Loyola Generativity Scale and Generative Behavior Checklist: A Psychometric Study with Spanish LGBT+ Older Adults

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Loyola Generativity Scale y Generative Behavior Checklist: Un estudio psicométrico con personas mayores españolas LGBT++

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Abstract

Background: Generativity has been associated with resilience and life satisfaction in older age, including among lesbian, gay, bisexual, and transgender (LGBT+) older adults.
Objective: To examine the psychometric properties of the Loyola Generativity Scale (LGS) and Generative Behavior Checklist (GBC) for Spanish LGBT+ older adults (over the age of 50).
Methodology: A psychometric study was conducted with 141 Spanish LGBT+ older adults to examine the construct validity (exploratory factor analysis), convergent validity, and reliability (internal consistency) of the LGS and the GBC.
Results: Parallel and exploratory factor analyses suggested a two-factor model with good sample adequacy for both scales. The LGS explained 45.1% of the variance and had an internal consistency of 0.78. The GBC explained 41.76 % of the variance and had an internal consistency of 0.879. A positive and statistically significant correlation was found between life satisfaction and the generative scales. A positive and significant correlation ($r_s = 0.310$) was also observed between both instruments.
Conclusion: Both instruments proved valid and reliable for measuring generativity in Spanish LGBT+ older adults.

Keywords: LGBT persons; older adults; generativity; validation study

Resumo

Enquadramento: A generatividade tem sido associada à resiliência e à satisfação com a vida na velhice, incluindo entre a população lésbica, gay, bissexual e transgénero (LGBT+) mais velha.
Objetivo: Analisar as propriedades psicométricas da *Loyola Generativity Scale* (LGS) e da *Generative Behavior Checklist* (GBC) para idosos espanhóis LGBT + (com mais de 50 anos).
Metodologia: Foi realizado um estudo psicométrico com 141 idosos espanhóis LGBT+ com o objetivo de examinar a validade de construto (análise fatorial exploratória), a validade convergente e a fiabilidade (consistência interna) da LGS e da GBC.
Resultados: Os métodos de análise paralela e a análise fatorial exploratória sugeriram um modelo de dois fatores para ambos os instrumentos com boa adequação da amostra. A LGS explicou 45,1% da variância e apresentou uma consistência interna de 0,78. O GBC explicou 41,76% da variância e apresentou uma consistência interna de 0,879. Foi encontrada uma correlação positiva e estatisticamente significativa entre a satisfação com a vida e as escalas generativas. Foi também observada uma correlação positiva e significativa ($r_s = 0,310$) entre os dois instrumentos.
Conclusão: Ambos os instrumentos demonstraram ser válidos e fiáveis para medir a generatividade em idosos espanhóis LGBT+.

Palavras-chave: pessoas LGBT; pessoa idosa; generatividade; estudo de validação

Resumen

Marco contextual: La generatividad se asocia con la resiliencia y la satisfacción con la vida en la vejez, incluidas las de las personas adultas lesbianas, gays, bisexuales y transexuales (LGBT+).
Objetivo: Examinar las propiedades psicométricas de la Loyola Generativity Scale (LGS) y la Generative Behavior Checklist (GBC) en adultos mayores LGBT+ españoles (mayores de 50 años).
Metodología: Estudio psicométrico con 141 adultos mayores LGBT+. Se analizó la validez de constructo (análisis factorial exploratorio), la validez convergente y la consistencia interna de cada escala.
Resultado: Los análisis factoriales paralelos y exploratorios sugieren un modelo bifactorial para ambas escalas con una buena adecuación a la muestra. La LGS explica el 45,1% de la varianza y tiene una consistencia interna de 0,78. La GBC explica el 41,76% de la varianza y tiene una consistencia interna de 0,879. Se encontró una correlación positiva estadísticamente significativa entre la satisfacción con la vida y las escalas de generatividad. Las dos escalas mostraron una correlación positiva y significativa ($r_s = 0,310$).
Conclusión: Ambas escalas han demostrado ser válidas y fiables para medir la generatividad en adultos mayores LGBT+ españoles.

