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Do Not Judge Inner Experience, but Be Mindful: Dispositional Mindfulness, Internalized Sexual Stigma, and Positive Identity in Lesbian, Gay, and Bisexual People

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Abstract

Introduction Research showed that dispositional mindfulness has positive associations with LGB people's well-being and is negatively associated with internalized sexual stigma. However, previous research has investigated the role of dispositional mindfulness in the development of LGB individuals' positive acceptance of their own sexual identity is still limited. This study aims to investigate the association between dispositional mindfulness, internalized sexual stigma, and positive identity in LGB individuals.

Methods Three hundred fifty-six Italian cisgender LGB participants responded to a self-reported questionnaire from the end of 2022 to May 2023. We administered the Five-Facet Mindfulness Questionnaire, the measure of internalized sexual stigma, and the Lesbian, Gay, and Bisexual Positive Identity Measure, as well as other background and socio-demographic variables.

Results Dominance analyses showed that the non-judging facet of dispositional mindfulness negatively predicted LGB people's internalized sexual stigma and was strongly associated with the authenticity dimension of LGB people's positive identity; no other mindful facets or variables were implied in this association.

Conclusions A mindful, non-judging attitude toward one's inner experience might contribute to reducing LGB people's internalized sexual stigma and favoring their positive acceptance of sexual identity, leading to a sense of authenticity.

Policy Implications Enhancing dispositional mindfulness might have important positive effects in order to alleviate adverse impacts of minority stress and improve LGB people's well-being, contributing to helping them navigate stigmatizing contexts better.

Keywords Dispositional mindfulness · Internalized sexual stigma · Positive identity · Gay, lesbian, and bisexual people · Dominance analysis

Introduction

In the literature, it is well established that people who endorse high levels of internalized sexual stigma (ISS) regarding their lesbian, gay, or bisexual (LGB) identity are more vulnerable regarding their health and have a weakened capacity to deal with stress (Hoy-Ellis, 2023; Meyer, 2003; Thoma et al., 2021). In the minority stress model, a combination of lack of social safety and stress processes induced by (internalized) sexual stigma, fear of discrimination, and consequential self-monitoring and concealment is found to be associated with LGB people's health vulnerabilities (Meyer, 2003). Furthermore, LGB people living in heterosexist contexts often encounter challenges in expressing themselves authentically about their sexuality and identity. These challenges can lead them

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to live in a state of internal incongruence resulting from trying to manage their image and avoid stigma (Rosario et al., 2006). However, LGB people can also develop certain psychological dispositions of resilience, promoting the reduction of internalized stigma, and improving psychological adjustment (see, e.g., Chen et al., 2023; Riggle et al., 2014). Recently, a fruitful line of research has shown that LGB people's development of a positive identity (e.g., positive emotions and thoughts about themselves) can reduce the adverse effects of minority stress (Bruce et al., 2015) and favor well-being and perceptions of social safety (Petrocchi et al., 2020).

Considering the possible negative consequences of internalizing sexual stigma on the one hand and the potential positive effects of a positive identity on psychological functioning on the other, it seems crucial to understand what antecedents might be related to LGB people's attitudes toward themselves. In some recent studies, dispositional mindfulness was found to positively impact on LGB people's well-being and to relieve the adverse effects of minority stress (Salvati et al., 2019; Salvati & Chiorri, 2023; Sun et al., 2021). Similarly, in other studies (Lyons, 2016; Lyons et al., 2017; Vosvick & Stem, 2019), LGBTQ + people's high levels of dispositional mindfulness—or mindful acceptance—tended to be associated with lower levels of psychological distress and higher levels of psychological quality of life. In qualitative studies with samples of sexual minority adults, low levels of mindfulness were linked to greater suffering and negative coping related to minority stress (Li et al., 2019). Furthermore, some evidence indicated a negative relationship between dispositional mindfulness and internalized sexual stigma (ISS) in both gay and bisexual men (e.g., Salvati et al., 2019) and in lesbian and bisexual women (e.g., Salvati & Chiorri, 2023). Dispositional mindfulness was also found to be a positive element for the development of positive thinking (Ben Salem & Karlin, 2023) as well as social identification and dispositional mindfulness were found to be positively associated with mental well-being and resilience (Adarves-Yorno et al., 2020).

However, no previous research has investigated the role of dispositional mindfulness in the development of LGB individuals' positive acceptance of their sexual identity. This study builds on previous research to confirm that dispositional mindfulness can help predict the risk of internalized sexual stigma and to test if there is an association between dispositional mindfulness and the development of a positive identity in LGBTQ + people above and beyond other predictors that have been found to be linked to these constructs in previous research.

Dispositional Mindfulness as Antecedent of LGB People's Attitudes Toward the Self

Mindfulness is the process of directing attention or increasing awareness of one's present-moment experience, thoughts, emotions, sensations, behaviors, or surroundings (Kabat-Zinn, 1982). The term "mindfulness" originates from a Sanskrit concept that means "that which is remembered," and it can be understood as a state of awareness, including the idea of non-judgmental acceptance within life experiences (Baer et al., 2008; Brown & Ryan, 2003).

Mindfulness describes both people's inherent stable disposition to be mindful (i.e., a trait) and a dynamic state to be mindful (i.e., dispositional mindfulness) that people exhibit in given situations and that can be trained (Truong et al., 2020). These two aspects of mindfulness are related in that mindfulness practice and interventions cause both state and trait changes (Tang et al., 2015). Specifically, dispositional mindfulness can be conceptualized as an increased ability to observe, understand, and describe the present situation concerning oneself and the context without applying automatic reactions or making positive and negative judgments about one's inner experiences. According to the theoretical model of human motivation of the Self Determination Theory (SDT; Ryan & Deci, 2000), mindfulness results in improved people's acting with a complete sense of volition, acceptance, and choice (Donald et al., 2020; Salvati & Chiorri, 2023).

Since the 1970s, mindfulness-based training pathways have been introduced in healthcare intervention programmes such as Mindfulness-Based Stress Reduction (MBSR; Grossman et al., 2004) and Mindfulness-Based Cognitive Therapy (MBCT; Chiesa & Serretti, 2011) to promote well-being and contrast mental health problems. MBSR and MBCT are the standardized group mindfulness training protocols. However, several other therapeutic models were developed (e.g., Acceptance and Commitment Therapy, ACT; Dialectical Behaviour Therapy, DBT; Mindful Self Compassion, MSC; and Compassion Focused Therapy, CFT; see Whomsley & Russell, 2022 for complete coverage of all approaches). Research also showed promising evidence of the positive role of mindfulness-based interventions in promoting LGBTQ + people's mental health and reducing their stress (e.g., Iacono, 2019; Tan, 2016). Of relevance to current research, mindfulness was also associated with a positive functioning of social-psychological aspects of the self, which, in turn, can play an important role in mental health (Xiao et al., 2017).

