



Validation of the Attitude Scale to Lesbian, Gay, Bisexual and Transgender Old Age in a Colombian Sample

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Abstract

The Attitude Scale to Lesbian, Gay, Bisexual and Transgender Old Age (EAFV-LGBT) evaluates attitudes towards LGBT older adults. The main goal of this research was to adapt and examine the psychometric properties in a Spanish-speaking sample. The sample consisted of 521 Colombian adults (36.3% men and 63.7% women) with a mean age equal to 27.39 ($SD=9.27$). Participants completed a Socio-Demographic and Sexual History Questionnaire, the Hispanic translations of the EAFV-LGBT, the Subtle and Manifest Prejudice Scale towards Homosexuals, and the Big Five Personality Trait Short Questionnaire. The results showed that the Colombian EAFV-LGBT has good psychometric properties. The structure of the scale was unidimensional, and the internal consistency reliability was also adequate. Likewise, the convergent validity of the scale was verified by correlating it with another measure that evaluates explicit and implicit homophobia. In addition, it was found that there was a relationship between personality traits and attitudes towards LGBT adults. Specifically, participants with lower openness, extraversion, and agreeableness reported more negative attitudes toward older LGBT people.

Keywords Attitudes · LGBT old age · Scale, validation, reliability

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Introduction

Life expectancy has increased, since it is estimated that around 12.7% of the world's population is 60 years or older (United Nations, 2017). In addition, the increase in life expectancy is also occurring in underdeveloped or developing countries (World Health Organization, WHO, 2020). Colombia is an example of this, as it is ranked 54th in the world life expectancy ranking, and according to the latest data from the National Population and Housing Census, 13% of the population is over 60 years old (National Administrative Department of Statistics, DANE, 2018). Thus, it can be stated that the age pyramid has changed, that societies are aging and that this is due to improvements in biopsychosocial aspects, such as improved living conditions (Baumann et al., 2020; Jaul & Barron, 2017; Mackenbach et al., 2019), advances in medicine and, therefore, better physical health (Li et al., 2020; Lubitz et al., 2003; Scheier & Carver, 2018).

Despite aging societies and improvements in living conditions, the sexuality of older people remains a taboo subject (Rebec et al., 2015; Slack & Aziz, 2020) and is not even very frequently addressed in specific areas such as gerontology and geriatrics (Araújo & Fernández-Rouco, 2016). However, it is known that sexuality is a basic human need, regardless of age, since we are sexed beings from birth until we die (Sánchez-Fuentes et al., 2020b, p. 65). Sexuality goes beyond sexual functioning and coital sexual relations, since sexuality also refers to gender identities, eroticism, intimacy, and sexual orientation (WHO, 2006). However, most previous research on sexuality in older adults has focused on aspects related to sexual functioning, sexual dysfunctions and disorders (e.g., Geerkens et al., 2020; Laumann & Waite, 2008; Lewis et al., 2004; Palacios et al., 2009; Sierra et al., 2014) or how certain diseases or physical pathologies influence the sexual functioning of both older men and women (e.g., Heidari et al., 2019; Sanchez et al., 2017; Toprak et al., 2017; Træen et al., 2017).

It is estimated that approximately 10% of the world's population belongs to a sexual minority. In Colombia, approximately 1.2% of people aged between 18 and 65 and residing in urban centers identify themselves as belonging to the LGBT community (DANE, 2019). Another survey concluded that approximately 2.2% of the Colombian population identified themselves as LGBT (DANE, 2015). However, these figures probably do not reflect reality, since the survey carried out by DANE was carried out face to face and people may not be sincere when it comes to sexual issues, such as sexual orientation and, in addition, Colombia is a conservative country in terms of sexual attitudes (Sánchez-Fuentes et al., 2021; Sánchez-Fuentes et al., 2020a). In addition, older adults in Colombia were not included in the surveys, which is a limitation to the study of older adult sexual minorities. Therefore, this shows that older adults are and have been historically invisible (Fredriksen-Goldsen & Muraco, 2010).

