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Development and Initial Validation of Scales for Coming Out Vigilance and Positive Coming Out Responses

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Abstract

Coming out involves sexual and gender minorities (SGMs) disclosing their identity to others, and is often related to improved health, well-being, and social support. However, coming out is not always perceived as a positive event, and outcomes of identity disclosure may vary depending on how coming out is approached and how others respond. The present study reports on the development and validation of the Coming Out Vigilance (COV) and the Positive Coming Out Responses (PCOR) measures. Two subsamples of SGMs with varying degrees of outness—totaling 399 individuals—were utilized in the development and validation of these measures. Exploratory and confirmatory factor analyses suggested final scales comprising three items for the COV and eight items for the PCOR. These measures demonstrated acceptable (COV) to excellent (PCOR) internal consistency, as well as metric and scalar invariance between relevant demographic groups. The COV evidenced strong convergent and discriminant validity, negatively correlating with other measures of outness and concealment typically between $r = .2$ and $r = .5$. The PCOR did not evidence convergent or discriminant validity with measures of outness or concealment, suggesting that positive coming out responses are conceptually distinct from outness. Both measures also evidenced predictive validity with measures of mental health, well-being, and sexual identity. Taken together, initial findings indicate that the COV and PCOR are psychometrically sound and may be utilized in both research and clinical settings.

Keywords: LGBTQ, Coming Out, Measures, Vigilance, Affirmation

Development and Initial Validation of Scales for Coming Out Vigilance and Positive Coming Out Responses

Sexual minorities (individuals who experience some degree of same-sex attraction and/or who consistently engage in some degree of same-sex sexual behavior; Lefevor, Sorrell et al., 2019) and gender minorities (individuals whose gender identity does not correspond to that expected from sex assigned at birth; Toomey et al., 2018) are consistently faced with pressures to fit heterosexual and binary gender roles. As a result of these pressures, sexual and gender minorities (SGMs) often choose to conceal their sexual and/or gender identity from others. Such concealment efforts, though typically undertaken to avoid judgment, discrimination, or victimization from others (Duncan et al., 2019), often have insidious effects, including a decrease in authenticity and well-being, and an increase in depression, anxiety, and suicidality (Huang & Chan, 2022; Livingston et al., 2020; Meyer, 2003). Consequently, many SGMs choose to come out (disclose their sexual and/or gender identity to others) as a means to cope with these effects and to break free of the pressures to fit into a hetero- and cis-normative world.

Coming out experiences are typically conceptualized as events that lead to enhanced mental health and well-being. Coming out tends to occur first with close family or friends, although SGMs typically come out to people throughout their entire lives through various means (e.g., attending events with partners, social media posts). Broadly speaking, coming out has been linked to outcomes such as an increased sense of personal growth, self-acceptance, authenticity, and social relationships (Solomon et al., 2015). Coming out can also lead to a myriad of other positive outcomes such as increased self-esteem and decreased anger and depression when it occurs in settings where SGMs feel safe and hold more autonomy, such as around close friends or family (Legate et al., 2012). Many times, these positive outcomes are a direct result of the

conversations SGMs have with their parents and siblings (e.g., Baiocco et al., 2015; Rosati et al., 2020; Willoughby et al., 2008).

Although coming out is often associated with positive outcomes, this is not universally the case. For example, SGMs whose disclosure is met with perceived or actual rejection also report decreased social support and increased depression (Ryan et al., 2015). SGMs in environments where they are uncertain if others will respond positively to them may also experience increased stress, anxiety, and vigilance in preparing to come out (Keating & Muller, 2020; Timmins et al., 2017), with many ultimately choosing to continue to conceal their identity (Duncan et al., 2019). Although coming out is often a positive event or process, conceptualizing coming out as entirely positive fails to consider the ways in which various approaches and responses to coming out conversations affect the overall coming out experience and associated outcomes.