Palabras clave: personas LGBT; persona mayor; generatividad; estudio de validación

Introduction

In 1950, Erikson coined the term 'generativity' to describe a midlife task that involved the "concern in establishing and guiding the next generation" (Erikson, 1963, p. 267). Later studies also described generativity as a task conducted throughout adulthood with particular relevance in middle and old age (Aubin & McAdams, 1995). The study of generativity has focused on two aspects: generative concern and generative action Generative concern is a tendency or interest in caring for younger individuals, while generative action entails actual behaviors that promote the well-being of future generations (Garcia-Romero et al., 2017). Generativity has been widely associated with well-being and satisfaction with life in adulthood and old age in several population groups (Wiktorowicz et al., 2022) and it is considered relevant for well-being and satisfaction with life as it activates a personal feeling of fulfillment and a sense of symbolic continuity (Wiktorowicz et al., 2022). Generativity can be measured through interviews, direct observation, and case studies (Doerwald et al., 2021). However, the most widely used method is the self-report questionnaire – namely, the Loyola Generativity Scale (LGS) and the Generative Behavior Checklist (GBC), both developed by McAdams and Aubin (1992). The original versions of the LGS and GBC (McAdams and Aubin, 1992) and their Spanish versions (Villar et al., 2013) were validated for the older population. Still, their psychometric proprieties have not been examined for lesbian, gay, bisexual, and transgender (LGBT+) older adults. Hence, our study examines the psychometric properties (validity and reliability) of the LGS and the GBC for Spanish LGBT+ older adults (over 50 years old).

Background

The LGS and the GBC are the instruments more commonly used to measure generativity. The LGS assesses an individual's concern for various generative behaviors, such as contributing to the community or being creative and productive (Doerwald et al., 2021). The GBC consists of a checklist of behaviors exhibited (or not) in the last two months. These instruments have been used before with older adults (Busch & Hofer, 2022; Villar et al., 2013) and specific populations, such as individuals diagnosed with mental illness and distress (Jordan et al., 2022). However, studies with LGBT+ older people are scarce, making the validation of these instruments with this population especially relevant for two main reasons. First, generativity is culturally, socially, and historically influenced. The LGBT+ population in Spain that is currently over 50 years old lived under a dictatorship that severely criminalized and pathologized LGBT+ individuals. Since 1975 with the establishment of democracy in Spain, several social and human rights movements have fought for the current degrees of legal support and formal inclusion (Casado et al., 2023). However, social attitudes are still not aligned with the legislation, although they have evolved in recent decades toward greater acceptance. Thus, LGBT+ people continue to experience significant health disparities and suffer from discrimination and harassment in various areas, such as in access to the healthcare system, within their families, and in the workplace (Lampe et al., 2023). These experiences can influence LGBT+ individuals' generative concerns and behaviors.

Second, research on the LGBT+ community has focused on topics such as young individuals (Casado et al., 2023) and stigma, discrimination and prejudice, violence, mental disorders, psychological distress, and loneliness (Casado et al., 2023). Therefore, it is relevant to conduct studies on the LGBT+ community focused on older adults and a more positive perspective, specifically on what can bring them satisfaction with life and well-being as they age (Tavares et al., 2023). Some studies have suggested that generativity is a significant resilience factor for LGBT+ older adults (Bower et al., 2021). In addition, research suggests that older members of the LGBT+ community seek meaning in the marginalization suffered in their past so they can influence the future efforts (be generative) of the younger generation to achieve social equality (Tavares et al., 2023).

Research question

What are the psychometric properties of the LGS and the GBC for Spanish-speaking LGBT+ older adults (over 50 years old)?

Methodology

This psychometric study is part of a larger project entitled "Generativity, Intended Legacies, Social Participation and Life Satisfaction in Spanish LGBT+ Older Adults," approved by the Research Ethics Committee of the *Universidad Illes Balears* [162CER20].