Discrimination is associated with negative attitudes. On the one hand, ageism refers to the stereotype and discrimination against individuals or groups because of their age (Abrams, 2010). On the other hand, discrimination and negative attitudes against LGBT people are widespread and have negative consequences on the physical and psychological well-being of these minorities (Correro & Nielson, 2020; Mor-

risson et al., 2019). Negative attitudes towards old age have been shown to pose a risk for active aging (Swift et al., 2017). An example of this is that LGBT older adults more often suffer from physical illnesses and have poorer mental health than heterosexual people (Fredriksen-Goldsen et al., 2013, 2014; Meads, 2020). Exposure to chronic stress has also been shown to be associated with the onset of cardiovascular disease, depression and, in general, with worse health, which in turn is associated with a higher risk of premature cognitive decline in older LGBT adults (Fredriksen-Goldsen et al., 2017). Thus, aging linked to factors such as marginalization and discrimination increases the risk of violation of LGBT older adults.

Another fundamental aspect is related to the evaluation instruments to evaluate attitudes towards LGBT people. Most instruments assess homophobia in general and not negative attitudes towards older LGBT adults (Morrison et al., 2019). Furthermore, most of these instruments that were reviewed had psychometric limitations. Thus, Morrison et al., (2019) concluded that none of the revised scales ($N=32$) obtained a perfect score in terms of factorial structure, validity and evidence of reliability using the Omega statistic. However, there is an instrument that overcomes some of these limitations and that is also the only instrument that evaluates attitudes towards LGBT older adults, the Attitude Scale to Lesbian, Gay, Bisexual and Transgender Old Age (EAFV-LGBT; Medeiros et al., 2019).

The EAFV-LGBT (Medeiros et al., 2019) is a scale that was developed based on the Theory of Attitude (Rodrigues et al., 1999) since it has been proven that attitudes are predictors of behaviors (Ajzen, 2012). The preliminary version of the EAFV-LGBT (Medeiros et al., 2019) consisted of 29 items that evaluate attitudes towards LGBT older adults and a 5-point Likert-type response scale (1 = *Strongly Disagree* to 5 = *Strongly Agree*), higher scores indicate negative attitudes towards older LGBT people. The final version of the scale (Medeiros et al., 2019) was made up of 10 items and showed adequate psychometric properties, since the goodness of fit indices were adequate and confirmed a one-dimensional structure and the internal consistency reliability was also adequate ($\omega=0.77$; $\alpha=0.79$).

Therefore, the EAFV-LGBT is the unique scale that exists to assess attitudes towards LGBT older adults and that has also shown adequate psychometric properties in the Brazilian sample, although its convergent validity needs to be examined. In Colombia there is no previous research that has evaluated attitudes towards LGBT older adults, except for the results obtained by the National Demographic and Health Survey (DANE, 2015). Therefore, the main aim of the present study was to translate and examine the psychometric properties of the Attitude Scale to Lesbian, Gay, Bisexual and Transgender Old Age (EAFV-LGBT; Medeiros et al., 2019) for men and women in a Colombian sample. The specific aims were: (a) To validate the factorial structure of the scale; and (b) to evidence the reliability and validity of this construct throughout its relationship with variables such as homophobia and five personality factors or domains. Regarding the hypothesis, we predicted the following:

H. 1 The structure of the EAFV-LGBT will be unidimensional (Medeiros et al., 2019).

H. 2 Individuals who report more explicit and implicit homophobia show a more negative attitudes towards LGBT older adults (Morrison et al., 2019).

H. 3 Individuals who show less openness, extraversion, agreeableness, conscientiousness, and emotional stability as personality traits will show more negative attitudes towards older LGBT people (Crawford & Brandt, 2019).

