i metoda:** Badanie miało charakter adaptacji kanadyjskiego kwestionariusza badającego dysforię i identyfikację płciową u młodzieży i osób dorosłych (Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults, GIDYQ-AA) na język polski. W badaniu adaptacyjnym wzięło udział 1780 osób w przedziale wiekowym od 11 do 73 lat, zróżnicowanych pod względem płci przypisanej przy urodzeniu i tożsamości płciowej. Kwestionariusz użyty do badania adaptacyjnego składał się z trzech części: metryczki statystycznej, kwestionariusza Szpitalna Skala Lęku, Depresji i Rozdrażnienia (Hospital Anxiety and Depression Scale, HADS) oraz przetłumaczonego na język polski kwestionariusza GIDYQ-AA. **Wyniki:** Analiza statystyczna wykazała, że struktura narzędzia jest jednoczynnikowa. Z polskiej adaptacji usunięto pozycje 4 i 13 narzędzia oryginalnego z uwagi na słabą korelację ze skalą i niskie ładunki czynnikowe tychże. Analiza równoważności struktury wykazała, że utworzenie norm ogólnych mogłoby prowadzić do spłaszczenia wniosków z indywidualnych pomiarów. Postanowiono utworzyć normy z uwzględnieniem płci i wieku. Uzyskane narzędzie charakteryzuje się rzetelnością na poziomie 0,97 CR i dobrą trafnością mierzoną jako współczynnik korelacji pomiędzy poziomem dysforii a poziomem lęku, depresji i rozdrażnienia. **Wnioski:**

Przeprowadzona adaptacja i analiza statystyczna zakończyły się stworzeniem narzędzia o wysokiej rzetelności i trafności, liczącego 25 pozycji. W odróżnieniu od pierwotnego narzędzia pogłębione analizy statystyczne pozwoliły na stworzenie szczegółowych norm dysforii z podziałem na wiek i płeć przypisaną przy urodzeniu osób badanych. Prezentowany kwestionariusz stanowi wartościowy wkład w system polskich standardów diagnostyki osób zmagających się z niezgodnością płciową.

Słowa kluczowe: dysforia płciowa, identyfikacja płciowa, niezgodność płciowa, kwestionariusz diagnostyczny, adaptacja kwestionariusza

INTRODUCTION

Over the past 10 years, the number of gender-nonconforming persons presenting to mental health clinics has increased significantly (Pang et al., 2020). The reasons for this phenomenon can be attributed to both growing public awareness as well as increasingly effective diagnosis and increased attentiveness of counselling and mental health personnel (Pang et al., 2020). According to the International Classification of Diseases (ICD-11), gender incongruence in adolescence and adulthood is characterised by a marked and persistent discrepancy between one's birth-assigned sex and experienced gender (World Health Organization, 2019). Gender incongruence often leads to a desire to transition in order to live and be accepted as a person of the experienced gender. Medical transition occurs through hormonal, surgical or other treatments. The aim of these procedures is to align the person's body with the psychologically experienced gender as closely as desirable and possible. The diagnosis of gender incongruence cannot be assigned prior the onset of puberty. Gender variant behaviour and preferences alone are not a basis for assigning the diagnosis (World Health Organization, 2019).

Based on the US Diagnostic and Statistical Manual of Mental Disorders (DSM-5) classification, gender dysphoria (GD) in adolescents and adults is defined as "A. A marked incongruence between one's experienced/expressed gender and assigned gender, of at least 6 months' duration, as manifested by at least two of the following:

1. a marked incongruence between one's experienced/expressed gender and primary and/or secondary sex characteristics (or, in young adolescents, the anticipated secondary sex characteristics);
2. a strong desire to be rid of one's primary and/or secondary sex characteristics because of a marked incongruence with one's experienced/expressed gender (or, in young adolescents, a desire to prevent the development of the anticipated secondary sex characteristics);
3. a strong desire for the primary and/or secondary sex characteristics of the other gender;
4. a strong desire to be of the other gender (or some alternative gender different from one's assigned gender);
5. a strong desire to be treated as the other gender (or some alternative gender different from one's assigned gender);
6. a strong conviction that one has the typical feelings and reactions of the other gender (or some alternative gender different from one's assigned gender)".

