



Everyday Discrimination Scale: Dimensionality in a Portuguese community sample and specific versions for sexual and gender minority

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Abstract

Perceived everyday discrimination is a transversal phenomenon with a negative impact on people's health. This study aimed to explore the factor structure and psychometric properties of three versions of the *Everyday Discrimination Scale*, with three different samples: the European Portuguese validation (EDS-PT, considering any reason for discrimination), using a sample of adults from the community ($N=610$), a specific version for sexual minority (EDS-SM), with a sample of sexual minority individuals ($N=352$), and a specific version for gender minority (EDS-GM), in a sample of gender minority individuals ($N=108$). Factor structure and reliability of the different versions were examined. A second-order two-factor model (*Everyday discrimination* with factor 1 *Unfair Treatment* and factor 2 *Personal Rejection*) presented good adjustment and adequate reliability. Furthermore, all versions of EDS revealed weak to moderate correlations with indicators of convergent validity (mental health, satisfaction with life, social safeness, and social support). This study's outcomes provide insights into different types of everyday discrimination and suggest that the EDS-PT, EDS-SM and EDS-GM are valid and reliable measures useful in research and clinical contexts.

Keywords EDS · Perceived discrimination · Sexual minorities · Gender minorities · Factor structure

Introduction

Discrimination refers to unjustifiable negative behaviours (actions and judgments/decisions) based on general judgments toward a group or group members (Ramiah et al., 2010). The way each person describes and evaluates actions as unfair and undeserved, motivated by their belonging to a social category or group, is called *perceived discrimination* (Andriessen

et al., 2014; Major & Dover, 2015). Tolerance can be represented as a middle path between acceptance and rejection, sharing the behavioural inclusion with acceptance, and the negative attitude with rejection (Adelman et al., 2023). Additionally, it is related to power in social relations, when majority groups can (or not) tolerate minority and discriminated groups (Verkuyten, 2023). Discrimination behaviours are rarely directly observed (National Research Council, 2004), pointing out to the need to explore different ways to measure this phenomenon. Even if actual and perceived discrimination are different constructs, perception of discrimination, *per se*, is enough to have an impact on people's behaviours and emotions (Andriessen et al., 2019). In cases where rejection is not explicitly stated or absent (e.g., through tolerance), research indicates that the level of well-being is significantly lower compared to situations involving acceptance (Adelman et al., 2023) and non-discrimination. A systematic review about the relationship between perceived discrimination and health indicators (Pascoe & Richman, 2009) found that feeling discriminated was associated with poorer mental and physical health, particularly with depressive symptoms, psychiatric distress,

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risk factors related to cardiovascular disease, physical conditions, general indicators of illness, and decreased well-being in different samples. Recent research aligns with these findings, especially concerning the association between perceived discrimination and depressive symptoms (Everett et al., 2016; Weeks & Sullivan, 2019; Yoon et al., 2019). Discrimination also presented a negative association with satisfaction with life (Noh et al., 2018) and social support moderated the relationship between everyday discrimination and depression symptoms (Qin et al., 2020). Perceived discrimination is thus a risk factor for mental health, and the assessment of its intensity, as well as the context where it occurs, is of utmost importance (Freitas et al., 2016). In this sense, assessing the perceived discrimination in multiple contexts is required.

The phenomenon of discrimination includes different dynamics, as multiple discrimination, when people can face discrimination motivated on different aspects of their identity (e.g. age, ethnicity, disability, gender, social and economic status, sexual orientation, and/or gender identity) (Council of Europe, n.d.). Sexual and Gender Minority (SGM) individuals still face discrimination in their personal lives in many contexts (European Union for Fundamental Rights [FRA], 2020; Mahowald et al., 2020). Unsurprisingly, discrimination is also associated with negative psychological outcomes among SGM, namely anxiety and depression (Livingston et al., 2020), and suicidal ideation (Kohlbrenner et al., 2016). In Portugal, data referring to the last five reports of the discrimination observatory against LGBTQIA+ people showed that complaints of discrimination did not decrease (ILGA, n.d.) despite positive legal changes. In addition, other reasons of discrimination were also reported in Portugal, for example, ableism (National Institute for Rehabilitation, 2023), racism and xenophobia (Casquilho-Martins et al., 2022). Thus, it is crucial to have valid and reliable measures to assess general and specific perceived discrimination considering different reasons and in SGM population, to ensure ecological validity (Tanzer & Sim, 1999).

Assessment of discrimination

The *Everyday Discrimination Scale* (EDS) was developed by Williams et al. (1997) to assess the frequency of discrimination experiences in people's daily lives. These experiences include being treated with less courtesy and respect than other people, receiving poorer service in restaurants or stores, people acting as if one is inferior, scary, dishonest or not smart, being called names or being insulted and threatened or harassed. A systematic review concluded that the EDS is one of the most widely used instruments to assess perceived or everyday discrimination in different populations (Bastos et al., 2010; Harnois, 2022) and different versions presented

strong psychometric properties (Bastos & Harnois, 2020). In addition to the good general psychometric properties, the EDS considers different reasons of discrimination and different contexts, and it has a holistic approach, including not only macroaggressions, but also microaggressions.