One of the reasons for the difficulty in understanding *how* and *when* coming out goes well is the lack of measures specific enough to look at the processes and outcomes related to coming out. Although there are measures of outness (e.g., Wilkerson et al., 2016) and growth associated with coming out (e.g., Vaughn & Waehler, 2010), there are no measures that examine specific coming out-related processes (e.g., methods for approaching coming out conversations, others' responses to coming out, affirmativeness of the coming out environment) or outcomes (e.g., well-being, social relationships, belongingness). Given that the ways in which SGMs come out and how they experience others' responses to their coming out ultimately impact their mental health and well-being (McDermott et al., 2019; Rosati et al., 2020), it is important to have reliable and valid measures of these constructs. The present study fills this gap by presenting two novel measures: one that quantifies vigilance experienced by SGMs regarding coming out and

another that quantifies how positively SGMs experience others' reactions to their coming out. Although the two measures are distinct, they are presented together due to their conceptual coherence and the similarity of research environments in which they would be used (c.f., Maddock et al., 2022).

Measuring Coming Out Vigilance

Vigilance refers to an awareness or alertness to one's surroundings, typically due to a perceived or actual threat to safety. Although a degree of awareness may be helpful in avoiding threats, vigilance may become maladaptive when individuals become excessively sensitive to environmental stimuli (hypervigilance; APA, 2013), which is often due to trauma- or anxiety-related stress and tends to be related to more adverse mental health outcomes (Hur et al., 2019; Riggle et al., 2021). Vigilance may be a response to a series of actual, perceived, or expectations of discriminatory events as well as chronic stigmatization (Keating & Muller, 2020). Vigilance has been qualitatively used to describe SGMs' reactions to or anticipation of prejudice and stigma (e.g., Keating & Muller, 2020; Timmins et al., 2017).

Minority stress theory (Meyer, 2003) posits that SGMs' vigilance results from stigma associated with being a minority, and is linked to negative impacts to health and well-being. Whether vigilant behaviors result in or are a result of decreased well-being remains unclear, although physiological perspectives (e.g., polyvagal theory) suggest that repeated vigilance and stress may lead to decreased well-being due to chronic wear and tear of an individual's mental capacities (Beauchaine et al., 2007; Lucas et al., 2018). Additionally, prominent theories such as the Interpersonal Theory of Suicide (Chu et al., 2017; Joiner, 2005) and Relational Cultural Theory (Jordan, 2017) note that belongingness is a vital human need, and that social vigilance is a common response to perceived threats to belonging, although it often paradoxically can lead to

additional feelings of disconnection. As such, vigilance can be conceptualized as a well-intentioned way of keeping oneself safe due to perceived or actual threats to social safety.

Vigilance may not always be easily recognized and is more common in contexts where rejection is more likely to occur, such as within religious communities where same-sex sexual behaviors and gender expansive expression is discouraged. Coming out as a religious SGM presents some additional challenges including heightened vigilance regarding discrimination and rejection from others, which are fueled by hetero- and cis-normative messaging in religious spaces (Russell & Fish, 2016). It is therefore unsurprising that SGMs are much more likely to conceal their sexual orientation or gender identity if they are religious or spiritual (Kubicek et al., 2009; Lefevor, McGraw et al., 2021; Shilo & Savaya, 2012).

Vigilance may be reported by SGMs as a helpful strategy for managing anxiety around coming out. In an effort to better understand factors related to positive coming out experiences for SGMs, Skidmore et al. (2022) identified specific ways that SGMs approached coming out that they perceived as contributing to “a positive coming out experience.” Participants indicated that they found it helpful to approach coming out by being selective with who they come out to, preparing before conversations (e.g., rehearsing the conversation, anticipating questions), and decreasing pressure on themselves by coming out in their own way (e.g., phone calls, in-person, social media posts). Although some of these ways are related to increasing social support and connection, most of these self-reported “positive approaches” entailed some degree of vigilance.

Vigilance has yet to be specifically measured in the context of the coming out process, but it has been measured more generally. Measures of hypervigilance—differing from general vigilance given its excessive degree of sensitivity to environmental stimuli; APA, 2013—tend to focus on individuals’ perceptions of themselves and others (Timmins et al., 2017), as well as the

frequency of vigilant behaviors and feelings in various contexts (e.g., in different environments, being exposed to traumatic events; Veldhuis et al., 2018). The only existing measure of vigilance specific to SGM populations focuses on hypervigilance (Riggle et al., 2021), asking participants to indicate the degree to which they feel hypervigilant in various situations relevant to SGMs (e.g., when around strangers, when in religious spaces) and how often they engage in various hypervigilant behaviors (e.g., scanning for potential threats, avoid making eye contact with others). These types of questions are common among existing vigilance measures (Riggle et al., 2021; Timmins et al., 2017).