Method

Participants

Data were collected from 749 participants. Of these, 131 were eliminated because they did not answer 25% or more items, and 97 were dropped because they did not meet the inclusion criteria. Our inclusion criteria were: (a) being 18 years of age or older; (b) have Colombian nationality. Thus, the final sample was made up 521 Colombian adults (36.3% men and 63.7% women). Their age range was 18 to 60 years old ($M=27.39$; $SD=9.27$). Most of the participants were heterosexual (81.6%), had university studies (73.3%), a medium (40.9%) and low socioeconomic level (22.3%), professed the Catholic religion (53.6%), knew LGBT people (96.9%), and had close contact with LGBT people (81.6%). Table 1 shows the sample's socio-demographic characteristics in detail.

Measures

Socio-Demographic and Sexual History Questionnaire. The participants were asked about their gender, age (in years), nationality, educational level, socioeconomic level, professed religion, if they have friendship or pairing with an LGBT person and if they know an LGBT person.

Kinsey Scale (Kinsey et al., 1948). This scale assesses sexual orientations using eight response options (1=*exclusively heterosexual* to 7=*exclusively homosexual*).

Attitude Scale to Lesbian, Gay, Bisexual and Transgender Old Age (EAFV-LGBT; Medeiros et al., 2019). We used the Hispanic adaptation made in the present research. The scale consisted of 10 items to assess negative attitudes towards LGBT older people. As mentioned above, a higher score indicates greater negative attitudes towards LGBT older people. The original version of the scale showed adequate psychometric properties (Medeiros et al., 2019).

Subtle and Manifest Prejudice Scale towards Homosexuals (Del Castillo et al., 2003). This scale assesses homophobia through two dimensions: explicit homophobia and implicit homophobia. Its 17 items are answered on Likert-type scales including seven response options (1=*totally disagree* to 7=*totally agree*). A higher score indicates more explicit and implicit homophobia. In this study, Cronbach's alpha values was 0.74 for explicit homophobia and 0.70 implicit homophobia.

Big Five Personality Trait Short Questionnaire (BFPTSQ; Morizot 2014). We employed the Spanish adaptation (Ortet et al., 2017). This questionnaire assesses the five personality factors or domains: openness, extraversion, agreeableness, conscientiousness, and emotional stability. Its 50 items are answered on Likert-type scales including five response options (1=*totally disagree* to 5=*totally agree*). A higher score indicates more openness, extraversion, agreeableness, conscientiousness, and

Table 1 Sociodemographic Characteristics

Baseline characteristic	<i>N</i> (521)	%
Sexual orientation	425	81.6
Heterosexual	23	4.4
Heterosexual, with homosexual contacts	16	3.1
Bisexual	13	2.5
Homosexual, with heterosexual contacts	44	8.4
Homosexual		
Education level	1	0.2
Primary Ed	60	11.5
Secondary Ed.	382	73.3
University	78	15
Postgraduate		
Socioeconomic level	68	13.1
Very low	139	26.7
Under	213	40.9
Half	84	16.1
Medium-high	14	2.7
High	3	0.6
Very high		
Religion	279	53.6
Catholic	116	22.3
Christian	10	1.9
Protestant Christian	1	0.2
Bean	3	0.6
Buddhist	3	0.6
Other	109	20.9
None		
Meet LGBT people	505	96.9
Yes	16	3.1
Not		
Proximity to LGBT people	425	81.6
Yes	96	18.4
Not		

emotional stability. The original version (Morizot, 2014) and the Spanish version (Ortet et al., 2017) have adequate psychometric properties, both in terms of reliability and validity. In this study, Cronbach's alpha values was 0.80 for openness, 0.81 for extraversion, 0.74 for agreeableness, 0.81 for conscientiousness and 0.81 for emotional stability.