Specifically, the original version of the instrument was developed with a focus on the mistreatment of racial-ethnic minorities (Harnois et al., 2019; Williams, 2012; Williams et al., 1997) and a later version included follow-up questions ("What do you think is the main reason for these experiences?"; Williams, 2012). However, other types of mistreatment have been considered (e.g. age-based, Harnois et al., 2019; gender-based, Stucky et al., 2011; workplace-based, Ulusoy et al., 2023; and weight-based, Pearl et al., 2018). Researchers conducted validations with different populations: Vietnamese American and Chinese American people (Chan et al., 2012), American Indian and Alaska Native people (Gonzales et al., 2016), African American and European American women (Guyll et al., 2001), Black American adolescents (Clark et al., 2004), Portuguese adolescents and young adults (Freitas et al., 2015), Iranian older women (Googhary et al., 2020), American Black and White older people (Barnes et al., 2004), African American patients in medical contexts (Peek et al., 2011), and Spanish medical students (Campo-Arias et al., 2015). In general, all versions showed adequate to good psychometric values (Chronbach's alphas between 0.70 and 0.93 and good fit indexes). However, most psychometric studies with the EDS are related to ethnic discrimination and it is important to explore other grounds for discrimination (Bastos & Harnois, 2020).

Regarding the length of the instrument, The Chicago Community Adult Health Study (CCAHS; Sternthal et al., 2011) developed a short version of the EDS with five items and kept the follow-up questions (questions to identify contexts or types of discrimination). Extended versions (Williams et al., 2008) were used in the National Survey of American Life (NSAL) and in the South African Study of Stress and Health (SASH); both versions added one item about being followed in stores and questions about racial and non-racial discrimination (total of 10 items). Two different short versions have also been devised (Chan et al., 2012; Sternthal et al., 2011). As for the factorial structure of the EDS, most versions have a single-factor structure (Clark et al., 2004; Gonzales et al., 2016; Krieger et al., 2005; Taylor et al., 2004; Williams et al., 1997, 2008) with nine items. However, in three of these versions a two-factor structure was found (Barnes et al., 2004; Freitas et al., 2015; Guyll et al., 2001). Specifically, in Portugal, there is a validation in a community sample of adolescents and young adults (Freitas et al., 2015) with 8 items in a second-order two-factor structure (*Everyday Discrimination* distributed in *Unfair treatment* and *Personal rejection*).

The present study

As mentioned above, the EDS is the best and most widely used scale for assessing perceived discrimination, it proved to have strong psychometric characteristics, several specific measures derived from it, and it allows to explore different reasons of discrimination, while other measures of perceived discrimination assess only one reason, (e.g., race; cf. Atkins, 2014 for a review), or gender (Perceived Gender Discrimination Scale; Foley et al., 2005). Considering the importance of assessing perceived discrimination in the general population and the specific challenges faced by SGM due to pervasive stigma (Meyer, 2003, 2015), this study aim to validate one general and two specific versions of the *Everyday Discrimination Scale* (European Portuguese): the EDS-PT in a community sample of Portuguese adults, considering any reason for discrimination; the EDS-SM in a sample of sexual minority, only considering homophobic discrimination; and the EDS-GM in a sample of gender minority, only considering transphobic discrimination.

Specifically, the researchers explored different aspects of the construct validity of the instruments, examined its reliability for all versions. Regarding factorial validity, no hypotheses were devised since there was no consistent factorial structure. However, we expected significant and positive correlations between everyday discrimination and psychopathology, as well as significant and negative correlations between everyday discrimination and positive variables (satisfaction with life, social safeness, and social support).

Method

Participants

This study includes three different samples, one for each version of the EDS. Sample one is composed of 610 Portuguese adults (71.6% female, 24.9% male, 2.5% nonbinary, 0.2% intersex and 0.8% prefer to not say) aged between 18 and 69 years ($M = 36.2$, $SD = 12.1$). Sample two was composed of sexual minority individuals ($N = 352$) with a mean age of 27 years ($SD = 7.8$). Sample three was composed of gender minority individuals ($N = 108$) who self-identified as Trans with a mean age of 25.5 years ($SD = 8.4$). All samples' descriptive statistics can be found in Table 1.

Procedure

A collaboration of three interrelated research projects came together to assemble this study: (i) *Project Global Queer-antime*, (ii) *Mental Health and Well-Being in Lesbian, Gay and Bisexual (LGB) People: Conceptual Model and Compassion-Based Intervention*, and (iii) *Projeto TransFormar*.