SGMs' experiences surrounding coming out may not be detected by current measures of vigilance and hypervigilance. For example, existing measures focus predominantly on assessing vigilant and hypervigilant behaviors when in public or with a significant other. Measures that do consider different situations in which vigilant behaviors may occur tend to focus on situations in which concealment efforts take place, as opposed to a situation in which SGMs choose to disclose their identity to others, which inherently look different than vigilance related to concealment. Without a measure for vigilance related to the coming out process, there remains a gap in our understanding of how and when coming out can go well, and how and when it can go poorly. Conceptually, a vigilance measure should relate to increased minority stressors, as well as decreased life satisfaction and social support (e.g., Meyer, 2003; Riggle et al., 2021). There remains no current method to accurately and quantifiably assess the frequency with which SGMs engage in vigilant behaviors when coming out, and how this affects other minority stressors and overall health.

Measuring Positive Coming Out Responses

Because coming out affects both SGMs who come out and those to whom they come out, adequately understanding how coming out goes well necessitates an exploration of how people respond to SGMs' coming out (or how SGMs perceive others reactions). Social and contextual variables play a large role in understanding the relationship between coming out experiences and associated responses (Rosati et al., 2020). SGMs are also more likely to come out to people with whom they feel close, as well as in environments that are more affirming of same-sex sexuality and gender expansive expressions (Ryan et al., 2015). Conversely, when coming out experiences are met with rejection or judgment, SGMs typically suffer a variety of adverse physical and mental health outcomes (Baiocco et al., 2020; Rosati et al., 2020). Family reactions to coming out conversations may be some of the most powerful predictors of well-being, with families who respond with love and acceptance leading to SGMs reporting improved social relationships and life satisfaction (McDermott et al., 2019).

Minority stress theory may also explain how perceived or actual affirmative responses to coming out may affect SGMs' mental health. Minority stress theory posits that discrimination, prejudice, judgment, and rejection—common adverse reactions to coming out experiences—are best understood as “distal” stressors (Meyer, 2003). These stressors are experienced uniquely by SGMs (relative to heterosexual and cisgender individuals), and the degree to which SGMs experience distal stressors is thought to directly (and negatively) relate to their mental health (Russell & Fish, 2016). Indeed, SGMs who experience others' reactions to their coming out as non-supportive experience more depressive symptoms and worse physical health (Rothman et al., 2012).

Despite this clear link between others' responses to SGMs' coming out and mental health, there is not a measure of how SGMs experience others' reactions to their coming out.

Parental acceptance of their SGM children is among the closest concept that has been measured related to coming out responses. Parental acceptance can be conceptualized as “behaviors of love, affection, care, and support toward one’s SGM child” (Abreu et al., 2022, p. 4). Such acceptance is typically measured by prevalence of behaviors such as parents support their child’s gender expression, welcoming their child’s SGM friends to family events, and telling their child that they are proud to be their parent (Miller et al., 2020; Ryan et al., 2009). Similar to affirmative coming out responses, parental acceptance helps to protect against depression and suicidality in addition to promoting self-esteem, social support, and overall health (Ryan et al., 2009). Despite the overlap between parental acceptance and positive responses to coming out, parental acceptance does not fully capture what it means to respond positively to somebody’s coming out given its focus only on parents and on acceptance over a period of time as opposed to direct reactions to SGMs’ disclosure.

Although no measure exists that includes specific responses to SGMs’ coming out, SGMs anecdotally and qualitatively report feeling better about coming out when they are responded to with affirmation, validation, and understanding. From qualitative interviews, we know that SGMs report that their coming out experiences are more positive when those they came out to responded by showing love and acceptance, using empathic listening skills such as validating and listening, demonstrating support, celebrating, affirming that their relationship had not been negatively impacted by the coming out, and by advocating for SGMs (Skidmore et al., 2022). This qualitative study was the first to provide a specific list of affirmative responses to coming out; these responses coincide with findings that SGMs tend to report higher well-being when they are responded to with affirmation, validation, and understanding (Perrin-Wallqvist &

Lindblom, 2015). As such, we propose a measure that assesses whether SGMs perceive if others have reacted to their coming out conversations with affirmation, validation, and understanding.