Procedure

First, we obtained permission to adapt and validate the scale from the authors of the EAFV-LGBT (Medeiros et al., 2019). Next, a member of the research group, bilingual psychologists, and psychometric experts, conducted the translation and adaptation of the scale from Portuguese to Spanish. The initial translation was first evaluated by a bilingual expert and one of the study investigators with knowledge of psychometrics and sexual minorities. Subsequently, a bilingual expert performed a back translation. We compare the version obtained with the original version, and we make slight modifications to some items to avoid literal translations, although we do not modify the content. Then, the Spanish version was sent to 10 Spanish experts in psychological assessment and sexuality research to identify and suggest needed

changes to items. No changes were made in this phase. Finally, we apply the version obtained to 20 individuals with similar sociodemographic characteristics to the final sample. They were asked to what extent they understood each item. If they found any ambiguous term of expression, they had to indicate which one and why. As all the items achieved 80% agreement about their clarity, therefore no changes were made. To carry out the procedure described for the adaptation and translation of the scale, we follow the recommendations of previous research (Elosua et al., 2014; Muñiz et al., 2013).

Second, participants were invited to participate in an online survey. The URL was distributed on social networks and via the news service of the University [BLINDED]. Participants answered a security question before accessing the survey. The first page of the survey showed the informed consent, where the participants were informed of the main objective of the study, inclusion criteria and that their participation was anonymous and voluntary. Non probabilistic sampling was used with the general population in Colombia. All participants were volunteers and did not receive any compensation for taking part in this study. This study was approved by the Ethics Committee.

Data Analysis

We employed Factor software (Lorenzo-Seva & Ferrando, 2006) to perform Exploratory Factor Analysis (EFA) and analyze the dimensionality of the EAFV-LGBT. The analysis was implemented considering the polychoric correlation matrix, due to the ordinal nature of this measure, adopting the Robust Diagonally Weighted Least Squares extraction method (RDWLS; Asparouhov & Muthen 2010). The decision on the number of factors to extract was made considering the Hull method (Lorenzo-Seva et al., 2011) and the adequacy of the model to the data was evaluated based on the following indicators (acceptable values in parentheses; Brown 2006; Kline, 2015): Goodness of Fit Index (GFI>0.95), Adjusted Goodness of Fit Index (AGFI>0.95), Comparative Fit Index (CFI>0.95) and Tucker-Lewis Index (TLI>0.95). To reinforce the structure of the measure, we used the following unidimensional criteria (values that attest to unidimensional in parentheses; Ferrando & Lorenzo-Seva 2018): Unidimensional Congruence (UniCo>0.95), Explained Common Variance (ECV>0.85) and Mean of Item Residual Absolute Loadings (MIREAL<0.30). Finally, the stability of the factor solution was evaluated using the H index, with values above 0.80 suggesting a well-defined latent variable that is likely to be replicated in future studies (Ferrando & Lorenzo-Seva, 2018). The SPSS software was used to calculate descriptive statistics (e.g., mean, standard deviation) and correlation analysis to verify the convergent validity of EAFV-LGBT (Spearman's rho).

Results

Validity evidence based on Internal structure

Through Bartlett's sphericity test (2602.8, $df=45$, $p<.001$) and Kaiser-Meyer-Olkin=0.89, it was found that the polychoric correlation matrix is factorable. The Hull method indicated that a one-factor structure is more suitable for the data (GFI=0.97; AGFI=0.97; CFI=0.96), a decision endorsed by the following one-dimensionality indicators (Ferrando & Lorenzo-Seva, 2018): Unidimensional Congruence (UniCo=0.96), Explained Common Variance (ECV=0.83) and Mean of Item Residual Absolute Loadings (MIREAL=0.27). Table 2 shows the factor loads of the items, as well as the replicability estimates of the factor scores (H-index; Ferrando & Lorenzo-Seva 2018), in addition to the internal consistency coefficients EAFV-LGBT.