Data were collected between January 2020 and February 2022, using both web-based and paper and pencil surveys. In sample three, some participants were recruited in a trans-oriented medical service (Genitourinary and Sexual Reconstructive Unit). Confidentiality and voluntary participation were assured. After reading the information page, participants gave their informed consent and completed the research protocol. Inclusion criteria were being Portuguese, to be aged between 18 and 70 years, and to fully complete the questionnaires. Participants of sample one completed an experimental version of the EDS-PT (translation version used in Portuguese adolescents and young adults validation; Freitas et al., 2015), participants of sample two answered questions only considering discrimination due to sexual orientation (EDS-SM), and participants of sample three answered questions only considering discrimination due to gender identity (EDS-GM). There was no financial compensation for participation. The study was conducted following the appropriate ethical standards (Declaration of Helsinki, 1964), and the protocol was approved by the institutional review boards of the host institutions.

Instruments

Sociodemographic questionnaire Participants were asked about sociodemographic characteristics such as age, gender, gender identity, sexual orientation, region of residence, educational level, and work status. Response options are described in Table 1.

Everyday Discrimination Scale – European Portuguese adult version (EDS-PT) Participants of sample one (community) completed the experimental version of the EDS-PT, which assesses the extent to which individuals experience everyday instances of discrimination for several reasons (Krieger et al., 2005; Williams et al., 1997). The following four structures were found in different contexts: a 9-item single-factor structure (Clark et al., 2004; Gonzales et al., 2016; Krieger et al., 2005; Taylor et al., 2004; Williams et al., 1997), a 5-item unifactorial structure (Chan et al., 2012), a two-factor 9-item structure (Barnes et al., 2004), and two-factor with 8-item structure (Freitas et al., 2015). Participants rated their answers on a 6-point Likert scale – *Never* (0), *Less than once a year* (1), *A few times a year* (2), *A few times a month* (3), *At least once a week* (4) and *Almost everyday* (5) –, with higher mean scores indicating higher perceived discrimination. When participants related frequencies above *A few times a year* (2), they should also select the perceived reason for repeated discrimination. In the original version (Krieger et al., 2005; Williams, 2012) 11 reasons were presented: ancestry or national origins, gender, race, age, religion, height, weight, some other aspect of physical appearance, sexual orientation, education or income level, and a physical

Table 1 Sample 1 (EDS-PT), sample 2 (EDS-SM), and sample 3 (EDS-GM) sociodemographic characteristics

Characteristic	Sample 1 – Community sample (<i>N</i> =610)		Sample 2 – Sexual Minority (<i>n</i> =352)		Sample 3 – Gender Minority (<i>n</i> =108)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender						
Female	437	71.6	144	40.7	25	23.1
Male	152	24.9	185	52.3	46	42.6
Nonbinary	15	2.5	23	6.5	37	34.3
Intersex	1	0.2	0	0	0	0
Prefer not to say	5	0.8	2	0.6	0	0
Gender identity						
Cisgender	579	94.9	318	89.8	0	0
Transgender	22	3.6	26	7.3	108	100
Prefer not to say	6	1	10	2.8	0	0
Sexual orientation						
Heterosexual	361	59.2	0	0	30	27.8
Gay	95	15.6	156	44.1	6	5.6
Lesbian	47	7.7	66	18.6	16	14.8
Bisexual	52	8.5	81	22.9	25	23.1
Pansexual	26	4.3	40	11.3	22	20.4
Asexual	10	1.6	3	0.8	4	3.7
Other	5	0.8	7	2	4	3.7
Prefer not to say	14	2.3	1	0.3	1	0.9
Region of residence						
North	199	32.6	102	28.8	23	21.3
Centre	110	18	201	56.8	34	31.5
Lisbon and Tagus Valley	247	40.5	4	1.1	41	38
South	31	5.2	31	8.8	5	4.6
Islands (Madeira and Azores)	21	3.6	16	4.5	5	4.6
Educational level						
4th grade or less	1	0.2	0	0	0	0
5th and 6th grades	10	1.6	0	0	0	0
7th to 9th grades	46	7.5	2	0.6	3	2.8
10th to 12th grade	169	27.7	73	20.6	52	41.8
Higher education	384	63	279	78.8	53	49.1
Work status						
Student	91	14.9	80	22.6	48	44.4
Student and worker	18	3	38	10.7	10	9.3
Worker	354	61.3	204	56.7	38	35.2
Unemployed	95	15.6	32	9	11	10.2
Other	32	5.2	0	0	1	0.9

disability. Considering the differences between gender, gender expression, and gender identity, the researchers decided to add gender expression and gender identity to the list of reasons. Physical disability, mental condition or disability was also added. The data collection also occurred during the pandemic context (COVID-19) and because SARS-CoV-2-related discrimination has been reported (He et al., 2020), corona virus's infection was also added as one possible reason.