Criterion B, which is also required to be met during the diagnostic process, states that "the condition is associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning" (American Psychiatric Association, 2022). To date, no satisfactory questionnaire has been available on the Polish market that would be a reliable and valid tool for investigating both gender incongruence and dysphoria. In the diagnostic processes, clinicians most often rely on the Psychological Gender Inventory and additional clinical scales of the Minnesota Multidimensional Personality Inventory, which, however, are not intended for the diagnosis of gender incongruence. The available tools do not seem to be sufficient in the face of the fast-paced cultural changes introduced by the latest ICD-11 classification of diseases.

In 2007, an article by Canadian researchers was published in *The Journal of Sex Research*, presenting a 27-item tool to assess gender dysphoria in adolescents and adults (Deogracias et al., 2007). The items used in the questionnaire were closely based on the ICD-11 criteria for gender incongruence. The survey was repeated for re-validation in 2009 (Singh et al., 2010) and successfully adapted into Chinese by a team led by Yuanyuan Wang in 2021 (Wang et al., 2021).

AIM OF THE STUDY

The aim of the present study was to assess the psychometric properties of and develop norms for the Polish adaptation of the questionnaire to measure gender dysphoria in adolescents and adults. The attempt to create a Polish tool for the diagnosis of gender dysphoria is a response to an immediate diagnostic need in this area. The resulting tool will have important applications both in individual diagnosis and in further research.

MATERIALS AND METHODS

Adaptation was performed on the existing Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults (GIDYQ-AA), which was developed by Deogracias et al. in 2007 based on the ICD-11 criteria. The original tool used for adaptation consisted of 27 items rated on a five-point Likert scale to assess the severity of gender dysphoria. Evaluation of the original GIDYQ-AA questionnaire among students ($N = 389$) and patients with gender identity disorders ($N = 73$) showed high reliability (Cronbach's α 0.97)

	Adolescents		Adults	
	Males (<i>n</i> = 138)	Females (<i>n</i> = 578)	Males (<i>n</i> = 303)	Females (<i>n</i> = 759)
Age				
<i>M</i>	16.54	15.99	28.57	26.52
<i>SD</i>	1.41	1.47	8.99	7.95
Min–Max	13–18	11–18	19–73	19–57
Gender identity				
Gender incongruence	10.9%	25.1%	6.9%	7.0%
Non-binarity	13.8%	19.0%	7.9%	10.7%
Gender conformity	75.4%	55.9%	85.1%	82.4%
Education				
Primary	77.5%	77.5%	1.3%	1.2%
Middle	6.5%	5.9%	3.0%	2.8%
Basic vocational	1.4%	2.9%	2.0%	2.8%
Secondary technical	5.1%	3.3%	20.1%	14.5%
General secondary	9.4%	10.2%	34.7%	46.7%
Bachelor's degree	-	-	10.2%	12.9%
Higher engineering	-	-	4.3%	2.4%
Master's degree	-	-	22.4%	15.8%
PhD or higher	-	-	2.0%	0.9%
Place of residence				
≤100,000 inhabitants	71.0%	64.2%	39.9%	45.8%
>100,000 inhabitants	29.0%	35.6%	60.1%	54.1%

Tab. 1. Distribution of demographic variables and gender identity depending on age and sex assigned at birth

and differential validity, as patients with gender incongruence showed significantly higher severity of gender dysphoria than heterosexual or non-heterosexual university students. Using a cut-off point of 3.00, the sensitivity was found to be 90.4% for patients with gender incongruence and the specificity was 99.7% for the control group. Four versions of GIDYQ-AA were developed: for adolescent boys and girls, as well as for adult men and women (Deogracias et al., 2007). After obtaining permission from the authors of the original tool to adapt and modify the questionnaire, the adaptation process was initiated. The individual items of the original questionnaire were translated from English into Polish as accurately as possible, in such a way as to convey the logical sense of the individual items. The translation was done by an experienced psychologist-diagnostician involved in the diagnosis of gender dysphoria and gender incongruence. There were four versions of the questionnaire, differing in terms of birth-assigned sex and the age cohort, that were translated separately. The Polish translation was validated to ensure that the psychometric properties of the original tool were preserved, then norms birth-assigned sex and age were set for the Polish population. This voluntary and anonymous survey was conducted online, using a dedicated website. Respondents gave their written consent to participate in the study by ticking an appropriate box on the informed consent form.