Participants

A non-probabilistic sample was used in our study. The inclusion criteria were (a) to self-identify as LGBT+, (b) to be over 50 years old, and (c) to live in Spain. A ratio of five participants per item was determined for the sample size. The final sample included 141 participants, with a mean age of 58.59 ± 5.80 years, ranging from 51 to 80 years. Regarding gender identity, 61.7% self-identified as cisgender men, 28.3% as cisgender women, 5.7% as transgender women, and 4.3% as non-binary. Regarding sexual orientation, 63.6% self-identified as gay, 27.9% as lesbian, 7.1% as bisexual and 1.4% as heterosexual. In addition, 76.6% of participants had higher education, and 67.4% were employed.

Instruments

Sociodemographic data were collected regarding the participants' age, sexual orientation (lesbian, gay, bisexual, heterosexual, other), gender identity (cisgender woman, cisgender man, transgender woman, transgender man, other), marital status, years of formal education, and

employment status.

The LGS was developed by McAdams and Aubin(1992) and consists of 20 self-reported statements measuring generativity concerns in the adult population. The respondents should indicate how often the statement included in each item applies to them: 0 = *never*; 1 = *occasionally or seldom*; 2 = *fairly often*; or 3 = *very often or almost always*. Items 2, 5, 9, and 13–15 were reversed. McAdams and Aubin (1992) identified two key factors: "Positive generativity" (14 items; positively worded) and "Generative doubts" (6 items; negatively phrased). A total score ranging between 0 – 60 is achieved by adding the respondents' answers. Higher scores express greater generative concerns and awareness of responsibility, while lower scores indicate a self-image framed by a low capacity to influence others. The instrument's Cronbach's alpha (α) coefficient was 0.83, and the test–retest reliability was considered adequate ($r = 0.73$) for a three-week interval (McAdams and Aubin, 1992). Villar et al. (2013) translated, adapted, and validated the Spanish version of this instrument for the older adult population with 165 older adults (66–100 years old). Construct validity showed a two-factor model consisting of 14 items – "Positive generativity" (with 10 items) and "Generative doubts" (with 4 items) – with a Cronbach's α coefficient of 0.89 for the total scale, 0.78 for the subscale "Positive generativity," and 0.62 for the subscale "Generative doubts."

The GBC, developed by McAdams and Aubin (1992) for adults, measures everyday actions that suggest generativity. The GBC includes 65 items regarding behaviors: 49 generative behaviors and 16 neutral behaviors (e.g., go to a movie or play). The GBC is a self-reported instrument in which participants respond by identifying how often they performed a given behavior during the previous two months (0 = *have not performed that behavior*; 1 = *performed that behavior once*; and 2 = *performed that behavior more than once*). The GBC demonstrated construct validity by correlating positively with the LGS ($r = 0.53$) and other measures of generativity (McAdams and Aubin, 1992; McAdams et al., 1993). Its Spanish version was translated, adapted, and validated by Villar et al. (2013) with 165 older adults (66–100 years old). Villar et al. (2013) considered a shorter version of the scale would be more appropriate for older adults. Therefore, the authors eliminated the neutral items and selected the most relevant acts for older adults that suggest generativity. Their version consists of 29 items with responses similar to the original version. The only difference is that the timeframe refers to the last month instead of the previous two months. The total score, ranging from 0 to 58, is obtained by adding the respondents' answers. Higher scores indicate more generative actions. The exploratory factor analysis (EFA) defined a four-factor model (caring, collaborating, donate, volunteering) that explained 36.4% of the variance (Villar et al., 2013). In terms of internal consistency, the GBC total scale had a Cronbach's α of 0.81, the Caring factor had a Cronbach's α of 0.63, the Collaborating factor had a Cronbach's α of 0.64, the Donate factor had a Cronbach's α of 0.64, and the "volunteering" factor had a Cronbach's α of 0.69. Like the

original version, the Spanish version showed a significant moderate correlation with the LGS ($r_s = 0.49$; $p < .001$). The Satisfaction with Life Scale (SWLS), developed by Diener et al. (1985), assesses the cognitive aspect of life satisfaction. It consists of five items rated on a 5-point Likert scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The original version has high internal consistency (Cronbach's α = 0.83) and good test-retest reliability ($r_s = 0.82$) over 2 months. Pons et al. (2000)validated the Spanish version with older adults (60–91 years old). The total score is obtained by adding the answers to all five items. The scores range from 5 to 25, with higher scores indicating higher life satisfaction. The Spanish version showed good internal consistency (α = 0.82).