Everyday Discrimination Scale – European Portuguese adult version for Sexual and Gender Minority individuals (EDS-SM and EDS-GM) Sexual and gender minority participants completed the specific EDS, which assesses the extent to which individuals experience everyday instances of discrimination specifically due to sexual orientation (Sample two; EDS-SM) and gender identity (Sample three; EDS-GM). The items were the same items included in the EDS-PT but with different instructions, related with homophobic

discrimination in EDG-SM and related with transphobic discrimination in EDS-GM. Participants rated their answers on the same scale used for the EDS-PT, with higher scores indicating higher perceived discrimination due to sexual orientation and gender identity.

Depression, Anxiety and Stress Scales 21-item version (DASS-21) The original instrument by Lovibond and Lovibond (1995), was adapted to European Portuguese by Pais-Ribeiro et al. (2004). The scale has 21 items divided into 3 subscales: *Depression* (symptoms usually associated to negative mood, e.g. “I could see nothing in the future to be hopeful about”), *Anxiety* (physical arousal symptoms, panic attacks and fear, e.g. “I was aware of the action of my heart in the absence of physical exertion”) and *Stress* (persistent states of excitation and tension, e.g. “I found it difficult to relax”). Participants rated items using a 4-point Likert scale from *Did not apply to me at all* (0) to *Applied to me very much or most of the time* (3), with higher scores indicating greater negative affect. Cronbach’s alphas of the factors in the original version ranged between 0.74 and 0.85, and in the Portuguese version between 0.83 and 0.93. In this study, only *Anxiety* and *Depression* subscales were used for convergent validity with the three versions. Cronbach’s alphas ranged between 0.87 and 0.94.

Satisfaction With Life Scale (SWLS) This scale has five items that assess subjective well-being. In the original version (Diener et al., 1985) and in the European Portuguese version (Laranjeira, 2009) participants rated items using a 7-point Likert scale, from *Strongly disagree* (1) to *Strongly agree* (7). Higher scores indicate higher satisfaction with life (e.g., “If I could live my life over, I would change almost nothing”). In the original version, Cronbach’s alpha was 0.87, in the Portuguese version it was 0.89, and in this study, alphas ranged between 0.80 and 0.88 in the three samples. This measure was used for convergent validity with the three versions.

Social Safeness and Pleasure Scale (SSPS) This 11-item scale was devised by Gilbert et al. (2009) and adapted to European Portuguese by Pinto-Gouveia et al. (2008). The SSPS assesses the extent to which people usually experience their social world as safe, warmth, and soothing. Participants used a 5-point Likert scale, from *Almost never* (1) to *Almost all the time* (5), to rate the items. Higher scores indicate a higher sense of belonging, acceptance and warmth from others (e.g., “I feel easily soothed by those around me”). This scale was only used in sample one for convergent validity of the EDS-PT. The Cronbach’ alphas was 0.91 both in the original version and in a sample of Portuguese individuals, and 0.95 in Sample one.

Multidimensional Scale of Perceived Social Support (MSPSS) The original version by Zimet et al. (1988) was adapted to European Portuguese by Carvalho et al. (2011). The instrument has 12 items divided into three subscales: *Family*, *Friends*, and *Significant other* with a total score of *Perceived social support*. Participants used a 7-point Likert scale, from *Completely disagree* (1) to *Completely agree* (7), to answer the questionnaire. Higher scores indicate higher perceived social support. The Cronbach’ alphas was 0.88 in the original version and 0.92 in the Portuguese version. In this study, this scale was only used in samples two and three for convergent validity, with Cronbach’s alphas of 0.90 and 0.92, respectively.

Data analysis

All data analyses were conducted using the IBM SPSS Statistics version 27 (IBM Corporation, 2020) and the IBM AMOS version 27 (Arbuckle, 2020). Outliers were explored through boxplots (Rousseeuw & Hubert, 2011). The researchers decided not to eliminate the outliers in the database to keep the natural variance and considering that no significant differences occurred in our results (Osborne, 2008), ensuring ecological validity. The normality of data distribution was examined using Skewness (*Sk*) and Kurtosis (*Ku*) values. To test the psychometric properties of the EDS-PT, EDS-SM, and EDS-GM, the researchers analysed its construct validity: factorial validity (Confirmatory Factor Analysis, CFA), reliability (internal consistency, composite and individual), and convergent validities. Taking into account the history of the scale, four previous competing models were compared to explore which would have a better adjustment in the community sample (EDS-PT). Then, the model with the best fit in the community sample was tested for EDS-SM and EDS-GM specific versions.