The study sample consisted of general population volunteers (*N* = 1,780). The participants were invited through online platforms, mainly through social media. The study

group varied significantly in terms of demographics. The age of the subjects ranged from 11 to 73 years (*M* = 22.69; *SD* = 0.2). The respondents were classified into groups by birth-assigned sex and age cohort, respectively. In each group, declarative gender identity was assessed: gender incongruence, gender non-binary, gender congruence. In the course of the analyses, the initial study sample was reduced from 1,780 to 1,768 due to the failure of 12 individuals to complete at least 80% of the questionnaire. Tab. 1 presents the distribution of age, education, place of residence and gender identity of the surveyed adolescents and adults by sex.

Based on the results presented in Tab. 1, it was found that the distributions of education among adolescents and adults were similar and corresponded to the average age of the samples. The majority of adolescent respondents were from smaller towns and cities (up to 100,000 inhabitants), while most adult participants were residents of medium-sized and larger cities. Regardless of the sample studied, more than 50% of respondents showed a gender identity match with birth-assigned sex. The greatest gender incongruence was observed among girls under 18 years of age, among whom about 25% and 20% declared being of the opposite sex and nonbinary, respectively.

The Qualtrics software was used to create a questionnaire consisting of three parts: demographics, the Hospital Anxiety and Depression Scale (HADS) and the translated GIDYQ-AA tool. The demographic part included questions on statistical data such as sex assigned at birth