Procedure

The sample selection began by contacting LGBT+ organizations to disseminate our study and sharing an online survey about satisfaction with life and generativity. A form containing information about the project, its researchers, and contact information was also provided. The organizations that agreed to collaborate with us sent an email invitation to their members with the link to the online survey. After providing their informed consent, the participants could access the survey, which took about 15 minutes to complete. Finally, the participants had to submit the completed form considering the instructions provided. Data were collected between October 2020 and December 2021, and two email reminders were sent to the organizations asking them to share the study with their members in order to increase the response rate.

Data analysis

Regarding the sociodemographic and social participation variables, frequency and percentage were used for the categorical variables, and mean and standard deviation were used for the continuous variables.

Construct validity was determined by conducting an EFA to validate the LGS and the GBC using the principal components method and Varimax rotation. The Kaiser-Meyer-Olkin measure (KMO) > 0.5 and Bartlett's Test of Sphericity were used to determine the sample adequacy (Hair et al., 2019). Parallel analysis (PA) based on minimum rank factor analysis was also used to calculate the number of factors. The following criteria were considered to establish the number of items per factor: loading > 0.4 and percentage of total variance > 40.0%. Items with loading < 0.4 and cross-loadings > 0.4 were removed successively until an adequate model was obtained.

Internal consistency (reliability) was evaluated by measuring Cronbach's α.

Convergent validity between the LGS, the GBC, and the SWLS was established by determining *Spearman's rank* correlation coefficients (0–0.39, weak; 0.40–0.69, moderate; 0.70–0.89, strong; ≥ 0.90, very strong; Schober et al., 2018).

The statistical analysis was performed using the SPSS version 28 software, and the PA was conducted using the FACTOR software. A $p < 0.05$ was considered statistically significant.

Results

Validation of the LGS and the GBC for Spanish LGBT+ older adults (over 50 years old)

EFA were conducted on the LGS and the GBC. The first EFA for the LGS obtained a KMO value of 0.767 and a score for Bartlett's test of sphericity of $p < 0.01$, indicating sufficient data adequacy to conduct an EFA. A two-factor model emerged from the PA, and a new EFA was performed with the extraction fixed at two factors. Items were removed considering the criteria established for factor loadings and cross-loadings. This process was repeated several times until no items needed to be removed. Overall, six items were removed: five items with a factor loading < 0.4 (items: 3, 5, 8, 9, and 11) and one item with cross-loading (item 10). The final two-factor model (KMO = 0.79 and Bartlett's Test of Sphericity, $p < 0.01$) accounted for a total variance of 45.1% (Table 1). Considering the original and Spanish versions, Factor 1, designated Positive generativity, includes ten items and explains 29.6% of the variance. Factor 2, named Generative doubts, includes four items and explains 12.5% of the variance (Table 1). Positive generativity indicates responsibility and confidence in guiding the next generation and the community. Generative doubts portray the sense of having little ability to influence and contribute to others. The internal consistency scores were as follows: total Cronbach's α = 0.78; Positive generativity Cronbach's α = 0.82; and Generative doubts Cronbach's α = 0.51.