The *Maximum Likelihood* (ML) estimation method was used in the CFA, as it is the most commonly used (Brown, 2015). The fit indices ascertained were the Chi-Square (χ^2), the Normed Chi-Square (*NCS* or χ^2/df), the Comparative Fit Index (*CFI*), the Tucker-Lewis Index (*TLI*), the Goodness of Fit Index (*GFI*) and the Root Mean Square Error of Approximation (*RMSEA*). Chi-Square (χ^2) should be nonsignificant, but this index is rarely considered reliable when the sample size is large (van de Schoot et al., 2012). Values of *NCS* should be between 2 and 3 (Hooper et al., 2008). For comparative (*CFI* and *TLI*) and absolute (*GFI*) fit indexes, values between 0.80 and 0.89 are considered poor (Marôco, 2014), and between 0.90 and 0.95 values reflect a good fit (Marôco, 2014; Schumacker & Lomax, 2016). For *RMSEA*, values between 0.05 and 0.08 are acceptable (Schumacker & Lomax, 2016). Factor loadings should not be below 0.32 (Comrey & Lee, 1992). Internal consistency

was assessed through *Cronbach’s alpha*. According to Hair et al. (2019), values between 0.60 and 0.70 define the lower limit of acceptability. For *composite reliability* (the degree which the measured variables represent a latent construct), values should be between 0.70 and 0.95 (Hair et al., 2019; Marôco, 2014) and for *individual reliability* (variance of manifest variables explained by the latent factor), values above 0.25 are considered fit (Marôco, 2014).

For convergent validity, Pearson correlation coefficients were interpreted according to Dancey and Reidy (2020): correlation coefficient below 0.30 represent a weak association, between 0.40 and 0.60 a moderate association, and above 0.70 a strong association.

Results

Preliminary results and descriptive statistics

Some outliers were found in discrimination measures, *anxiety*, and *depression*, corresponding from 0.9% in sample three to 6.5% in sample two. There was no missing data across the questionnaires. Descriptive statistics are presented in Table 2. No severe violations of normal distribution were found, with all scores below |3| and below |10| for *Sk* and *Ku*, respectively (Kline, 2016; Marôco, 2014).

Construct validity

Responses to the EDS-PT items Table 3 presents the frequencies and percentages of responses for each item of the EDS-PT (Sample one; *N*=610). The more frequently rated items as *Never* were “They call you offensive names or insult you” (70.3%), “They threaten or harass you” (68%) and “They act as if you are dishonest” (66.2%). The items more rated as *Almost everyday* were “They treat you with less courtesy” (38%) and “They treat you with respect” (36.4%). Participants who answered at least one item above *A few times a*

year (> 2) and who reported the perceived reason for repeated discrimination were retained for further analyses (*n*=360). In descending order, the discrimination reasons reported in sample one were: other reasons (*n*=54, 14.9%), sexual orientation (*n*=47, 13.1%), gender expression (*n*=46, 12.8%), socioeconomic level (*n*=43, 11.9%), some other aspect of your physical appearance (*n*=31, 8.6%), age (*n*=29, 8.1%), gender (*n*=27, 7.5%), weight (*n*=25, 6.9%), a mental condition or disability (*n*=23, 6.4%), a physical condition or disability (*n*=10, 2.8%), coronavirus infection (*n*=7, 1.9%), nationality (*n*=6, 1.7%), height (*n*=6, 1.7%), gender identity (*n*=6, 1.7%), ethnicity and religion (*n*=0, 0%).

Factor structure of the EDS-PT To analyse the factor structure of the EDS-PT, four CFAs were conducted. Model 1 represents the original 9-item version (Williams et al., 1997), Model 2 represents the short version with 5 items (Chan et al., 2012), Model 3 represents the second-order two-factor version with 9 items (Barnes et al., 2004), and Model 4 represents the second-order two-factor version with 8 items (Freitas et al., 2015). This latter version had a correlation between errors (item 1 with 2, item 8 with 9 in the first factor and item 4 with items 7 and 10). Table 4 shows the fit indexes for these versions. Model 4 presented the best fit indexes ($\chi^2=70.82, p<0.001, NCS=5.06, CFI=0.98, TLI=0.96, GFI=0.97, RMSEA=0.08$). Chi-square was significant and although the *NCS* did not present an adequate value, it was still better in comparison to the other models. *CFI*, *TLI* and *GFI* presented a good fit and *RMSEA* was on the limit of acceptability (Table 4). Considering the modification indexes, a correlation between the errors of items 4 and 6 was added.