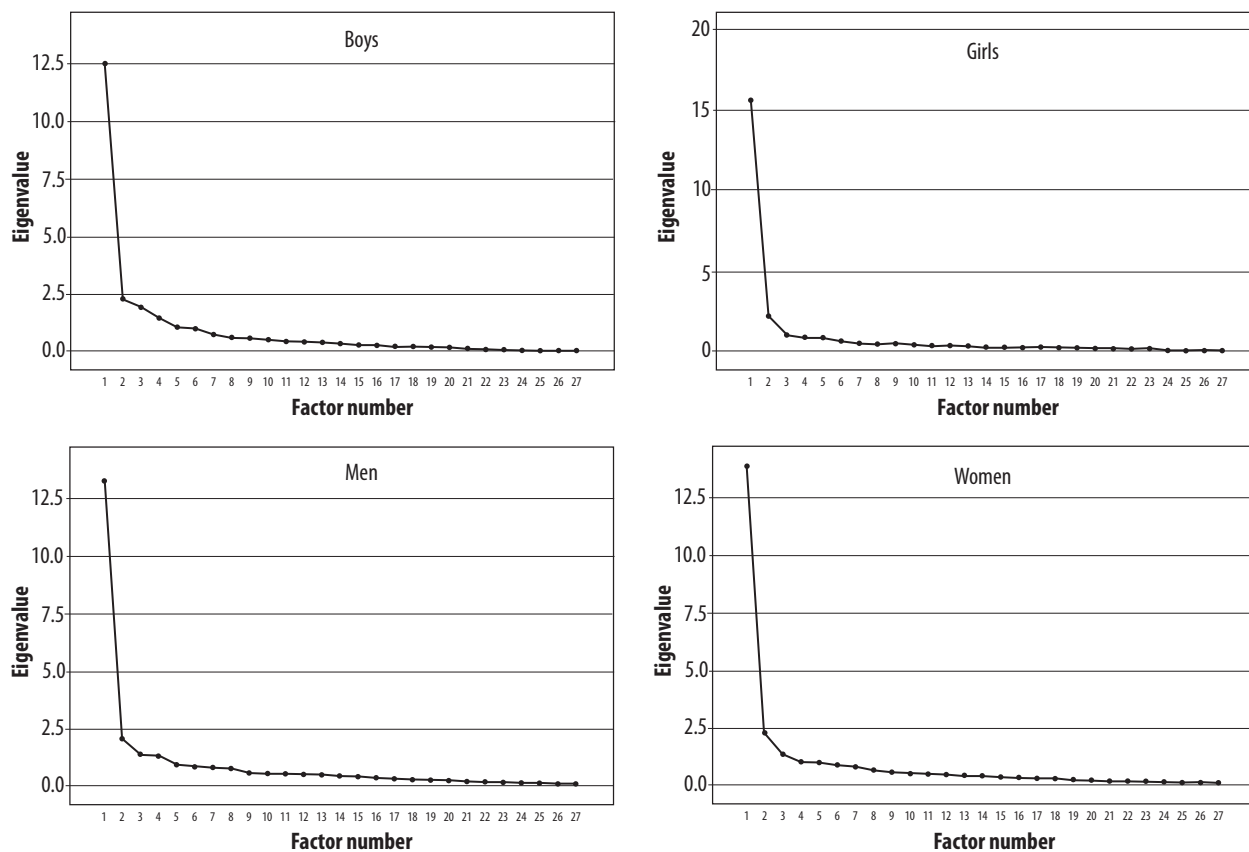


Fig. 1. Scree plots by age and birth-assigned sex assigned

(male or female), gender identity (male, female, non-binary, other), psychosexual orientation (heterosexual, bisexual, homosexual, pansexual, asexual), age, education and size of place of residence. Comparison of the declared birth-assigned sex and gender identity allowed for the assessment of gender incongruence or non-binarity. HADS was used to measure perceived anxiety, depression and irritability. This scale consists of 16 items rated on a four-point Likert scale. The HADS tool has high measurement reliability (Cronbach's α was 0.75–0.70 for the HADS-A and 0.77–0.76 for the HADS-D) and high accuracy compared to other tools measuring anxiety and depressive symptoms (Mihalca and Pilecka, 2015). The results obtained using the HADS questionnaire were used to subsequently validate the parametric properties of the adapted questionnaire. The translated GIDYQ-AA questionnaire measured the level of gender dysphoria and consisted of 27 items rated on a five-point

Likert scale. The number of items and the type of scale in the adapted questionnaire were consistent with the original tool.

The collected results were analysed statistically using IBM SPSS Statistics 28 and AMOS 28 software. Construct structure analysis, factor analysis, structural equivalence analysis, assessment of reliability and validity of the tool were conducted and stanine norms by sex assigned at birth were extracted for adults and adolescents.

RESULTS

Statistical analyses were conducted in order to adapt the gender dysphoria questionnaire (Deogracias et al., 2007). In the first step, the sample of 1,780 respondents was reduced to 1,768, limiting samples to those containing responses to at least 80% of the questionnaire items.

Model	Items	N	Goodness-of-fit					
			χ^2/df	RMSEA	CFI	SRMR	AVE	CR
Preliminary	27	1768	29.90	0.128 [0.126; 0.130]	0.79	0.07	0.54	0.97
Final	25	1768	17.64	0.097 [0.095; 0.099]	0.90	0.05	0.58	0.97

AVE – average variance extracted; CFI – comparative fit index; CR – composite reliability; RMSEA – root-mean-square error of approximation; SRMR – standardised root mean squared residual.

Tab. 2. Indicators of theoretical fit of the preliminary and final model for the obtained data

It was initially found, based on factor analysis using the principal axis method under the assumption of a correlated factor structure, that the structure of the construct was single-factor. Additionally, scree plots were checked for each study sample (Fig. 1).