Indeed, the research found that mindfulness is associated with positive self-attitudes, such as non-attachment (Montero-Marin et al., 2016), self-compassion (Hollis-Walker & Colosimo, 2011), or increased ability to experience a sense of the self as transitory, interdependent, and dynamic (Shapiro et al., 2006; Xiao et al., 2017). Mindfulness also has a positive association with mental health as favored by "de-automatizing" processes of maladaptive cognitive processes (Fuochi & Voci, 2020). Indeed, mindfulness reduces automatic emotional and cognitive response processes and fosters cognitive flexibility, decentering, and meta-cognitive insight (Fuochi & Voci, 2020; Kang et al., 2013). Fuochi and Voci (2020) also found that dispositional mindfulness relates to higher life satisfaction via higher cognitive flexibility and decentering. Mindfulness is also associated with lower stress via lower levels of rumination. In line with these results, Salvati et al. (2019) found that having a mindful, non-judging attitude toward one's inner experience (i.e., thoughts, feelings, bodily sensations) was the best predictor of lower internalized sexual stigma in gay/bisexual men, confirming that a mindful non-judging attitude would imply a greater acceptance of one's own emotions and thoughts reducing rumination. Furthermore, recent studies also showed that mindfulness-based interventions improved intergroup dynamics reducing intergroup biases and internalized biases (see Chang et al. (2022) for a meta-analysis).

As for assessing the crucial role of dispositional mindfulness as an antecedent or correlating factor of people's attitudes, many instruments have been conceptualized in the literature, with only a few measures accurately assessed for their validity and reliability (see Medvedev et al. (2022) for a review). The Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006, 2008) is one of the most valid and reliable psychometric tools for measuring the multidimensional aspects of dispositional mindfulness. It has the potential to estimate the effects of mindfulness treatments and assess correlations between dispositional mindfulness and other variables with various users (e.g., meditators and non-meditators; Baer et al., 2006; Truong et al., 2020). The FFMQ comprises five subscales that measure different aspects of mindfulness: "acting with awareness," "describing," "non-judging inner experience," "nonreactivity to inner experience," and "observing." The first dimension assesses the ability to focus attentively on the experiences and activities of the present moment. "Describing" captures people's ability to identify and explain internal experiences in words. The "non-judging of inner experience" facet describes individuals' tendency to adopt non-judgemental attitudes toward their own feelings and thoughts. "Non-reactivity to inner experience" captures the ability to let feelings and thoughts come and go without reacting. Finally, the dimension of "observing" measures people's willingness to pay attention to internal and external sensations, cognitions, or emotions. All these dimensions of mindfulness emphasize its function in increasing awareness and liberating people from constraints, such as rewards, punishments, or social expectations (Fuochi et al., 2023).

However, past studies have found that it is mainly the non-judging mindfulness sub-dimension that is related to less internalized sexual stigma (ISS) for both gay/bisexual men (Salvati et al., 2019) and lesbian/bisexual women (Salvati & Chiorri, 2023) over and above some socio-demographic variables and other factors that previous literature found to be associated with ISS, such as sex, age, educational achievement and social economic status, political orientation and interest, religiosity, gender roles, social dominance orientation, and right-wing authoritarianism (Salvati et al., 2017, 2019). In fact, a mindful, nonjudging attitude toward inner experiences promotes LGB people's higher positive acceptance of emotions and thoughts linked to their sexual identity (Salvati & Chiorri, 2023). For instance, Salvati and Chiorri (2023) found that Italian lesbian/bisexual women who do not judge but accept their own emotions and thoughts also accept their own sexual identity and are less prone to ruminative thinking about themselves.

Dispositional Mindfulness, Positive Identity, and Authentic Living

Riggle et al. (2014) described LGB people's positive identity as being composed of five main facets, including "authenticity" (i.e., perception of comfort toward one's identity and in expressing identity in interactions with other people), "self-awareness" (i.e., being aware of one's LGB identity), "community" (i.e., perception to be supported and involved in the LGBTQ + communities), "intimacy" (i.e., capacity for intimacy), and "social justice" (i.e., concern and activism for social oppression). Several studies have shown that all the facets of LBG people's positive identity—and in particular the sub-dimension of authenticity—are related to well-being and positive psychological functioning above and beyond negative aspects of internalized sexual stigma (ISS; Chen et al., 2023; Fredrick et al., 2020; Petrocchi et al., 2020; Salvati et al., 2023). For instance, in a previous study exploring the positive identity of LGB people (Petrocchi et al., 2020), the dimensions of self-awareness, authenticity, community, and intimacy were found to be negatively related to self-criticism and positively related to perceptions of social safety and self-reassurance, a strategy of self-support for the self, and acceptance of one's vulnerabilities. Differently, the facet of social justice was negatively related to internalized sexual stigma (ISS) and social safety. However, authentic living was the most important predictor of LGB people's well-being.

Kernis and Goldman (2006) described authenticity as the process of knowing and acting according to one's true self, beliefs, values, and emotions, including the intention of increasing knowledge of—and acting in coherence with—one's true feelings, motives, wants, personal characteristics, and thoughts (Allan et al., 2015). These aspects of the authenticity dimension describe an experience of the self distinct from the mindfulness awareness of internal and external experiences in the present moment (Allan et al., 2015; Brown & Ryan, 2003). Authenticity is also explained as an unbiased process that allows people to recognize positive and negative parts of themselves (Allan et al., 2015).

According to SDT applied to mindfulness (Ryan & Deci, 2000), the process of integrating the self consistently and becoming more aware is described as "living authentically" (Kernis & Goldman, 2006). Accordingly, mindfulness is described as promoting a "higher level of integration of the self and greater consistency between one's actions and values (i.e., authenticity)" (Allan et al., 2015, p. 2). Studies have confirmed that mindfulness allows people to know themselves better (Carlson, 2013), be autonomously motivated (Donald et al., 2020), and understand their own needs, values, and core interests (Grund et al., 2018). Furthermore, mindfulness helps people observe endorsed values and motivations that align with their authentic selves, disengaging them from unhealthy automatic thoughts, habits, and external or internal conditioning effects (Brown & Ryan, 2003; Shapiro et al., 2006).

In many previous studies, authenticity was a crucial dimension of self-acceptance and self-compassion for one's vulnerabilities that strongly predicted well-being (Riggle et al., 2014), psychological adjustment (Wood et al., 2008), life satisfaction (Chew & Ang, 2023), negatively related to internalized sexual stigma (ISS; Chen et al., 2023), and manifested in behaviors that are consistent with one's inner experience (Ariza-Montes et al., 2017). On the contrary, a lack of authenticity is negatively associated with mindfulness (Allan et al., 2015).

Considering the previous evidence and drawing insights from SDT, the non-judging dimension of mindfulness may lead to the development of people's authenticity (Kernis & Goldman, 2006) as well as for LGB people. Indeed, non-judging attitudes in increasing self-awareness through mindfulness could favor authentic behaviors and relational orientations (Kernis & Goldman, 2006; Leroy et al., 2013).

The Current Study

The current study was carried out in Italy on a sample of gay, lesbian, and bisexual (LGB) individuals. In this national context, the current socio-political situation could still represent challenges for LGBTQ+people (ILGA-Europe, 2023; Salvati et al., 2020) increasing the possibility that minority stress affects their life and well-being and leading to high levels of internalized sexual stigma (Meyer, 2003). The ILGA Report (2023) indicated that 2022 was the most violent year for LGBTQ+people in the past decade in terms of their safety, as highlighted by attacks and hate speech from politicians, religious leaders, and right-wing organisations. Furthermore, in Italy, under the actual right-wing political administration, not only have there been no advances in protecting and recognizing the rights of LGBTQ+people, but some actions against LGBTQ+people, couples, and families highlighted the emergence of a negative climate, fomented by political rhetoric, even of an anti-LGBT conspiracy nature (Salvati et al., 2024a, b).