Factor structures of the EDS-SM and EDS-GM To analyse the factor structure of the *Everyday Discrimination Scale – European Portuguese Adult Version for SGM*, the final model of the EDS-PT was replicated in Sample two (EDS-SM) and Sample three (EDS-GM). In both versions, all fit indexes were similar to the ones found for the EDS-PT

Table 2 Descriptive statistics

	Sample 1 (EDS-PT)		Sample 2 (EDS-SM)		Sample 3 (EDS-GM)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Everyday discrimination (total score)	0.7	0.7	1.0	0.9	1.4	1.3
Unfair treatment	0.9	0.9	0.9	0.9	1.3	1.3
Personal rejection	1.0	0.8	1.0	1.0	1.5	1.4
Anxiety	4.2	1.0	4.4	4.9	9.4	6.6
Depression	7.0	4.3	6.0	5.6	9.5	5.8
Satisfaction with life	4.0	1.4	4.4	1.4	2.6	0.9
Social safeness and pleasure	3.4	1.0	N/A	N/A	N/A	N/A
Perceived social support (total score)	N/A	N/A	5.6	1.1	4.8	1.5

Table 3 Frequency and percentages of the EDS-PT item responses ($N=610$)

Item content	0	1	2	3	4	5
1. Treated with less courtesy	208 (34.1%)	232 (38%)	105 (17.2%)	38 (6.2%)	208 (34.1%)	232 (38%)
2. Treated with less respect	169 (27.7%)	222 (36.4%)	129 (21.1%)	57 (9.3%)	169 (27.7%)	222 (36.4%)
3. Provided with less services	297 (48.7%)	233 (38.2%)	52 (8.5%)	17 (2.8%)	6 (1%)	5 (0.8%)
4. Treated as not smart	232 (38%)	215 (35.2%)	89 (14.6%)	43 (7%)	17 (2.8%)	14 (2.3%)
5. Acting with fear	330 (54.1%)	150 (24.6%)	76 (12.5%)	33 (5.4%)	13 (2.1%)	8 (1.3%)
6. Treated as dishonest	404 (66.2%)	139 (22.8%)	37 (6.1%)	16 (2.6%)	8 (1.3%)	6 (1%)
7. Treated as less good	128 (21%)	176 (28.9%)	166 (27.2%)	74 (12.1%)	41 (6.7%)	25 (4.1%)
8. Being called names	429 (70.3%)	121 (19.8%)	30 (4.9%)	20 (3.3%)	8 (1.3%)	2 (0.3%)
9. Being threatened	415 (68%)	123 (20.2%)	43 (7%)	19 (3.1%)	6 (1%)	4 (0.7%)
10. Treated as defective	331 (54.3%)	145 (23.8%)	72 (11.8%)	27 (4.4%)	20 (3.3%)	15 (2.5%)

($\chi^2 = 47.11$, $p < 0.001$, $NCS = 3.37$, $CFI = 0.98$, $TLI = 0.96$, $GFI = 0.98$, $RMSEA = 0.08$ for EDS-SM and $\chi^2 = 14.52$, $p < 0.001$, $NCS = 1.04$, $CFI = 1$, $TLI = 1$, $GFI = 0.97$, $RMSEA = 0.02$ for EDS-GM). Chi-square was significant but NCS presented a good value. CFI , TLI and GFI presented a good fit in both versions, and $RMSEA$ was on the limit of acceptability for EDS-SM and it was very good for the EDS-GM (Table 4).

Therefore, the final second-order model of all versions (EDS-PT, EDS-SM and EDS-GM) included a total score for *Everyday Discrimination*, distributed in two factors: F1 – *Unfair Treatment* and F2 – *Personal Rejection*. The first factor included items related to differentiated treatment (e.g. “They treat you with less courtesy”) and overtly offensive behaviour (e.g. “They call you offensive names or insult

you”), and the second factor was related to masked or subtle depreciation (e.g. “They act as if something is wrong with you” and “They act as if they are better than you”). Factor 1 has four items (treated with less courtesy, treated with less courtesy, being called names, and being threatened) and Factor 2 has also four items (treated as not smart, treated as dishonest, treated as less good, and treated as defective).

Convergent validity: correlations with other measures

The measures used for convergent validity were chosen based on the association with discrimination found by research. Moreover, given the fact that the samples of this study resulted from three different projects, the measures used for convergent validity in each sample were different, considering the measures that each project protocol

Table 4 Fit indexes of the four different models

Model	χ^2	df	p -value	NCS	CFI	TLI	GFI	RMSEA
1. Single factor (9 items) EDS-PT	425.55	27	<.001	15.76	.85	.80	.87	.16
2. Single factor (5 items) EDS-PT	122.52	5	<.001	24.51	.92	.83	.92	.20
3. Second-order two-factor (9 items) EDS-PT	368.52	26	<.001	14.17	.87	.83	.88	.15
4. Second-order two-factor (8 items) EDS-PT	70.82	14	<.001	5.06	.98	.96	.97	.08
EDS-SM	47.11	14	<.001	3.37	.98	.96	.98	.08
EDS-GM	14.52	14	.41	1.04	1	1	.97	.02

$N=610$ (EDS-PT) $N=352$ (EDS-SM) $N=108$ (EDS-GM)

included. Therefore, to assess convergent validity in the general sample, correlations of the EDS-PT total score and factors, with anxiety, depression, satisfaction with life, and social safeness and pleasure were performed. All coefficients were significant ($p < 0.01$). The score of the total scale and of the two subscales showed moderate and positive correlations with anxiety and depression ($0.39 < r < 0.47$), weak and negative correlations with satisfaction with life ($-0.28 < r < -0.30$), and moderate and negative correlations with social safeness and pleasure ($-0.41 < r < -0.46$). Table 5 presents all Pearson’s coefficients.