Very good measures of sample fit were obtained, the correlation matrix was close to zero (<0.00001), the KMO measure = 0.97 (Kaiser–Meyer–Olkin measure), and the Bartlett’s Sphericity Test was statistically significant $\chi^2 = 34954.42$; $df = 351$; $p < 0.001$. The factor matrix showed a strong correlation of items with the primary factor ($r > 0.40$), with the exception of items 4 and 13 of the original tool, whose correlation with the primary factor was $r < 0.20$. It was found from the scree plots (Fig. 1) that the structure was single-factor regardless of age and sex. The main factor in the whole sample explained 55.71% of data variance, and the eigenvalue was 15.04. In the next step, a confirmatory factor analysis was conducted for the entire tool using AMOS 28, where the fit of the structures was compared with the total number of items and after discarding items 4 and 13 due to their weaker correlation with the overall score. The results are shown in Tab. 2.

The presented models (Tab. 2) confirmed that the factor structure based on the total number of items mismatched the data, whereas after eliminating items 4 and 13, it proved to be a good fit in the case of the comparative fit index (CFI) (≥ 0.90) and standardised root mean squared residual (SRMR) (≤ 0.08). Additionally, a satisfactory RMSEA (root-mean-square error of approximation) was obtained (≤ 0.10), and the assumptions of average variance extracted (AVE) ≥ 0.50 and composite reliability (CR) ≥ 0.70 were met. Only the standardised χ^2 did not achieve a satisfactory value < 5 . This means that the factor structure obtained for the 25 items was a satisfactory fit to the data for the full sample. Next, factor structures were compared among adolescents and adults by sex assigned at birth. These were exploratory analyses as the samples obtained showed a significant disparity of observations, which made it impossible to confirm full equivalence. Tab. 3 shows factor loadings for the overall structure and for the structures in individual samples of adolescent and adult females and males, as well as measures of construct, metric and scalar equivalence (Lubiewska and Głogowska, 2018).

An analysis of the values of the individual factor equivalence levels (Tab. 3) showed that the delta of change for SRMR was too high, which suggested slightly different perceptions of the items at the construct level across the samples. The other indices had satisfactory levels of change, with AVE and CR suggesting good internal validity and construct reliability in each sample. Based on the observable factor loadings, item 1 was found to be more strongly correlated with gender dysphoria in adolescent girls ≤ 18 years of age, while item 5 showed a weaker correlation with the dysphoria construct in the adult male sample. Item 7 was more strongly correlated with perceived gender dysphoria among adolescents compared to observable loads in the adult

sample. Item 11 was more strongly correlated with dysphoria in the adult female sample than in the other samples. Items 14 and 15 showed a weaker correlation with the dysphoria construct among adolescent boys ≤ 18 years compared to the other samples. Additionally, item 19 was more strongly correlated with gender dysphoria in the female sample, regardless of age, compared to the male and adolescent boy samples. The results suggested that the creation of generic norms could lead to flattening of conclusions drawn based on raw scores for individuals by their birth-assigned sex and age. It was therefore decided to reject the attempt to create generic norms and create norms based on birth-assigned sex and age.

Tab. 4 presents the distributions of normality for individual samples of adolescents and adults by sex. The results showed non-normal distributions of the variables, which indicated the need for a non-linear transformation of the distributions in order to normalise them (Hornowska, 2022).

Regardless of the sample tested (Tab. 4), none of the respondents achieved the maximum level of dysphoria, understood as the lowest possible score (25). The largest and the smallest score range were observed in the sample of female and male adolescents, respectively, confirming the need for separate norms for all samples. By normalising the transformed distributions, it was found that only stanines allowed all levels of dysphoria severity to be presented from the highest (first stanine) to the lowest (ninth stanine) based on raw scores. This resulted in a distribution of total raw scores corresponding to each stanine in the study samples, as shown in Tab. 5.

An analysis of the distribution of raw scores within norms (Tab. 5) found that adolescent girls were characterised by a higher variance in gender dysphoria scores compared to the other samples. Assuming that, based on the original tool, the cut-off point indicative of dysphoria is lower than the mean score of 3.00 on the five-point scale, it was noted that only adolescent girls ≤ 18 years were characterised by the presence of dysphoria in the first three stanines compared to the two first stanines in the other samples.