Despite the obvious difficulty and the widespread social injustice, some previous studies suggested that the mindfulness dispositions and the related development of an LGB person's positive identity, including the development of authenticity, the perception of being supported and involved in the LGBTQ+communities, and the activism against social oppression, could contrast these mechanisms and adversities (Petrocchi et al., 2020). Therefore, this study aims to confirm and extend previous study results on the relationship between dispositional mindfulness and internalized sexual stigma (Salvati & Chiorri, 2023; Salvati et al., 2019) as well as investigate the impact of mindful attitudes on the emergence of an LGB individuals' positive identity. Indeed, despite many important findings, no previous studies have explored the relationship between each of the facets of dispositional mindfulness as measured in FFMQ and each aspect of LGB individuals' positive identity as conceptualized in Riggle et al. (2014).

Specifically, we aimed to assess the distinctive impact of each different facet of dispositional mindfulness on internalized sexual stigma (ISS) and on each of the facets of LGB individuals' positive identity. Consistent with the prior literature, we expect that the non-judging dimension of mindfulness, as measured by FFMQ, would negatively predict internalized sexual stigma (ISS) of LGB individuals (*H1*) and positively predict positive identity development of LGB individuals, especially in the authenticity dimension (*H2*), after controlling for participants' sex, age, educational achievement and social economic status, political orientation and interest, religiosity, traditional gender roles, social dominance orientation, and right-wing authoritarianism that previous studies found related to internalized sexual stigma and LGB positive identity (Petrocchi et al., 2020; Salvati et al., 2019; Salvati & Chiorri, 2023).

Method

Participants and Procedures

This study is part of a larger research project that focuses on dispositional mindfulness, sexual prejudice, internalized

stigma, and positive identity, which includes both cisgender heterosexual individuals and other sexual and gender minority individuals. However, in the current study, we focused on gay, lesbian, and bisexual participants only. Thus, to be included in the sample, the inclusion criteria were the following: (a) being Italian, (b) being at least 18 years old, (c) being a cisgender man or woman, (d) declaring to be gay, lesbian, or bisexual. We decided to focus on gay, lesbian, and bisexual participants only to reserve a specific study aimed at transgender and gender non-conforming (TGNC) people. The reasons for such a choice were twofold: on the one hand, given the difficulty in recruiting TGNC people, including them in this study would have resulted in an imbalance in favor of LGB people; on the other hand, and more importantly, some of the main measures used in this study are validated for LGB people only. Based on these criteria, our sample consisted of 356 participants (cisgender men = 159; 44.7%; cisgender women = 197; 55.3%), ranging in age from 18 to 59 years ($M = 24.23$, $SD = 6.48$). The descriptive statistics of the background variables of the participants are reported in Table 1.

We used the LimeSurvey platform to electronically collect data through online questionnaires and snowball sampling from the end of 2022 to May 2023. The participants initially read that the survey would deal with personality characteristics and LGBTQ + issues. Participants had to give their informed consent to start the survey and received a brief explanation of the real aims after completing it. The study met the WMA Declaration of Helsinki (1964/2013), and it was approved by the Ethics Review Board of the Department of Human Sciences, University of Verona.

Table 1 Sample's descriptives

Variable	*N*	%
Sex		
Men	159	44.7%
Women	197	55.3%
Sexual orientation		
Exclusively homosexual	151	42.4%
Mostly homosexual	86	24.2%
Bisexual	119	33.4%
Nationality		
Italian	344	96.6%
Non-Italian	11	3.1%
Missing	1	0.3%
Educational level		
Elementary school diploma	1	0.3%
Middle school diploma	17	4.8%
High school diploma	248	69.7%
Bachelor's degree	58	16.3%
Master's degree	23	6.5%
PhD or other post-degree	9	2.5%
Working status		
Student	200	56.2%
Employed	118	33.1%
Unemployed	18	5.1%
Missing	20	5.6%
Religion		
Atheist/Agnostic	248	69.7%
Catholic	82	23.0%
Christian non-Catholic	15	4.2%
Missing	11	3.1%

Measures

Socio-Demographic Section

Participants were asked to indicate their biological sex (1 = female, 2 = male, 3 = intersex, 4 = I prefer to not respond), gender identity (1 = agender, 2 = cisgender, 3 = transgender, 4 = trans FtoM, 5 = trans MtoF, 6 = other), and sexual orientation (1 = exclusively heterosexual, 2 = predominantly heterosexual, 3 = bisexual, 4 = predominantly homosexual, 5 = homosexual, 6 = other). This choice was made to select only male and female cisgender participants who responded 3, 4, or 5 to the sexual orientation item, following the same procedure already used in several previous studies (Salvati et al., 2021a, 2024a). Furthermore, participants indicated their nationality, age, educational level (elementary diploma, middle school diploma, high school diploma, bachelor's degree, master's degree, PhD, or post-secondary title), working status, and socio-economic status through a self-anchoring scale depicted as a drawing of a 10-step ladder, where participants were asked to place themselves (Adler et al., 2000).

Religion

First, participants were asked to indicate their religion, selecting one of six options (Atheist/Agnostic, Catholic Christian, Non-Catholic Christian, Muslim, Jewish, Other). Second, their level of religiosity (REL, Salvati et al., 2021b, 2023) was investigated through five items to be rated on a 5-point Likert scale, from 1 = "not at all" to 5 = "completely." The mean score was calculated so that higher scores corresponded to a higher level of religiosity. Sample items were as follows: "Currently, I consider myself a religious person," or "How important is religion to you?." Cronbach's alpha = 0.79.

Politics

On the one hand, participants were asked to report their political orientation (PO) through a single item from 1 = "extreme left" to 7 = "extreme right." On the other hand, participants were administered a three-item scale to investigate their political interest and commitment (POL, Salvati & Chiorri, 2023; Salvati et al., 2019). They provided their

answers through a 5-point Likert scale, from 1 = "not at all" to 5 = "completely," and the mean score was calculated so that higher scores corresponded to a higher level of political interest and commitment. Sample items were: "How interested are you in politics?," or "How politically engaged are you?." Cronbach's alpha = 0.84.

Right-Wing Authoritarianism (RWA)

The measure of RWA (Altemeyer, 1996) included ten items to be rated on a 7-point Likert-type scale, from 1 = "totally disagree" to 7 = "totally agree." A sample item was "Old-fashioned manners and values still represent the best way to live." The mean score was calculated, so that higher scores corresponded to a higher level of RWA. Cronbach's alpha = 0.77.

Social Dominance Orientation (SDO)

The measure of SDO (Pratto et al., 2006) included eight items to be rated on a 7-point Likert-type scale, from 1 = "totally disagree" to 7 = "totally agree." A sample item was "The superior social groups should dominate the lower ones." The mean score was calculated, so that higher scores corresponded to a higher level of SDO. Cronbach's alpha = 0.83.

Traditional Masculinity-Femininity (TMF)

The measure of TMF (Kachel et al., 2016) included six items to be rated on a 7-point Likert-type scale, from 1 = "very feminine" to 7 = "very masculine." A sample item was "Traditionally, I consider myself as very masculine." The mean score was calculated, so that higher scores corresponded to a higher level of traditional masculinity. Cronbach's alpha = 0.90.