Current Study

In an effort to better understand the nuance surrounding when coming out goes well, we propose two measures. These measures, although conceptually different, are both based on the themes identified from previous qualitative research where religious SGMs were asked to identify factors that related to positive coming out experiences (Skidmore et al., 2022). Although participants in the study reported their behaviors as positive approaches to coming out to others in a conservative religion (the Church of Jesus Christ of Latter-day Saints), we found that these behaviors were all vigilant in nature, leading to the creation of a coming out vigilance measure alongside a positive coming out responses measure. Following procedures for item development and construct validity (Clark & Watson, 2019), we examine these two measures with exploratory and confirmatory approaches, examine measure invariance, analyze internal consistency of these measures, assess the measures' convergent, discriminant, predictive, and incremental validity, and provide norms and cut off scores for each scale. Given the themes reported in the qualitative study, we hypothesized that the measures would each have a unidimensional structure, and that each would be reliable and valid. We further expected that our measures would demonstrate convergent and discriminant validity with outness and concealment. We expected our Coming Out Vigilance measure to demonstrate predictive validity with acceptance concerns, life satisfaction, and depression, and our Positive Coming Out Responses measure to demonstrate predictive validity with increased life satisfaction and social support, and decreased depression.

Method

One sample was collected for the present study and was randomly split into two to conduct the exploratory and confirmatory factor analyses. Given that the samples shared the same measures and were analyzed collectively for the exploratory and confirmatory factor analyses, we describe the samples both individually and collectively.

Procedures and Participants

The research team included six members who are intentionally religiously and socio-politically diverse in an effort to manage biases and recruit a variety of participants. The team all agree with and uphold the predominant psychological position on working with SMs and respecting religious practices (American Psychological Association, 2009; Pargament, 2013). Further, the team represent various identities across sexual identity (e.g., gay, bisexual, queer, heterosexual, and non-identified), religious identity (e.g., active Latter-day Saint, nonactive/former Latter-day Saint, agnostic, Christian), and gender identity (e.g., cisgender man, cisgender woman).

All data for the present study were collected from February to March 2022. The Institutional Review Board at Utah State University approved all study procedures prior to data collection. Participants were recruited as part of the research team's ongoing longitudinal study (4optionssurvey.com) with some participants being recontacted from earlier participation and other participants engaging for the first time. Both groups of participants were initially recruited via advertisements in relevant conference (e.g., the annual North Star and Affirmation conferences), therapeutic organizations for Latter-day Saint SGMs in Utah (e.g., LGBTQ Therapist Guild of Utah), postings in relevant social media groups and forums (e.g., Mormons Building Bridges, Exmormon Reddit, Affirmation), and through word-of-mouth. All participants

were compensated \$10 for completing the survey. A complete description of sampling procedures for the current study can be found at 4optionssurvey.com.

To be included in the study, participants had to be at least 18 years old, identify as an SGM (e.g., gay, lesbian, bisexual, transgender, queer), be a current or former member of the Church of Jesus Christ of Latter-day Saints, be out regarding their sexual and/or gender identity to at least some people, and have completed the entirety of the survey. In total, 399 participants met eligibility criteria and were included in the present study. Many participants identified as cisgender men (53.8%) with a bachelor’s degree (42.9%), White (94.5%), gay or lesbian (51.6%), religiously unaffiliated (44.4%), and between the ages of 22-46 ($M = 34.41$; $SD = 12.16$). The overall sample was then randomly split in two, with one being used for the exploratory factor analysis and the other being used for the confirmatory factor analysis. See Table 1 for a full list of participant demographics across both samples.

Table 1

Demographic Information for Participants in Samples One and Two

Variable	Exploratory Sample <i>n</i> = 200	Confirmatory Sample <i>n</i> = 199
Gender		
Ciswoman	23.0%	29.1%
Cisman	54.0%	53.3%
Transwoman	3.5%	2.0%
Transman	2.5%	3.5%
Non-binary/Genderqueer	17.0%	12.0%
Ethnicity		
Person of Color	5.0%	6.0%
White/European American	95.0%	94.0%
Education		
High school/GED	4.0%	4.0%
Some college	30.0%	25.6%
Bachelor’s degree	42.0%	43.7%
Graduate degree	24.0%	26.6%
Religious Affiliation		
None/unaffiliated	43.0%	46.2%

Christian – Latter-day Saint	38.0%	38.2%
Christian – Other	9.5%	12.1%
Other Religion	9.5%	3.5%
Sexual Identity		
Gay	41.5%	39.2%
Lesbian	8.5%	15.1%
Bisexual	13.5%	18.1%
Pansexual	1.5%	3.5%
Queer	35.0%	24.1%
Age (<i>M, SD</i>)	33.81 (11.80)	34.93 (12.54)

Measures

Measures of Coming Out Processes and Responses

Coming Out Vigilance. Coming Out Vigilance was assessed using a 7-item scale created from themes collected from previous qualitative analysis of SGM experiences (Skidmore et al., 2022). The scale asks participants to indicate the degree to which they agree with each item, using a Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (7). See Table 2 for a full list of scale items.