It was found that the norms presented in Tab. 5 differentiated well between dysphoria levels in each sample. The analyses of variance for severe, moderate and mild gender dysphoria confirmed statistically significant differences between all groups at $p < 0.001$ after adopting the Bonferroni correction for multiple comparisons (Tab. 6).

Tab. 7 shows the correlations between gender dysphoria and depression, anxiety and irritability by the standardised level of dysphoria and gender identity. Due to the smaller samples of adolescent boys and men, analyses of validity by sex and age were not possible (due to gaps in some observations).

The analysis of validity (Tab. 7) confirmed the expected effects. It was found that higher levels of gender dysphoria (low score) were significantly correlated with increased anxiety, depression and irritability. Additional analyses for samples dependent on gender identity and normalised dysphoria

Item	General model (n = 1,768)	Separate structures			
		Male adolescents (n = 138)	Female adolescents (n = 578)	Male adults (n = 303)	Female adults (n = 759)
1	0.69	0.69	0.80	0.55	0.62
2	0.75	0.79	0.68	0.67	0.78
3	0.80	0.73	0.84	0.70	0.76
5	0.74	0.78	0.83	0.56	0.69
6	0.72	0.64	0.75	0.69	0.67
7	0.65	0.68	0.74	0.52	0.52
8	0.82	0.86	0.85	0.78	0.73
9	0.68	0.69	0.57	0.70	0.71
10	0.91	0.92	0.92	0.93	0.87
11	0.60	0.54	0.47	0.43	0.71
12	0.89	0.82	0.90	0.87	0.85
14	0.60	0.26	0.59	0.56	0.62
15	0.68	0.48	0.67	0.73	0.65
16	0.86	0.85	0.88	0.86	0.79
17	0.80	0.69	0.79	0.78	0.77
18	0.79	0.54	0.82	0.66	0.76
19	0.78	0.39	0.83	0.59	0.76
20	0.87	0.85	0.84	0.89	0.84
21	0.85	0.86	0.86	0.91	0.78
22	0.85	0.77	0.85	0.82	0.81
23	0.46	0.36	0.43	0.50	0.43
24	0.53	0.48	0.44	0.46	0.57
25	0.88	0.87	0.89	0.91	0.81
26	0.87	0.87	0.87	0.89	0.81
27	0.77	0.70	0.84	0.67	0.70
Equivalence analysis		Unbiased	Construct	Metric	Scalar
χ^2/df	-	6.12	6.31	6.50	6.60
RMSEA	-	0.054 [0.053;0.055]	0.055 [0.054;0.056]	0.056 [0.055;0.057]	0.056 [0.055;0.058]
CFI	-	0.87	0.86	0.84	0.84
SRMR	-	0.07	0.11	0.10	0.13
AVE	0.58	0.50	0.59	0.52	0.53
CR	0.97	0.96	0.97	0.96	0.96

AVE – average variance extracted; **CFI** – comparative fit index; **CR** – composite reliability; **RMSEA** – root-mean-square error of approximation; **SRMR** – standardised root mean squared residual.
Outlier items with factor loadings in individual samples are marked in bold.

Tab. 3. Factor loadings of items in individual samples along with structure equivalence analysis

Sample	Summary score				Averaged score				S-W	df	p
	M	SD	Min	Max	M	SD	Min	Max			
Girls (n = 578)	87.78	27.60	33.00	125.00	3.51	1.10	1.32	5.00	0.914	575	<0.001
Boys (n = 138)	102.69	20.85	46.00	125.00	4.11	0.83	1.84	5.00	0.874	136	<0.001
Women (n = 759)	106.56	20.26	37.00	125.00	4.26	0.81	1.48	5.00	0.805	754	<0.001
Men (n = 303)	109.78	18.99	42.00	125.00	4.39	0.76	1.68	5.00	0.728	301	<0.001

S-W – Shapiro–Wilk test.