Table 1

Factor Loading Coefficients of the LGS (n = 141)

Items	M ± SD	Positive generativity	Generative doubts
19. People come to me for advice.	1.80 ± 0.71	0.704	
12. I have important skills that I try to teach others.	1.96 ± 0.74	0.688	
6. I have made and created things that have had an impact on other people.	1.97 ± 0.67	0.669	
17. Other people say that I am a very productive person.	1.96 ± 0.69	0.662	
1. I try to pass along the knowledge I have gained through my experiences.	2.40 ± 0.64	0.657	
7. I try to be creative in most things I do.	2.19 ± 0.75	0.634	
20. I feel as though my contributions will exist after I die.	1.41±0.85	0.591	
16. I have made commitments to many kinds of people, groups and activities in my life.	2.28 ± 0.75	0.554	
4. I feel as though I have made a difference to many people.	2.05 ± 0.77	0.514	
18. I have a responsibility to improve the neighborhood in which I live.	1.99 ± 0.91	0.494	
13. I feel that I have done nothing that will survive after I die.	1.99 ± 0.89		0.651
15. I feel as though I have done nothing of worth to contribute to others.	2.43 ± 0.73		0.651
2. I do not feel that other people need me.	2.20 ± 0.77		0.604
14. In general, my actions do not have a positive effect on others.	1.99 ± 0.88		0.444
% of variance	45.10	29.59	15.51
M ± SD	28.64 ± 5.43	20.02 ± 4.63	8.62 ± 2.09
α	0.775	0.822	0.514

Note. LGS = Loyola Generativity Scale; M = Mean; SD = Standard Deviation; α = Cronbach's alpha.

The initial EFA for the GBC presented a KMO of .848 and Bartlett's Test of Sphericity score of $p < 0.01$, suggesting that the data adequacy was sufficient to conduct an EFA. A two-factor model emerged from the PA. We performed a new EFA using the two-factor structure and removed items based on the criteria established for factor loadings and cross-loadings. This process was repeated several times until no items needed to be removed. Overall, nine items were removed – five with loadings < 0.4 (items: 2, 3, 5, 8, 27) and four with cross-loadings (items: 21, 25, 26, 28) – leaving 20 items across two factors. The final two-factor model (KMO = 0.855 and Bartlett's Test of Sphericity $p < .01$) accounted for a total variance of 41.67% (Table 2). Factor 1, designated as "Volunteering and donate," includes 11 items and explains 32.26% of the variance. Factor 2, named "Collaboration and care," includes nine items and explains 9.41% of the variance. Volunteering and donate implies offering and contributing to others (relatives or community members) personally or through institutions. Collaboration and care imply contributing to or collaborating in the care of someone (close relatives

or community members) or something (e.g., volunteering, donating money, organizing trips). The internal consistency value (Cronbach's α) of the GBC was 0.879 for the global scale, 0.862 for the "Volunteering and donate" subscale and 0.765 for the "Collaboration and care" subscale (Table 2).

Table 2

Factor Loading Coefficients of the GBC (n = 144)

Items	M ± SD	Volunteering and donate	Collaboration and care
28. Volunteered for a charity	1.18 ± 0.94	0.739	
18. Attended a community or neighborhood meeting.	0.93 ± 0.88	0.710	
10. Contributed time or money to a political or social cause.	1.51 ± 0.75	0.670	
4. Gave money to a charity.	1.53 ± 0.71	0.638	
1. Visited someone in a hospital or nursing home.	1.04 ± 0.96	0.626	
22. I have donated money to people in need.	1.06 ± 0.88	0.620	
17. Organized a trip, a party or social event	1.17 ± 0.87	0.617	
11. Have given money to family or friends.	1.30 ± 0.81	0.604	
12. Have helped close people with their problems.	1.52 ± 0.67	0.583	
6. Have managed a group to achieve a common good.	1.16 ± 0.89	0.572	
23. Wrote a poem or story.	0.86 ± 0.85	0.456	
14. Taught someone a skill.	1.44 ± 0.76		0.706
20. Caring about a family's well-being.	1.75 ± 0.59		0.686
7. I continued doing my job	1.48 ± 0.78		0.586
15. Helped others in their work.	1.54 ± 0.72		0.579
13. Restored or rehabbed a house, part of a house, a piece of furniture, etc.	1.40 ± 0.74		0.537
9. Attended to the needs of close people.	1.72 ± 0.52		0.519
16. Planted a plant or cared for a pet.	1.57 ± 0.71		0.501
19. Have given some advice to other people about decisions to make.	1.36 ± 0.75		0.473
24. Help my children in daily activities.	0.53 ± 0.87		0.451
% of variance	41.67	32.26	9.41
α	0.879	0.862	0.765