Positive Coming Out Responses. Positive Coming Out Responses was assessed using an 8-item scale created from themes collected from previous qualitative analysis of SGM experiences (Skidmore et al., 2022). The scale asks participants to indicate the degree to which they agree with each item, using a Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (7). See Table 2 for a full list of scale items.

Measures of Health & Well-being

Life Satisfaction. Life Satisfaction was assessed using the 5-item Satisfaction with Life Scale (Diener et al., 1985). The scale asks participants to indicate the degree to which each item describes them, using a Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (7). Items included “The conditions of my life are excellent,” and “So far, I have gotten the important things I want in life.” Internal consistency for the present study was good ($\alpha = .87$).

Depression. Depressive symptoms were assessed using the PHQ-9 (Kroenke et al., 2001). Participants indicated how often in the past two weeks they have been bothered by nine symptoms of depression including “feeling down” and “little interest or pleasure in doing things.” Participants responded on a 4-point Likert scale ranging from *Not at All* (0) to *Nearly Every Day* (3). The criterion validity of the PHQ-9 was supported by positive predictive ability with a diagnosis of major depression. The construct validity of the PHQ-9 was supported by correlations with other aspects of psychosocial functioning. Internal consistency for the present study was excellent ($\alpha = .92$).

Authenticity. Authenticity was assessed using the 12-item Authenticity Scale (Wood et al., 2008). The scale asks participants to indicate the degree to which each item describes them, using a Likert-type scale ranging from *does not describe me at all* (1) to *described me very well* (7). Items included “I always stand by what I believe in,” and “I live in accordance with my values and beliefs.” Internal consistency for the present study was good ($\alpha = .86$).

Family Support. Family support was measured using the Family Support subscale of the Multidimensional Scale of Perceived Social Support (Zimet et al., 1988). Participants were asked to indicate their agreement with statements such as, “I get the emotional help and support I need from my family.” This subscale uses a 5-point Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (7), and has evidenced strong internal consistency, convergent validity, and discriminant validity. Internal consistency for the present study was excellent ($\alpha = .90$).

Measures of Sexual Identity

Identity Concealment. Identity concealment was measured using the 6-item Concealment Behavior Scale (Jackson & Mohr, 2016). Using a 5-point Likert scale ranging from *not at all* (1) to *all the time* (5), participants indicated the frequency with which they engaged in

various concealing behaviors during the previous two weeks. Questions included behaviors such as allowing others to assume they are straight or avoiding contact with other lesbian, gay, or bisexual individuals. The authors of the scale reported good reliability and validity for the scale. Internal consistency for the present study was good ($\alpha = .89$).

Outness. Outness was measured using a single item that was determined to be as good a measure of outness as multi-item predictors (Wilkerson et al., 2016). Participants responded to the following question: “How open/out are you about your experience with same-sex attraction (current or former) and/or being LGBTQ+?” Participants indicated their response using five options ranging from *not at all open* (1) to *open (out) to all or most people I know* (5).

Identity Affirmation. Identity affirmation was measured using the three-item Identity Affirmation subscale of the Lesbian, Gay, or Bisexual Identity Saliency scale (Mohr & Kendra, 2011). Using a 6-point Likert scale ranging from *disagree strongly* (1) to *agree strongly* (6), participants indicated their agreement with statements such as “I am glad to be an LGB person.” This subscale has been shown to have good convergent, discriminant, and construct validity (Mohr & Kendra, 2011). Internal consistency for the present study was excellent ($\alpha = .91$).