Tab. 4. Analysis of the normality of the distribution of gender dysphoria depending on the investigated sample

Interpretation	Stanine	Adolescents ≤18 years		Adults	
		Girls	Boys	Women	Men
Severe gender dysphoria	1	33–43	46–57	37–56	42–58
	2	44–48	58–67	58–74	59–79
	3	49–59	68–86	75–96	81–104
Moderate gender dysphoria	4	60–79	87–104	97–111	105–114
	5	80–102	104–113	112–117	115–119
	6	103–115	114–120	118–121	120–121
Mild gender dysphoria	7	116–120	121–123	122–123	122–123
	8	121–124	124	124	124
	9	125	125	125	125

Tab. 5. Normalised distributions for gender dysphoria summary raw scores by sex and age

Sample	Level of dysphoria			F	df1,df2	p	η²
	Severe	Moderate	Low				
Girls (n = 578)	1.97 (0.24)	3.57 (0.70)	4.82 (0.12)	942.23	572.574	<0.001	0.77
Women (n = 759)	2.95 (0.60)	4.53 (0.26)	4.95 (0.04)	1673.10	751.753	<0.001	0.82
Boys (n = 138)	2.77 (0.45)	4.32 (0.39)	4.92 (0.07)	287.99	133.136	<0.001	0.81
Men (n = 303)	3.20 (0.77)	4.64 (0.17)	4.95 (0.05)	436.74	298.300	<0.001	0.75

Tab. 6. Differences in the average level of dysphoria depending on sex and age for the adopted norms

Variable	Total (n = 1,768)	Severe dysphoria			Moderate dysphoria			Mild dysphoria		
		GI (n = 171)	NB (n = 148)	GT (n = 79)	GI (n = 61)	NB (n = 85)	GT (n = 822)	GI (n = 0)	NB (n = 0)	GT (n = 400)
Anxiety	-0.29***	-0.12	-0.27***	-0.12	0.14	-0.02	-0.36***	-	-	-0.29***
Depression	-0.22***	-0.15^	-0.17*	-0.14	-0.01	0.16	-0.25***	-	-	-0.24***
Irritability	-0.21***	-0.21**	-0.24**	-0.11	-0.05	-0.22*	-0.28***	-	-	-0.26***

GI – gender incongruence; NB – non-binary; GC – gender conformity.
 ^ 0.05 > p < 0.06; * p < 0.05; ** p < 0.01; *** p < 0.001.

Tab. 7. The relationship between gender dysphoria and anxiety, depression and irritability depending on the standardised level of dysphoria and gender identity

level confirmed that all correlations were statistically significant in non-binary respondents with high dysphoria levels, while no correlation was found between gender dysphoria and anxiety and depression among non-binary respondents with scores indicating moderate dysphoria levels. There was a significant correlation with irritability among individuals with incongruent identity and higher levels of dysphoria, and a marginal correlation ($p = 0.052$) with depression, while no significant relationships were found among respondents with incongruent identity and moderate levels of dysphoria. Inverted effects were observed among congruence identity individuals. There was no relationship with anxiety or depression among respondents with high levels of dysphoria, whereas a relationship was found for those with moderate-to-severe gender dysphoria. The results confirmed that individuals with high levels of gender dysphoria may experience stronger anxiety and depressive symptoms or irritability if diagnosed with incongruence between experienced gender identity and birth-assigned sex or when they identify as non-binary. This effect, on the other hand, was not present in those with known gender conformity.

The observed distribution of gender dysphoria by gender identity, with a cut-off point of 3.00 for the original scale,

further confirms that dysphoria severity differentiates well between identity congruence and identity incongruence/non-binary individuals (Fig. 2).