Five-Facet Mindfulness Questionnaire (FFMQ)

The short form of the FFMQ (Baer et al., 2022) was used. The tool includes fifteen items to be rated on a 5-point, Likert-type scale, from 1 = "Never or very rarely true" to 5 = "very often or always true." There were three items for each of the five facets: observing (FF_O, i.e., "I pay attention to sensations like the wind in my hair, or the sun on my face"), describing (FF_D, i.e., "Even when I feel terribly upset, I am able to find a way to put it into words"), acting with awareness (FF_A, i.e., "I do things quickly, without really paying attention to them."), non-judging of inner experience (FF_J, i.e., "I believe that some of my feelings are wrong or inappropriate, and that I shouldn't feel them"), non-reactivity to inner experience (FF_R, i.e., "When I have stressful images or thoughts, I am able to notice them, without necessarily reacting to them"). After reversing some items, the mean score for each of the five facets was calculated, so that higher scores corresponded to higher levels of dispositional mindfulness for that facet. Cronbach's alphas were $\alpha_{FF_O} = 0.62$, $\alpha_{FF_D} = 0.78$, $\alpha_{FF_A} = 0.67$, $\alpha_{FF_J} = 0.80$, $\alpha_{FF_R} = 0.62$.

Internalized Sexual Stigma (ISS)

We used the measure of internalized sexual stigma (Lingiardi et al., 2012), which consists of seventeen items to be rated on a 5-point Likert-type scale, from 1 = "totally disagree" to 5 = "totally agree." The tool presented two forms, one for gay and bisexual men and one for lesbian and bisexual women. The total score was computed by averaging the scores of all seventeen items, so that higher scores corresponded to a higher level of internalized sexual stigma. Sample items were "The thought of being gay/bisexual makes me feel depressed" or "I don't tell my friends that I'm lesbian/bisexual because I'm afraid of losing them." Cronbach's alpha was 0.90 for the lesbian/bisexual women form and 0.89 for the gay/bisexual men form.

Lesbian, Gay, and Bisexual Positive Identity (PI)

We used the Italian version (Baiocco et al., 2018) of the *Lesbian, Gay, and Bisexual Positive Identity Measure* (Riggle et al., 2014). Such a tool includes twenty-five items to be rated on a 5-point Likert-type scale, from 1 = totally disagree to 5 = totally agree. There were five items for each of the five factors: awareness (PI_AW, i.e., "My LGB identity makes me more self-aware"), authenticity (PI_AU, i.e., "I am comfortable with my LGB identity"), community (PI_C, i.e., "I feel included in the LGB community"), intimacy (PI_I, i.e., "My LGB identity makes me free to express my sexuality"), and social justice (PI_J, i.e., "Having an LGB identity leads me to fight for the rights of other people"). Cronbach's alphas were $\alpha_{AW} = 0.86$, $\alpha_{AU} = 0.87$, $\alpha_{FF_C} = 0.85$, $\alpha_{FF_I} = 0.83$, $\alpha_{FF_J} = 0.76$.

Analyses Strategy

First, we performed zero-order correlations to explore the associations between the set of variables in our study. Subsequently, to test our hypotheses, we have run one dominance analyses (DA) model with internalized sexual stigma (ISS) as the criterion variable and one DA model for each of the five dimensions of LGB positive identity as the criterion variable. Such a strategy allowed us to test the predictive power of dispositional mindfulness dimensions on ISS, on the one hand, and LGB positive identity dimensions, on the other, after controlling for participants' sex, age, educational achievement and socio-economic status, political orientation

and interest, religiosity, traditional gender roles, social dominance orientation, and right-wing authoritarianism.

Dominance analysis facilitates a detailed division of the overall variance in the outcome variable among different predictors (Azen & Budescu, 2003; Budescu, 1993). This approach assigns dominance weights to each predictor through a repetitive procedure, which includes evaluating the predictors against each other in multiple regression models. General dominance provides information on how much a predictor adds to the variance when evaluated together with other predictors in a set, similar to the average R^2 contribution by regressors in different sequences (Lindeman et al., 1980). From a practical point of view, DA helps identify which predictors have the strongest influence on the outcome variable, allowing researchers to assess their relative importance and to clarify which variables truly "dominate" the outcome. With respect to standard linear multiple regression, the estimate of the relative contribution of each predictor in DA is less affected by the pattern of correlation of predictors, thus addressing most multicollinearity issues. Moreover, the availability of an R^2-like measure simplifies this interpretation of the results and the comparison of predictors, which can be ranked by their relative importance (see, e.g., Mizumoto, 2023: Bittmann, 2024).

Due to the lack of a known theoretical distribution for dominance weights (Azen & Budescu, 2003), we utilized bootstrapping to account for the random component, enabling us to determine confidence intervals for two main reasons: first, to ascertain if a dominance weight was significantly different from zero, and second, to facilitate comparisons of dominance weights within the same model.

We used the package *relaimpo* (Groemping, 2018, version 2.2–6) package in *R* (R Core Team, 2018). Furthermore, we used the results from the *boot.relimp* function to assess the bias in bootstrap-estimated parameters. Finally, we used the standards set by Tonidandel et al. (2009), who consider 0.009 as a minor level of bias, to interpret the bias values. A sufficiently low bias level implies that the sample size is adequate.

Results

Correlations

The results (Tables 2 and 3) preliminary supported our hypotheses, showing that the mindful non-judging facet was the one with the highest association with both internalized sexual stigma and with the dimension of authenticity of LGB positive identity, among all the five mindful facets. Specifically, on the one hand, the results showed that higher levels on the non-judging facet were associated with lower levels of internalized sexual stigma, $r = -0.39$, $p < 0.01$, with a medium magnitude, providing first support for Hypothesis 1. On the other hand, higher levels in the non-judging facet were associated with higher levels in the LGB positive identity of authenticity, $r = 0.34$, $p < 0.01$, with a medium magnitude, providing first support for Hypothesis 2.

Bivariate correlations of internalized sexual stigma with the other mindful facets showed that lower levels on the describe facet, $r = -0.19$, $p < 0.01$, lower levels on the awareness facet, $r = -0.20$, $p < 0.01$, but higher levels on the observing facet, $r = 0.15$, $p < 0.01$, were significantly associated with higher levels of internalized sexual stigma, albeit with all small effect sizes, whereas the non-reacting facet did not correlate with internalized sexual stigma, $r = -0.08$, $p > 0.05$.

Furthermore, bivariate correlations of the authenticity dimension of LGB positive identity with the other mindful facets showed that higher levels of the describe facet, $r = 0.27$, $p < 0.01$, higher levels of the awareness facet, $r = 0.17$, $p < 0.01$, and higher levels of the non-reacting facet, $r = 0.20$, $p < 0.01$, were significantly associated with higher levels of authenticity dimension of LGB positive identity, with small-to-moderate effect sizes, whereas the observing facet did not correlate with the authenticity dimension of LGB positive identity, $r = -0.07$, $p > 0.05$.

See Tables 2 and 3 for all the specific correlations between all the study variables, including participants' sex, age, educational achievement and social economic status, political orientation and interest, religiosity, traditional gender roles, social dominance orientation, and right-wing authoritarianism, which do not constitute the main focus of our hypotheses but were used as control variables in the dominance analyses.

Dominance Analyses

The results of the first DA revealed that the variance in the score on internalized sexual stigma was accounted for by low levels of the mindful non-judging facet only, while no other mindful facets emerged as significant predictors of internalized sexual stigma (Fig. 1), supporting our Hypothesis 1. Furthermore, none of the other control predictors was found to be related to internalized sexual stigma.

The second DA revealed that the variance in the score on the authenticity dimension of LGB positive identity was accounted for by high levels of the non-judging facet only, while no other mindful facets emerged as significant predictors of authenticity (Fig. 2), supporting our Hypothesis 2. Furthermore, none of the other control predictors was found to be related to authenticity.