Note. GBC = Generative Behavior Checklist; *M* = Mean; *SD* = Standard Deviation; α = Cronbach's alpha

Convergent validity
Statistically significant and positive correlations were found between the SWLS and the LGS-total (r_s = 0.380), the LGS-positive generativity (r_s = 0.298), and the LGS-generative doubts (r_s = 0.308). A weak but significant correlation was established between the SWLS and the GBC total score (r_s = 0.285) and the subscale GBC-collaboration and care (r_s = 0.261; Table 3). The LGS and the GBC showed a positive and significant correlation (r_s = 0.310). There was a significant correlation between the GBC subscales ("Volunteering and donate" and "Collaboration and care") and the LGS-total (r_s = 0.283 and r_s = 0.267, respectively; see Table 3. LGS positive generativity positively correlated with the GBC-total (r_s = 0.330) and with both the "Volunteering and donate" and "Collaboration and care" subscales, with r_s = 0.308 and r_s = 0.263, respectively (Table 3).

Table 3

Correlation between the SWLS, the LGS, and the GBC (n = 141)

	SWLS	LGS	LGS- F1	LGS-F2	GBC	GBC-F1	GBC-F2
SWLS	1						
LGS	$r_s = 0.380^{***}$	1					
LGS-F1	$r_s = 0.298^{***}$	$r_s = 0.904^{***}$	1				
LGS -F2	$r_s = 0.308^{***}$	$r_s = 0.568^{***}$	$r_s = 0.200^{*}$	1			
GBC	$r_s = 0.210^{*}$	$r_s = 0.310^{***}$	$r_s = 0.330^{***}$	$r_s = 0.064$	1		
GBC-F1	$r_s = 0.135$	$r_s = 0.283^{***}$	$r_s = 0.308^{***}$	$r_s = 0.055$	$r_s = 0.942^{***}$	1	
GBC-F2	$r_s = 0.261^{**}$	$r_s = 0.267^{**}$	$r_s = 0.263^{**}$	$r_s = 0.087$	$r_s = 0.798^{***}$	$r_s = 0.565^{***}$	1

Note. r_s = Spearman rank coefficient; LGS = Loyola Generativity Scale; GBC = Generative Behavior Checklist; SWLS = Satisfaction with Life Scale, F1 = Factor 1; F2 = Factor 2.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Discussion

Our study focused on the Spanish LGBT+ older adults (over 50 years old) and contributed to validating the LGS and the GBC for that population. Previous studies validated the scales with older adults but not specifically for LGBT+ older adults. Our study is the first to examine the psychometric properties (construct validity) of the LGS and the GBC for the Spanish LGBT+ population aged 50 years and older.

Regarding the LGS, our study uses a two-factor model ("Positive generativity" and "Generative doubts") similar to the original (McAdams and Aubin, 1992) and Spanish (Villar et al., 2013) versions. However, the model in our study explains a higher total variance (45.1% vs 29.1% in Villar et al., 2013). Although the number of items in our model and that of Villar et al. (2013) were the same, different items compose the "Positive generativity" subscale. In our study, two items that are part of the Villar et al.'s (2013) model were not extracted (8. I think that I will be remembered for a long time after I die; 10. Others would say that I have made unique contributions to society) and two other items that are not part of Villar et al.'s (2013) model were extracted in our model (7. I try to be creative in most things that I do; 16. I have made many commitments to many different kinds of people, groups and activities in my life). The remaining items are similar in both versions (1, 4, 6, 12, 17–20) of the "Positive generativity" subscale. The "Generative doubts" subscale showed an exact factor model solution with the same items (items 2, 13–15) as Villar et al. (2013).