Additionally, correlations of the EDS-SM and of the EDS-GM (total scale and factor scores) with anxiety, depression, satisfaction with life, and perceived social support were performed. Both the total score and F2 (*personal rejection*) presented moderate and positive correlations with anxiety and depression, while with F1 (*unfair treatment*), this correlation was weak in the EDS-SM. All measures of discrimination showed a weak and negative correlation with both satisfaction with life and perceived social support. Regarding the EDS-GM, the total score and both factors showed moderate and positive correlations with anxiety and depression, moderate and negative correlations with satisfaction with life, and weak and negative correlations with perceived social support. Table 6 presents all Pearson’s coefficients.

Table 5 Correlations between discrimination variables and other study variables in sample 1 (EDS-PT, $N = 610$)

Variable	Anxiety	Depression	Satisfaction with life	Social safeness and pleasure
Everyday discrimination (total score)	.46*	.46*	-.30*	-.46*
Unfair treatment	.39*	.41*	-.29*	-.41*
Personal rejection	.47*	.45*	-.28*	-.46*

* $p < .01$

Table 6 Correlations between study variables in samples 2 and 3 (EDS-SM and EDS-GM)

Variable	1	2	3	4	5	6	7
1. Everyday discrimination (total score)	–	.97*	.97*	.43*	.38*	-.44*	-.33*
2. Unfair treatment	.93*	–	.92*	.40*	.35*	-.42*	-.27*
3. Personal rejection	.94*	.76*	–	.46*	.39*	-.40*	-.30*
4. Anxiety	.37*	.28*	.41*	–	.76*	-.31*	-.15
5. Depression	.35*	.25*	.40*	.70*	–	-.51*	-.31*
6. Satisfaction with life	-.31*	-.26*	-.31*	-.32*	-.53*	–	.45*
7. Perceived social support (total score)	-.33*	-.30*	-.31*	-.19*	-.35*	-.48*	–

Correlations for EDS-SM ($N = 352$) are shown below the diagonal; Correlations for EDS-GM ($N = 108$) are shown above the diagonal

* $p < .01$

Reliability: internal consistency, composite reliability, and individual reliability

Both the total scale and the two factors showed good internal consistency with alphas between 0.83 and 0.95. The mean and standard deviation of each item, item-total correlation and alpha if the item deleted can be found in Tables 7 and 8 (Supplementary Material). No item improved the scale’s alpha value if removed. Item-total correlations ranged between 0.61 and 0.88 in *unfair treatment* (F1) and between 0.69 and 0.89 in *personal rejection* (F2). Considering the composite reliability, good values were obtained (between 0.78 and 0.86 for *unfair treatment* and between 0.86 and 0.90 for *personal rejection*). Finally, the values of individual reliability were good (all above 0.45). The correlation between each factor and the total score was strong in all measures ($0.93 < r < 0.97$). The factors showed a strong intercorrelation ($r = 0.76$ for the EDS-PT and EDS-SM and $r = .92$ for the EDS-GM).

Discussion

The most widely used instrument to assess perceived or everyday discrimination is the *Everyday Discrimination Scale* (Bastos et al., 2010). The main goal of this study was to validate three versions of this instrument: the EDS-PT using a Portuguese community sample, and two specific measures – the EDS-SM with focus on homophobic discrimination in a sample of sexual minority individuals, and the EDS-GM with focus on transphobic discrimination in a sample of gender minority individuals. Several validations of this instrument have been performed and considering its factorial structure inconsistency, we tested and compared four models. The second-order model for the EDS-PT obtained the best adjustment, similarly to what was obtained in a sample of Portuguese adolescents and young adults (Freitas et al., 2015). The final model exhibited good fit indexes, with some correlated residuals

implying the need for cautious interpretation. The same factorial structure was then tested for the EDS-SM and the EDS-GM versions, also revealing good fit indexes, thus confirming a second-order (*Everyday discrimination*) two-factor structure (*Unfair treatment* and *Personal rejection*). The first factor included items related to differentiated treatment (e.g. “They treat you with less courtesy”) and overtly offensive behaviour (e.g. “They call you offensive names or insult you”). The second factor was related to masked or subtle depreciation (e.g. “They act as if something is wrong with you” and “They act as if they are better than you”). The strong relationship between both factors of the EDS-PT suggests a high construct overlapping and a unifactorial structure. However, when comparing the unifactorial and two-factor structures, fit indices were considerably better in the two-factor structure. Additionally, the difference between *Unfair treatment* and *Personal rejection* is corroborated by the general classification of types of discrimination: (i) overt or direct, and (ii) subtle, unconscious or automatic (Ramiah et al., 2010). That is, overt discrimination is related to being insulted, being threatened and being treated rudely and subtle discrimination is related to being treated unfairly and being ignored (Noh et al., 2007). This finding is also in line with the Portuguese adolescents and young adults of the EDS (Freitas et al., 2015), indicating that perceived discrimination is a transversal phenomenon across generations. This two-factor model was tested with SGM, again obtaining good fit indices. Despite the good fit indices in the three versions, the researchers recommend using only the total score.