The other DAs showed that none of the five facets of dispositional mindfulness accounted for variance in the score on the awareness dimension (Fig. 3), the community dimension (Fig. 4), the intimacy dimension (Fig. 5),

Table 2 Correlations and descriptives

	SEX	AGE	DEG	SES	REL	PO	POL	RWA	SDO	TMF
SEX	1									
AGE	.10	1								
DEG	.09	.36**	1							
SES	.11*	.07	.12*	1						
REL	−.07	.08	−.05	−.03	1					
PO	.18**	.02	.03	.05	.17**	1				
POL	.09	.01	.06	.08	−.12*	−.24**	1			
RWA	.06	−.09	−.20**	.05	.17**	.33**	−.27**	1		
SDO	.15**	.05	.04	.09	.10	.27**	−.17**	.49**	1	
TMF	.52**	.16**	.10	.12*	−.04	.18**	.01	.10	.23**	1
FF_O	−.10	.05	.03	−.06	−.04	−.10	.18**	−.08	−.01	−.08
FF_D	.14*	.25**	.25**	.14**	−.04	.01	.18**	−.10	.01	.05
FF_A	.12*	.19**	.13*	.09	.02	.09	.10	−.04	−.05	.08
FF_J	.03	.25**	.14**	.06	−.06	.04	.08	−.09	−.08	.13*
FF_R	.12*	.10	.19**	.07	−.06	−.01	.24**	−.07	.04	.05
ISS	.07	−.14**	−.10	.01	.24**	.12*	−.08	.28**	.24**	−.01
PI_AW	−.07	.05	.03	.07	−.01	−.15**	.11*	−.09	−.19**	−.03
PI_AU	.06	.17**	.13*	.01	−.12*	−.11*	.09	−.11*	−.09	.06
PI_C	.01	−.03	−.04	.06	−.10	−.24**	.16**	−.03	−.20**	−.04
PI_I	−.03	.05	.05	.08	.11*	−.07	.07	−.03	−.08	.04
PI_J	−.09	.03	.04	−.01	.01	−.32**	.28**	−.26**	−.40**	−.19**
M	–	24.23	–	6.31	2.07	2.76	2.82	2.17	1.67	3.89
SD	–	6.48	–	1.60	0.76	1.04	0.87	0.83	0.70	1.27
Skewness	–	2.59	–	−0.27	1.17	0.99	0.10	0.67	1.35	0.01
Kurtosis	–	7.81	–	−0.31	1.34	1.15	−0.25	−0.12	1.60	−0.47

sex: 1 = women, 2 = men; DEG: educational level; *SES* socio-economic status, *REL* religiosity, *PO* political orientation, 1 = *extreme left*, to 7 = *extreme right*; *POL* political interest, *RWA* right-wing authoritarianism, *SDO* social dominance orientation, *TMF* traditional masculinity-femininity scale, *FF_O* FFMQ_Observing, *FF_D* FFMQ_Describing, *FF_A* FFMQ_Acting-with-awareness, *FF_J* FFMQ_Non-judging-of-inner-experience, *FF_R* FFMQ_Non-reacting, *ISS* internalized sexual stigma, *PI_AW* LGB Positive Identity_Awareness, *PI_AU* LGB Positive Identity_Autenticity, *PI_C* LGB Positive Identity_Community, *PI_I* LGB Positive Identity_Intimacy, *PI_J* LGB Positive Identity_SocialJustice

*$p < .05$; **$p < .01$

and the social justice dimension (Fig. 6) of LGB positive identity. At the same time, the results showed that lower levels of social dominance orientation were related to higher levels of community dimension of LGB positive identity, whereas high levels of justice dimension were predicted by left-wing political orientation, high levels of political interest, low levels of social dominance orientation, and low levels of right-wing authoritarianism.

The absolute bias for the estimates ranged from 0.001 to 0.003 for ISS, from 0.002 to 0.004 for PI_AW, from < 0.001 to 0.004 for PI_AU, from 0.001 to 0.004 for PI_C, from 0.003 to 0.004 for PI_I, and from < 0.001 to 0.003 for PI_J, suggesting that the amount of bias was negligible, and hence, the sample size could be considered adequate.

Discussion

The results of this study support our hypotheses that the non-judging dimension of mindfulness is negatively associated with internalized sexual stigma (ISS) and positively associated with LGB people's identity, especially in the authenticity dimension, over and beyond other factors such as participants' gender, age, educational achievement and social economic status, political orientation and interest, religiosity, traditional gender roles, social dominance orientation, and right-wing authoritarianism (Petrocchi et al., 2020; Salvati et al., 2019; Salvati & Chiorri, 2023). Therefore, the non-judging mindfulness dimension would favor a sense of authenticity that in turn might help LGB

Table 3 Correlations and descriptives

	FF_O	FF_D	FF_A	FF_J	FF_R	ISS	PI_AW	PI_AU	PI_C	PI_I	PI_J
FF_O	1										
FF_D	.06	1									
FF_A	−.16**	.29**	1								
FF_J	−.21**	.31**	.40**	1							
FF_R	.12*	.38**	.11*	.24**	1						
ISS	.15**	−.19**	−.20**	−.39**	−.08	1					
PI_AW	.07	.12*	.02	.04	.04	−.19**	1				
PI_AU	−.07	.27**	.17**	.34**	.20**	−.67**	.40**	1			
PI_C	−.04	.07	.03	.11*	.05	−.25**	.56**	.42**	1		
PI_I	.02	.11*	.04	.10	.05	−.23**	.67**	.45**	.48**	1	
PI_J	.17**	.06	−.01	−.06	.02	−.14**	.50**	.18**	.48**	.33**	1
M	3.14	3.14	3.45	3.41	2.92	1.74	5.43	5.89	5.04	5.40	5.86
SD	0.89	0.91	0.79	0.92	0.69	0.60	1.03	1.00	1.15	1.08	0.90
Skewness	−0.18	−0.21	−0.15	−0.22	0.20	0.96	−0.9	−1.49	−0.63	−0.49	−1.07
Kurtosis	−0.49	−0.36	−0.08	−0.40	0.02	1.17	2.05	2.90	0.40	−0.13	2.07

FF_O FFMQ_Observing, *FF_D* FFMQ_Describing, *FF_A* FFMQ_Acting-with-awareness, *FF_J* FFMQ_Non-judging-of-inner-experience, *FF_R* FFMQ_Non-reacting, *ISS* internalized sexual stigma, *PI_AW* LGB Positive Identity_Awareness, *PI_AU* LGB Positive Identity_Autenticity, *PI_C* LGB Positive Identity_Community, *PI_I* LGB Positive Identity_Intimacy, *PI_J* LGB Positive Identity_SocialJustice