DISCUSSION

The aim of this study was to translate and adapt the Canadian tool for assessing gender dysphoria in adolescents and adults into the Polish language and context, and to evaluate the psychometric properties of the resulting adaptation. A larger and more diverse group of individuals participated in the study than in the original Canadian tool study. It is noteworthy that the study with such a broad sample not only revealed the potential usefulness of the questionnaire in the diagnosis of non-cisnormative individuals, but also opened up the field for further exploration of the topic related to individual differences in gender self-perception and perceived dysphoria across different age groups and people with different birth-assigned sex. It was found that general norms did not allow for an effective analysis of dysphoria levels based on individual results obtained by a single person. The research sample obtained in the adaptation study allowed for developing norms by sex and age, which is an

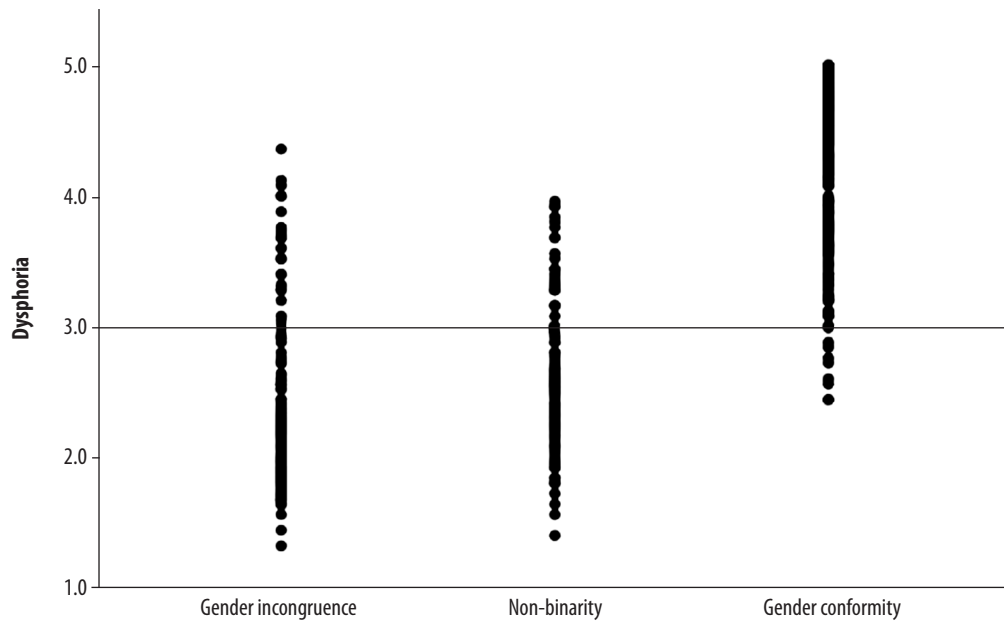


Fig. 2. Distribution of results depending on gender identity

additional contribution of the presented study with respect to the study of the original tool.

The differences in construct reliability of the individual items found in the study indicate that, depending on the age and birth-assigned sex, significant differences can be observed in the understanding of the individual concepts in the questionnaire and the concept of dysphoria in general. Factor analysis identified two items (4 and 13) of the original tool as being poorly correlated with the total score in the adaptation. Removing these two items from the final form of the questionnaire not only did not impoverish the tool itself, but also allowed it to be more valid and reliable compared to the original instrument.

CONCLUSIONS

The results obtained indicate high reliability and validity of the Polish version of the GIDYQ-AA questionnaire and the univariate structure of the tool. The questionnaire presented in this study is a noteworthy contribution to the system of Polish diagnostic standards for persons struggling with gender incongruence.

The extensive research material allows for further analysis and exploration of the collected data. It would be an interesting direction for further research to assess if and how the level of gender dysphoria correlates with the sexual orientation of the subjects. Furthermore, the adopted diagnostic tool can be successfully used in further research on the potential correlations between the levels of dysphoria and eating disorders, neurodiversity, as well as personality disorders. The issues presented definitely require further studies.

Conflict of interest

The authors report no financial or personal relationships with other individuals or organisations that could adversely affect the content of the publication and claim ownership of this publication.

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Author contributions

Original concept of study: SN, AOC. Collection, recording and/or compilation of data: SN, AOC. Analysis and interpretation of data: SN, AOC. Writing of manuscript: SN, AOC. Critical review of manuscript: AZ. Final approval of manuscript: AZ.

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