Focusing on items responses, “They call you offensive names or insult you” and “They threaten or harass you” were the least reported items, and “They treat you with less respect” and “They treat you with less courtesy” were the most reported items. These four items are part of the factor *Unfair treatment*. Considering more overt actions, the feeling that someone acts differently towards oneself compared to others is more frequent than being a victim of flagrant discrimination (being insulted or threatened). These results are in line with studies that emphasized the more dissimulated nature of prejudice in contemporary societies (Gato et al., 2011).

Gender-related discrimination (gender, sexual orientation, gender expression and identity, 35.1%) and demographic status-related discrimination (nationality, age, and socioeconomic level, 21.7%) were the more prevalent reasons for discrimination. To the best of our knowledge, there the literature on different types of discrimination is still scarce. In the last report about discrimination in the European Union (European Commission, 2019), the more common discrimination reasons in Portugal were sexual orientation (71%), other ethnicity (67%), ethnicity Roma (62%), skin colour (61%), gender identity (59%), disability (58%), sexual characteristics (55%), age (52%), religion (41%), and gender

(37%). These results are in line with this study, with gender discrimination being the most prevalent type of discrimination. It is important to point out that these results may be specific of the Portuguese context, and/or that they depend of political, social, and medical current contexts.

When considering the associations with other measures, all associations were in the expected direction, corroborating the initial hypotheses. The total scores and factors of the EDS-PT and of the EDS-GM correlated moderately and positively with psychopathology symptoms. Other studies have reported an association between perceived discrimination and negative mental health outcomes, particularly depression (Everett et al., 2016; Pascoe & Richman, 2009; Weeks & Sullivan, 2019; Yoon et al., 2019). Lower levels of satisfaction with life and social safeness and pleasure were associated with higher levels of discrimination in both EDS-PT factors. The higher correlation with social safeness and pleasure suggests that perceived discrimination is less related to general subjective well-being than to feelings of safeness, warmth, and soothing in the social world. In line with these findings, Castaneda et al. (2015), reported that discrimination was associated with unsafety and decreased trust in society among migrants. Additionally, in the EDS-SM and EDS-GM the correlations between everyday discrimination and social support were low to moderate. These results are in line with other studies that also used the Everyday Discrimination Scale (e.g., Chang et al., 2021; Qin et al., 2020).

Despite its contributions, some limitations of this study should also be considered. The literature shows that participants of online surveys are predominantly White, middle to upper-class, and with a high educational level (Dillman et al., 2014). In this sense, it is important to collect a more balanced sample regarding ethnicity, socioeconomic status and educational level surpassing the online survey bias. Additionally, the sample sizes for each type of discrimination and gender were imbalanced and small. Future studies should have a larger representation at each type of discrimination to allow more rigorous invariance analyses and more balanced sample in function of gender.

A proper assessment and understanding are necessary in order to generate solutions. Research in the field of discrimination may help to explore mechanisms that might encourage positive and inclusive behaviours that might decrease discriminatory conduct. This is why the assessment of everyday discrimination is crucial. The EDS-PT, EDS-SM, and EDS-GM are adequate tools for research and clinical practice, helping to push the field forward.

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Authors' contributions DS: Designed the research, literature research, sample collection (sample 1 and 2), statistical analysis, data interpretation, and writing of the manuscript; JG: Designed the research, sample collection (sample 1), data interpretation, and revision of the final manuscript; NP: Revision of the final manuscript; DC: Designed the research, statistical analysis, data interpretation, writing and revision of the manuscript; JA: Designed the research, statistical analysis, data interpretation, writing and revision of the manuscript; LM: Sample collection (sample 3), and revision of the final manuscript; MCS: Designed the research, data interpretation, writing and revision of the final manuscript.

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Data availability Available from authors upon a reasonable request.

Declarations

Ethics approval Research involving Human Participants. All procedures performed were in accordance with the ethical standards of the Helsinki Declaration, the Ethics and Deontology Commission of the Faculty of Psychology and Educational Sciences of the University of Coimbra, the Ethics Commission of the Faculty of Medicine of the University of Coimbra, the Ethics Committee of Centre for Psychology of the University of Porto, and Ethics Committee of the Coimbra Hospital and University Centre.

Informed consent Free and informed consent was obtained from all individual participants included in the study.

Competing interests The authors have no conflicts of interest to disclose.

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