*$p < .05$; **$p < .01$

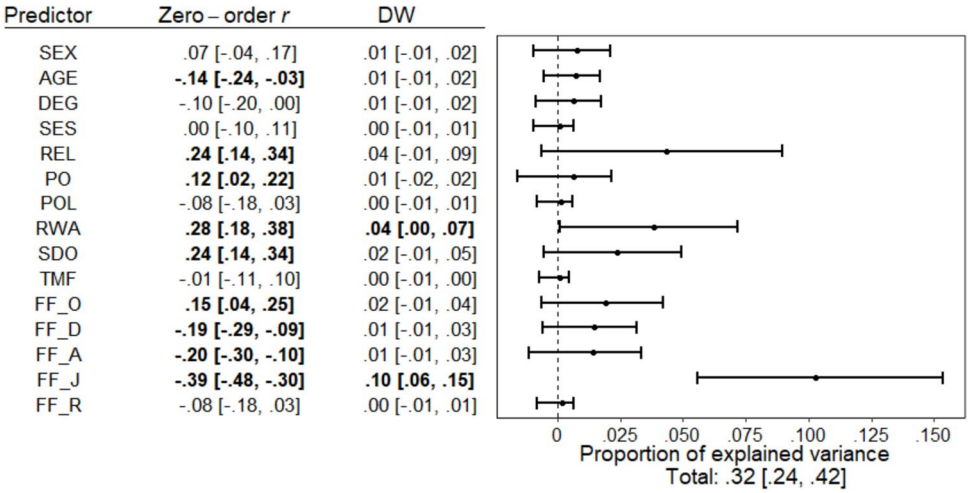

Fig. 1 Results of the dominance analysis for the criterion internalized sexual stigma. Notes: Bolded values are significant at $p < .05$; sex: 0 = women, 1 = men; DEG: educational level (0 = less than degree, 1 = degree or more); SES, socio-economic status; REL, religiosity; PO, political orientation, 1 = *extreme left*, to 7 = *extreme right*; POL, political interest; RWA, right-wing authoritarianism; SDO, social dominance orientation; TMF, traditional masculinity-femininity scale; FF_O, FFMQ_Observing; FF_D, FFMQ_Describing; FF_A, FFMQ_Acting-with-awareness; FF_J, FFMQ_Non-judging-of-inner-experience; FF_R, FFMQ_Non-reacting

people to be autonomous, centred with their true- or core-self, and self-determined, in line with the assumptions of self-determination theory (SDT; Kernis & Goldman, 2006; Ryan & Deci, 2000).

In this study, correlational analyses supported the expected relations by showing that among all the facets of dispositional mindfulness, the ability to non-judge one's inner experience is the one most strongly associated with both internalized sexual stigma (ISS) and authenticity of LGB people's positive identity. In addition, authenticity and ISS are found to be strongly and negatively related, as expected and in line with previous studies (Chen et al., 2023). Furthermore, our correlational analyses show positive associations between the dimension of authenticity and

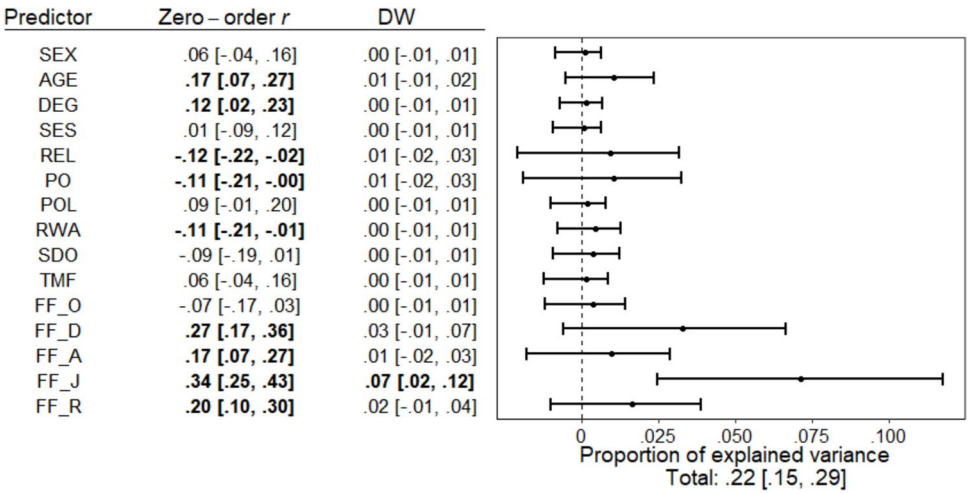

Fig. 2 Results of the dominance analysis for the criterion LGB positive identity—authenticity. Notes: Bolded values are significant at p < .05; sex: 0 = women, 1 = men; DEG: educational level (0 = less than degree, 1 = degree or more); SES, socio-economic status; REL, religiosity; PO, political orientation, 1 = extreme left , to 7 = extreme right ; POL, political interest; RWA, right-qing authoritarianism; SDO, social dominance orientation; TMF, traditional masculinity-femininity scale; FF_O, FFMQ_Observing; FF_D, FFMQ_Describing; FF_A, FFMQ_Acting-with-awareness; FF_J, FFMQ_Non-judging-of-inner-experience; FF_R, FFMQ_Non-reacting

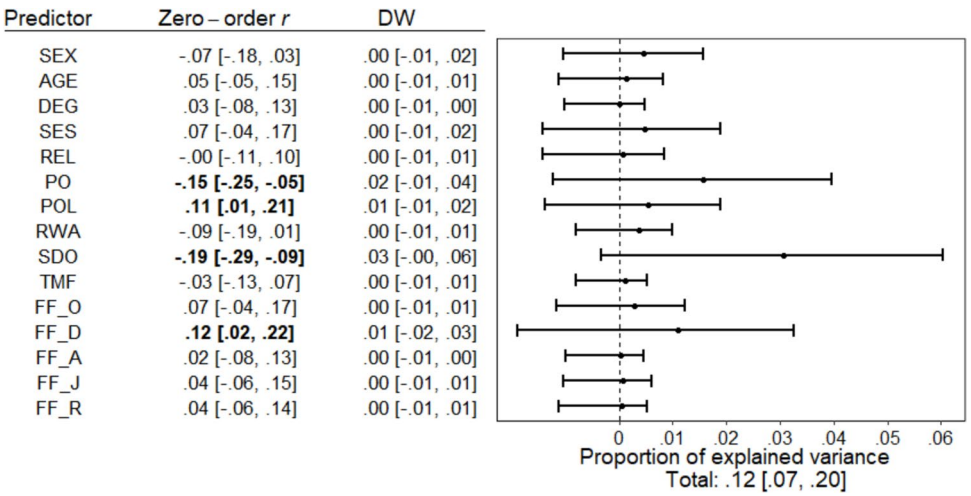

Fig. 3 Results of the dominance analysis for the criterion LGB positive identity—awareness. Notes: Bolded values are significant at p < .05; sex: 0 = women, 1 = men; DEG: educational level (0 = less than degree, 1 = degree or more); SES, socio-economic status; REL, religiosity; PO, political orientation, 1 = extreme left , to 7 = extreme right ; POL, political interest; RWA: right-wing authoritarianism; SDO, social dominance orientation; TMF, traditional masculinity-femininity scale; FF_O, FFMQ_Observing; FF_D, FFMQ_Describing; FF_A, FFMQ_Acting-with-awareness; FF_J, FFMQ_Non-judging-of-inner-experience; FF_R, FFMQ_Non-reacting

other mindfulness facets (i.e., describing, awareness, and non-reacting). Therefore, these findings provide evidence that authenticity is a fundamental dimension of self-acceptance positively related to dispositional mindfulness (Allan et al., 2015). The results of correlational analyses also show that the describing dimension of mindfulness (i.e., the ability to verbalize inner experiences) has relationships not only with stigma and authenticity but also with two other aspects of LGB positive identity development (i.e., awareness and intimacy). In other words, the disposition to openly describe one's feelings, opinions, expectations, and sensations is associated with a positive and conscious development of one's LGB identity and could foster a sense of intimate connection and satisfaction in emotional and sexual relationships (Kelley & Nichols, 2023; Larraz et al., 2023; Maher & Cordova, 2019; Wachs & Cordova, 2007).