The general factor presented an eigenvalue of 5.13, explaining 51% of the variance, having items with adequate factor loadings (>0.30), ranging from 0.59 (Item 10. *I believe that LGBT seniors are more likely to have sexually transmitted infections and HIV/AIDS*) to 0.81 (Item 6. *I would be ashamed if I had a grandparent and/or elderly relative who was LGBT*). Regarding Composite Reliability, an adequate value was found ($CC=0.89$), as well as the value of McDonald's omega ($\omega=0.89$), being such a well-defined structure and likely to replicate in new studies ($H\text{-latent}=0.90$ and $H\text{-Observed}=0.88$).

Evidence of Validity based on correlations with external variables

The total score on the EAFV-LGBT was positively and statistically significantly associated with higher explicit homophobia ($r=.68$; $p<.001$) and higher implicit homophobia ($r=.65$; $p<.001$). In addition, the total score of the scale was also related to personality traits. Specifically, more negative attitudes towards LGBT older adults were related to less openness ($r=-.25$; $p<.001$), less extraversion ($r=-.12$; $p<.01$), and less agreeableness ($r=-.16$; $p<.001$). There was no statistically significant relationship between negative attitudes towards LGBT older adults and the personality traits conscientiousness and emotional stability. These results are presented in Table 3.

Discussion

The main goal of this study was to examine the psychometric properties of the Colombian version of the Attitude Scale to Lesbian, Gay, Bisexual and Transgender Old Age (EAFV-LGBT; Medeiros et al., 2019), scale that was developed based on the Theory of Attitude (Rodrigues et al., 1999). The results showed adequate reliability as well as construct, and convergent validity. Thus, the Colombian version of the EAFV-LGBT can be employed by researchers working with Colombian populations to assess negative attitudes towards older LGBT people. In addition, this scale can be

Table 2 Factor Structure of the EAFV-LGBT

Items	Factor Loading
Me gustaría conocer a ancianos LGBT y tener amistad con ellos [I would like to meet and be friends with elderly LGBT]	-0.62
Los ancianos LGBT relatan buenas experiencias con sabiduría a los jóvenes [Elderly LGBT transmit good experiences]	-0.60
Los ancianos LGBT pueden participar en grupos de convivencia para ancianos [Elderly LGBT can be members of social groups]	-0.61
Creo que los ancianos LGBT no deben participar en congregaciones religiosas reunidas en lugares de culto religioso [Elderly LGBT cannot attend religious services]	0.62
No me sentaría cerca de un anciano LGBT en un transporte público [I would not sit close to an elderly]	0.77
Sentiría vergüenza si tuviera un abuelo/a y/o familiar de edad avanzada que fuera LGBT [I would be embarrassed to have an LGBT grandmother/grandfather]	0.81
La vejez está marcada por el arrepentimiento de ser LGBT [LGBT old age is marked my regret]	0.62
Los ancianos LGBT avergüenzan a sus familias y/o parientes [Elderly LGBT people embarrass their families]	0.70
Los ancianos LGBT no deben cuidar a niños y adolescentes [Elderly LGBT should not take care of children]	0.77
Creo que los ancianos LGBT son más propensos a tener alguna Infección de Transmisión Sexual y el VIH/SIDA [Elderly LGBT persons are more prone to have STDs]	0.59
Ômega de McDonald ordinal	0.89
Confiabilidad Composta	0.89
H-Latent	0.90
H-Observed	0.88

useful for the development of programs to promote positive attitudes and tolerance towards elderly sexual minorities.

The Colombian version of the EAFV-LGBT overall showed good psychometric properties. Thus, the first hypothesis proposed in this research is fulfilled, since the one-dimensional structure of the scale proposed in the original version was corroborated (Medeiros et al., 2019). Moreover, the internal consistency was good both for the measures and for the individual items without being so high that it constitutes a threat to its construct validity (Nunnally & Bernstein, 1994). Even the ω value was higher in the present sample ($\omega=0.89$) than in the original Brazilian version ($\omega=0.77$).