Our scale has good internal consistency, similar to what was reported in the original version (McAdams and Aubin, 1992). However, the "Generative doubts" factor had a lower score ($\alpha = 0.514$), similar to that obtained by Villar et al. (2013). Given that internal consistency was evaluated using Cronbach's α, the lower score could be attributed to the small number of items ($n = 4$) in the subscale as it is common to find lower Cronbach's α coefficients in smaller scales, as Cronbach's α is sensitive to the number of items. (Pallant, 2011).

McAdams and Aubin (1992) did not perform a factor analysis on the GBC. Villar et al. (2013) conducted a factor analysis that suggested two or four factors. The authors of the Spanish version of the GBC chose the four-factor solution due to the scree plot (a graphical method). In our study, the GBC presented a two-factor solution, which is one of the extraction models reported by Villar et al. (2013). Their study used eigenvalues and a scree plot, which differs from our study that used the PA, which is considered a more accurate estimate of the number of factors to retain (Watkins, 2018). Compared to Villar et al. (2013), we obtained a higher percentage of explained variance (41.67% vs. 36.4%) and a bigger number of items (20 vs. 15) that are organized differently from the Villar et al.'s (2013) model. The internal consistency in our study and that of Villar et al. (2013) was similar (good; $\alpha > 0.70$).

In both instruments, the factor analytic solution differed from Villar et al. (2013) in the number of factors and the number and type of items per factor. One possible explanation relates to the influence of sample selection (Gaskin et al., 2017). The Villar et al. (2013) sample consisted of older adults from the general population. Our study's sample consisted of LGBT+ older adults. LGBT+ people have different and singular life stories, often marked by stigma and prejudice. They have faced historical (e.g., the dictatorship) and social (e.g., the HIV/AIDS pandemic) movements that provided them with experiences that differed from those of cisgender and heterosexual individuals of the same age group (Casado et al., 2023; Tavares et al., 2023). Moreover, the selection of samples in studies using EFA can influence the obtained factor solution (Gaskin et al., 2017), potentially resulting in different factor solutions in terms of the number of extracted factors and the factor structure.

The correlations between the LGS, the GBC and the SWLS were established to determine convergent validity. LGBT+ older adults with higher levels of generative concerns and behaviors were the most satisfied with life.

Satisfaction with life was correlated with generativity, considering that more generative individuals are more satisfied with life (Becchetti & Bellucci, 2021). Previous studies have shown that higher levels of generativity are positively related to satisfaction with life in several population groups (Bower et al., 2021; Pons et al., 2000; Serrat et al., 2018)gay, bisexual, transgender, and queer (LGBTQ+. In addition, a recent study showed that being open about one's sexual orientation or gender identity in all areas of life, as well as the perceived support for doing so, promotes generativity and life satisfaction (Tavares et al., 2023). Generative concerns significantly correlated with generative behaviors, although the correlation was slightly lower than that reported by Villar et al. (2013) – 0.39 versus 0.49, respectively. These results indicate that these scales have adequate convergent validity.

This study had some limitations. First, the sample size was relatively small as it remains challenging to reach out to 50+ year-old LGBT+ individuals (Fredriksen-Goldsen & de Vries, 2019). We consider that the results would have benefited from using a larger sample that allowed other validation approaches, such as confirmatory factor analysis. Second, our sample mainly consisted of cisgender gay men and lesbians. We believe that our study would have benefited from including more transgender, bisexual, and non-binary participants. Third, regarding internal consistency, Cronbach's α was slightly below the recommendation for the LGS – Generative doubts subscale. This was probably due to the low correlation between the corresponding items (four). Therefore, we recommend a more in-depth evaluation for future testing of this instrument.

Conclusion

Assessing generativity is especially relevant in LGBT+ older adults because it relates to positive well-being, satisfaction with life, and healthy aging. Thus, our study aimed to evaluate the psychometric properties regarding the reliability (internal consistency) and validity of the LGS and the GBC for Spanish LGBT+ older adults. Our findings show adequate factor validity and good reliability in the global scores of both scales, suggesting that they can be useful for the study of generative concerns and behaviors in the Spanish LGBT + older population.

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