Furthermore, we found an unexpected positive correlation between the observing mindfulness dimension and

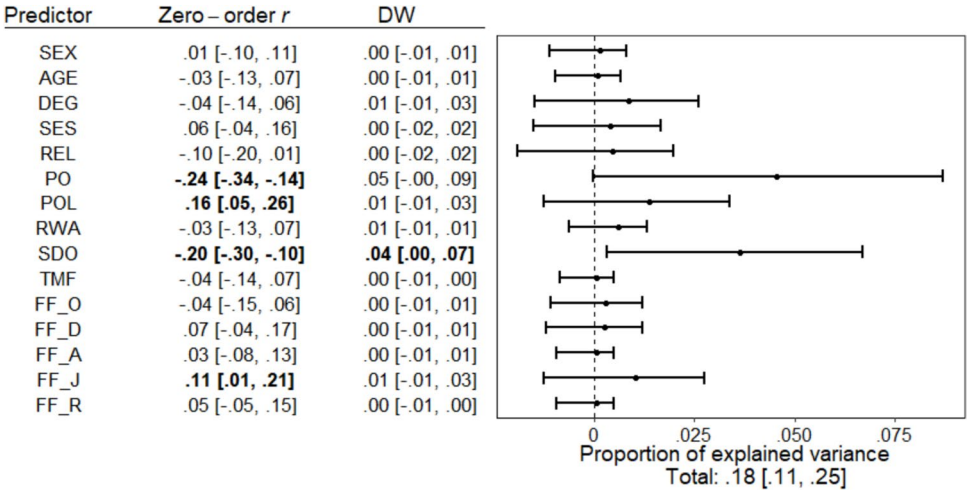

Fig. 4 Results of the dominance analysis for the criterion LGB positive identity—community. Notes: Bolded values are significant at $p < .05$; sex: 0 = women, 1 = men; DEG: educational level (0 = less than degree, 1 = degree or more); SES, socio-economic status; REL, religiosity; PO, political orientation, 1 = *extreme left*, to 7 = *extreme right*; POL, political interest; RWA, right-wing authoritarianism; SDO, social dominance orientation; TMF, traditional masculinity-femininity scale; FF_O, FFMQ_Observing; FF_D, FFMQ_Describing; FF_A, FFMQ_Acting-with-awareness; FF_J, FFMQ_Non-judging-of-inner-experience; FF_R, FFMQ_Non-reacting

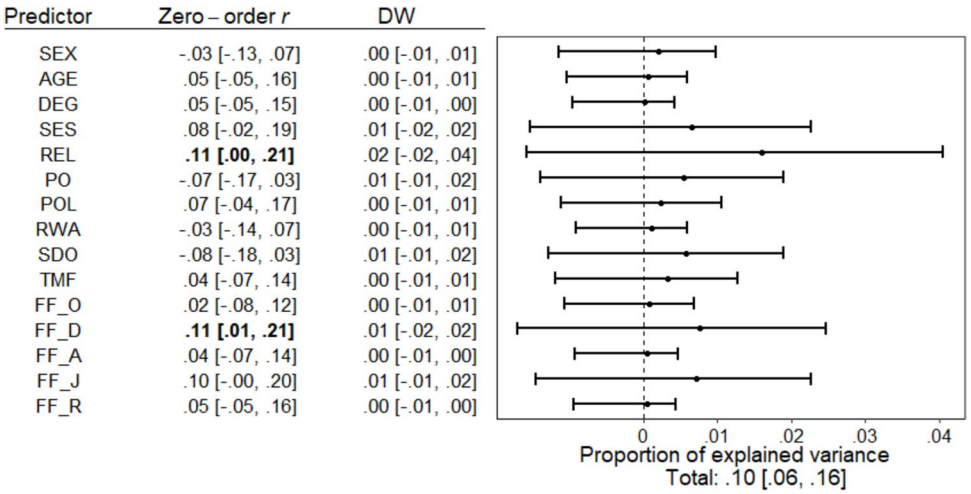

Fig. 5 Results of the dominance analysis for the criterion LGB positive identity—intimacy. Notes: Bolded values are significant at $p < .05$; sex: 0 = women, 1 = men; DEG: educational level (0 = less than degree, 1 = degree or more); SES, socio-economic status; REL, religiosity; PO, political orientation, 1 = *extreme left*, to 7 = *extreme right*; POL, political interest; RWA, right-wing authoritarianism; SDO, social dominance orientation; TMF, traditional masculinity-femininity scale; FF_O, FFMQ_Observing; FF_D, FFMQ_Describing; FF_A, FFMQ_Acting-with-awareness; FF_J, FFMQ_Non-judging-of-inner-experience; FF_R, FFMQ_Non-reacting

internalized sexual stigma (ISS), as well as an unexpected negative association between the observing and non-judging facets. In previous studies, the observing dimension was not related to ISS, neither in a sample of gay and bisexual men (Salvati et al., 2019) nor in a sample of lesbian and bisexual women (Salvati & Chiorri, 2023). However, in other studies, observing was found to have non-significant or small correlations with some outcomes, particularly for participants who were not experienced meditators (see Mattes, 2019 for a review). Furthermore, some evidence showed that the ability to observe and monitor one's inner experiences consciously is beneficial for mental and physical health only when accompanied by a non-judging acceptance of one's inner experience (Lindsay & Creswell, 2019; Wedell et al., 2022).

Beyond these preliminary correlations, the results of the first dominance analysis (DA) supported the prediction that only the non-judging facet of dispositional mindfulness negatively predicted LGB people's internalized sexual

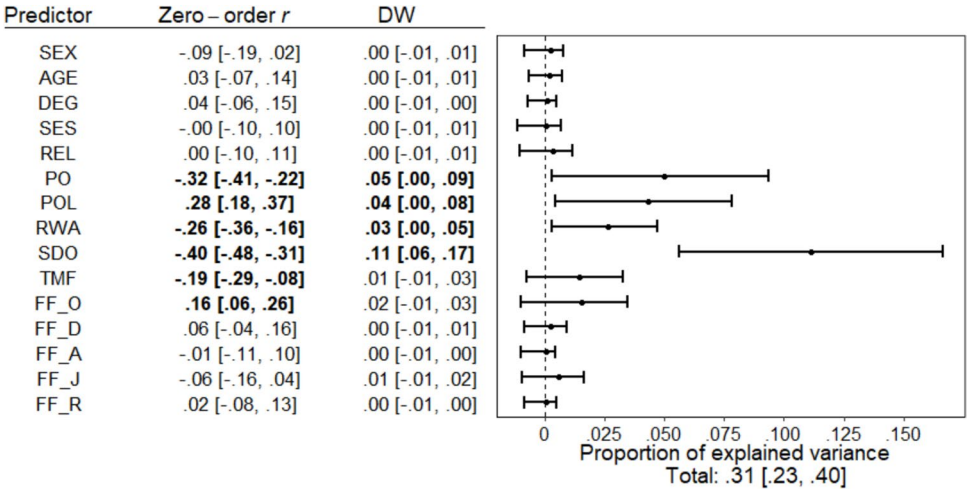

Fig. 6 Results of the dominance analysis for the criterion LGB positive identity—social justice. Notes*:* Bolded values are significant at $p < .05$; sex: 0 = women, 1 = men; DEG: educational level (0 = less than degree, 1 = degree or more); SES, socio-economic status; REL, religiosity; PO, political orientation, 1 = *extreme left*, to 7 = *extreme right*; POL, political interest; RWA, right-wing authoritarianism; SDO, social dominance orientation; TMF, traditional masculinity-femininity scale; FF_O, FFMQ_Observing; FF_D, FFMQ_Describing; FF_A, FFMQ_Acting-with-awareness; FF_J, FFMQ_Non-judging-of-inner-experience; FF_R, FFMQ_Non-reacting

stigma (ISS) over and above the other mindful facets and background variables, in line with the first prediction. Furthermore, the second DA showed that the non-judging facet of dispositional mindfulness was the only significant predictor of the authenticity dimension of LGB people's positive identity, which is in line with the second prediction.