Regarding the convergent validity, and in accordance with the second proposed hypothesis, we found that individuals who show greater explicit and implicit homophobia have greater negative attitudes towards LGBT older adults. This result

Table 3 Zero-Order correlations between EAFV-LGBT and Homophobic scale and Big Five Inventory Trait Short Questionnaire

	1	2	3	4	5	6	7
1. EAFVLGBT	-						
2. Explicit homophobic	0.68***	-					
3. Implicit homophobia	0.65***	0.74***	-				
4. Openness	-0.25***	-0.29***	-0.30***	-			
5. Conscientiousnes	-0.05	0.05	0.01	0.40***	-		
6. Extraversion	-0.12**	-0.09*	-0.08	0.60***	0.48***	-	
7. Agreeableness	-0.16***	-0.14**	-0.12**	0.46***	0.60***	0.50***	-
8. Emotional stability	0.03	0.01	-0.01	0.31***	0.56***	0.49***	0.53***

* $p < .05$, ** $p < .01$, *** $p < .001$.

is not surprising, since homophobia is discrimination against non-heterosexual people and this can be explicit, that is, uncovered attitudes, thoughts and/or behaviors (e.g., rejection of LGBT people; physical and/or verbal violent behavior towards LGBT people, etc.) or implicit, that is, covert attitudes, thoughts and/or behaviors (e.g., “I wouldn’t mind being friends with a homosexual person if it doesn’t “show very much” that he/she is homosexual”; “I respect gay people, but I don’t think they should get married”). Therefore, this result shows that the Colombian version EAFV-LGBT has adequate convergent validity, when it correlates with another measure that evaluates homophobia (Del Castillo et al., 2003).

In addition, the third hypothesis was confirmed. It was found that there was a statistically significant relationship between personality traits and negative attitudes towards older LGBT people. Participants with lower openness, lower extraversion, and lower agreeableness reported more negative attitudes toward older LGBT people. This result is not surprising since meta-analyses have concluded that low levels of openness and agreeableness are correlated with generalized prejudice (Akrami et al., 2011; Sibley & Duckitt, 2008). Likewise, previous studies have concluded that personality traits such as low openness to experience, low extroversion, and less cordiality are related to homophobia (Allen & Walter, 2018; Cullen et al., 2002; Lal & Garg, 2020; Lingardi et al., 2016; Martino, 2019).

Despite the adequate psychometric properties of the EAFV-LGBT, it is required to mention the limitations from this study. The main limitation is that the results cannot be generalized to the general Colombian population, since the participants were recruited through non-probabilistic incidental sampling. Another limitation is the social desirability inherent in self-report measures, so it would be interesting to conduct future research using some implicit measure to assess LGBT attitudes toward old age (see Gouveia et al., 2014). It is also interesting to carry out future research with the purpose of knowing the predictors of these attitudes (e.g., orientation to social dominance, human values) and verify the predictive power related to the intention to maintain contact with older LGBT people. Likewise, it will be interesting to adapt the EAFV-LGBT in Spanish-speaking sample to expand its use, since it is known that the functioning of the items may vary depending on the country (Bringas-Molleda et al., 2017; Sánchez-Fuentes et al., 2020a). Finally, future researchers are recommended in which the DEAF-LGBT is validated using more diverse samples, in terms of sexual orientation, age and educational level.

Nonetheless, the EAFV-LGBT is a self-reported measure with adequate psychometric properties, reliability, and validity to assess attitudes towards older LGBT people, which provides a global score. For this reason, the EAFV-LGBT can be useful for research contexts, and the development of programs, directed to the general population, to promote positive attitudes and tolerance towards elderly sexual minorities because if LGBT youth suffer discrimination, negative attitudes towards older people belonging to sexual minorities are even greater.

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Data Availability Survey data collected and kept confidential and thus not available beyond this project.

Declarations

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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