Therefore, as expected and in line with results from previous studies results (e.g., Salvati & Chiorri, 2023; Salvati et al., 2019), DA results supported the hypothesis that a mindful, non-judging attitude toward one's inner experience might contribute to reducing LGB people's internalized sexual stigma (ISS). Compared to past studies, this study also has the merit of showing that dispositional mindfulness favors LGB people's positive acceptance of their sexual identity, leading especially to a sense of authenticity and comfort concerning one's identity (Kernis & Goldman, 2006). A critique of mindfulness research is that it primarily concentrated on investigating negative outcomes associated with mindfulness interventions and comparing meditators' and non-meditators' experiences (Mattes, 2019). Therefore, this study contributes to extending the investigation of the positive outcomes associated with dispositional mindfulness.

As for background and other variables, the DA findings also showed that LGB people's perception of being supported and involved in the LGBTQ + communities is negatively related to social dominance orientation (SDO). Furthermore, the positive identity linked to LGB people's activism and concern for social oppression (social justice) is predicted by left-wing political orientation, political interest, low social dominance, and low right-wing authoritarianism (RWA). Therefore, despite the positive effects of mindfulness, particularly in fostering a personal sense of authenticity, our results show that certain aspects of positive LGB people's identity development (i.e., community and social justice) are mainly fostered by progressive attitudes, political interests, and low levels of ideological attitudes in defending social hierarchies and authorities (SDO and RWA). Along these lines, some authors (e.g., Chachignon et al., 2024) have argued that it is still unclear whether mindfulness can have a positive effect in enhancing a sense of social justice involved in transforming the power structures at a systemic level (e.g., patriarchy and heterosexism). Mindfulness operates primarily on an individual and self-centered level, potentially improving people's skills and overcome stress through a "strong commitment to work on themselves" (Kabat-Zinn & Hanh, 2009, p. 83). However, changing oneself might not lead to changes in society, especially for LGB people living in specific stigmatizing contexts (Chachignon et al., 2024).

Limitations and Future Research Directions

Some limitations can be identified in this study. First, the generalizability of the results could be limited by using a convenience sample that is not particularly large or representative. Future studies should investigate the effect of dispositional mindfulness on attitudes toward the self in larger samples and across other groups, such as transgender and gender non-conforming people (TGNC). Indeed, although some reviews have already evidenced the positive impact of mindfulness-based interventions for TGNC

people (e.g., Iacono, 2019), to our knowledge, no studies have explored the feasible role of dispositional mindfulness on TGNC people's positive identity. Thus, further studies with TGNC people might include different and validated measures that are more suitable, such as the Transgender Identity Survey (TIS; Scandurra et al., 2017). In general, considering that contemporary literature increasingly emphasizes the importance of including transgender, nonbinary, and gender-nonconforming individuals, as well as a broader spectrum of sexual identities, such as pansexual, asexual, queer, and others, future studies might involve all these identities too. In addition, the low Cronbach's alphas of some FFMQ dimensions were due to the use of the short version of the scale (Baer et al., 2022), but they are similar to the values found in previous research (Costacurta et al., 2024). Although in this and other studies (see, e.g., Chiorri et al., 2023), this did not affect the validity of the scales, the relatively low reliability of the scores could have attenuated the estimates of the correlations and dominance analysis coefficients. To address this issue, the original 39-item FFMQ could be administered in future studies, provided that this does not significantly affect completion time and/or participant fatigue.

Furthermore, the cross-sectional nature of this study design does not allow us to test the causal links between the variables present in this investigation. For this reason, future research lines could test the same predictions with experimental investigations, e.g., including the manipulation of mindfulness through brief mindful meditations for the experimental group and a distractor task for the control group. At the same time, through different kinds of mindful meditations, such experimental studies might investigate which mindful meditations (e.g., loving-kindness meditation vs. breath-centered meditation) are more effective in reducing internalized stigma. Alternatively, longitudinal studies could be conducted, allowing for inferences of cause-effect relationships. Furthermore, future studies could be conducted on known groups (e.g., frequent and expert meditators versus occasional meditators versus non-meditators).

Future studies could also investigate possible sociocultural factors that moderate the associations between dispositional mindfulness and the antecedents of LGB persons' attitudes toward themselves. For instance, cross-national studies conducted in countries with different levels of indexes of legal and policy human rights situations of LGBTQ + people (ILGA, 2023) might allow researchers to investigate whether the relationships of dispositional mindfulness with sexual prejudice and with internalized sexual stigma vary with the increasing of such indexes.

Policy Implications

In terms of policy implications and weighing all these findings as a whole, it seems that fostering dispositional mindfulness might have important positive effects both in reducing internalized sexual stigma (ISS) and in fostering LGB people's authenticity and self-acceptance, which could, in turn, favor their well-being (Chew & Ang, 2023; Riggle et al., 2014; Wood et al., 2008). For instance, authenticity may have a positive impact on LGB people's decisions about the disclosure and concealment of one's sexual identity, favoring the reduction of minority stress (Meyer, 2003). However, our results also suggest that in order to enhance other aspects of the LGB people's positive identity, it is also important to reduce specific characteristics related to high social dominance and high authoritarianism, as well as to promote progressive beliefs and political participation that can improve the LGB people's perceptions of social justice, sense of community, and pride of belonging. Along these lines, Petrocchi et al. (2020) found that the social justice and community dimensions of LGB people's positive identity are related to people's perceptions of their social worlds as being a safe place, which is, in turn, related to individuals' feelings of belonging, acceptance, and well-being (Kelly et al., 2012).

In Italy, the current socio-political context still represents a challenge for many LGBTQ + people who are still discriminated against on different dimensions, such as equality and non-discrimination policies, family recognition, and protection against hate crimes (ILGA-Europe, 2023; Salvati et al., 2020). This study suggests that enhancing non-judging attitudes toward the self by way of mindfulness may favor a sense of authenticity in LGB people that may help them to navigate such a stigmatizing context better.

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Data Availability We are not able to share the raw data file since, in our consent form, we informed participants that "the data will be subject to statistical processing and, again in anonymous and aggregate form, may be included in publications, conferences, conventions, or seminars" (translated from Italian). If needed for reviewing purposes, we can provide the data privately to the Editor and/or Reviewers to check the accuracy of the analyses on the condition, however, that they provide us with a signed document stating that they will not share the data online or with anyone else.

Declarations

Ethics Approval The study met with the WMA Declaration of Helsinki (1964/2013), and it was approved by the Ethical Review Board for Research in Psychology at the University of Verona, Department of Human Sciences (Rep. n. 220/2023 – Prot. n. 86367 of 15/02/2023).

Conflict of Interest The authors declare no competing interests.

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