Internalized Homonegativity. Internalized homonegativity was measured using the three-item Internalized Homonegativity subscale of the Lesbian, Gay, or Bisexual Identity Saliency scale (Mohr & Kendra, 2011). Using a 6-point Likert scale ranging from *disagree strongly* (1) to *agree strongly* (6), participants indicated their agreement with statements such as “If it were possible, I would choose to be straight.” This subscale has been shown to have good convergent, discriminant, and construct validity (Mohr & Kendra, 2011). Internal consistency for the present study was good ($\alpha = .89$).

Data Preparation and Analysis Plan

Factor Analysis. Parallel analysis and scree plots were utilized to identify the number of factors underlying coming out items. The sample was randomly split into two subsamples to run the exploratory factor analysis (EFA; $n = 200$) and confirmatory factor analysis (CFA; $n = 199$). The EFA was performed first to identify items to throw away with low loadings and high cross loadings, and to identify the overall factor structure underlying items. Items were retained if their factor loadings were greater than .350 and their cross loadings were less than .150 (Tabachnick & Fidell, 2007). The CFA was then performed to verify the factor structure identified by the EFA. Both the EFA and the CFA were performed with weighted least squares estimation. All items were estimated as being ordered categorical variables given their response categories are on a 5-point Likert-type scale (Kline, 2016). Model fit was assessed using conventional guidelines (Kline, 2016), and was considered acceptable based on the following criteria: $\chi^2 p$ -value $> .05$, RMSEA/SRMR $< .08$, CFI/TLI $> .90$.

Measurement Invariance. Measurement invariance testing was then used to determine whether the identified factors performed equally well across demographic groups. The demographic groups used for invariance testing included current religious affiliation, gender, and sexual identity. Per Chen (2007), measurement invariance testing included fitting three multiple group CFA models (configural model, metric model, and scalar model) for each tested demographic variable and assessing whether the fit worsened between models. Model fit was considered worse if it exceeded Δ CFI value of .01 (Chen, 2007). The configural model fit a multiple group CFA that allowed all item loadings and intercepts to be estimated freely across groups. The metric model fit a multiple group CFA that constrained all item loadings to be equal across groups but allowed item intercepts to be freely estimated across groups. The scalar model fit a multiple group CFA that constrained both loadings and intercepts to be equal across groups.

If the ΔCFI is less than .01 between the configural and metric model, then the scale can be said to pass the metric invariance test. If the ΔCFI is less than .01 between the metric and scalar model, then the scale can be said to pass the scalar invariance test. If the scale passes the metric invariance test, it can be used to make valid comparisons on association statistics (e.g., correlations, regression coefficients) across groups. If the scale passes the scalar invariance test, it can be used to make valid comparisons on mean difference statistics (e.g., *t*-tests, ANOVA). A measure that passes both tests demonstrates that it is more likely to be valid among diverse samples (Kline, 2016).

Results

Preliminary Analyses

Before running the factor and measurement invariance analyses, we examined whether our data met the assumptions for structural equation modeling (Kline, 2016). These assumptions included that the data are factorable, the data are normal, and there are no univariate or multivariate outliers. No missing data was identified in our data. The factorability of the data was assessed with Bartlett's test of sphericity (Tabachnick & Fidell, 2007), results of which indicated that the correlation matrix was factorable ($\chi^2(105) = 2543.99, p < .001$). Normality was assessed by examining skewness and kurtosis values. Data could be considered normal if skewness values were below 4 and kurtosis values below 10. The normality assumption was met given skewness values ranged from -1.28 to -0.08 and kurtosis values ranged from -1.39 to 1.59. There were eight univariate outliers identified, given these participants had *z* values exceeding 3.29. There were also three multivariate outliers ($p < .001$) as identified by Mahalanobis distance statistics (Tabachnick & Fidell, 2007). As such, analyses were conducted with and without these cases;

given the results were similar in both instances and there were no meaningful differences in fit statistics, loading values, or significance values, we report results with the outliers included.

Additionally, although we intended to run the EFA, CFA, and measurement invariance analysis separately for both scales, the vigilance scale turned out to include only three items. Given that fit indices for EFAs and CFAs are only provided for scales with at least four items, we decided to run analyses for both scales together. We present the results of these analyses together (see Table 2 and Table 3).

Coming Out Vigilance Factor Analyses

Exploratory Factor Analysis

Results from parallel analysis based on 1,000 simulated random data sets of EFA eigenvalues showed that there were three factors. However, the scree plot revealed either two or three factors underlying the data. Only two factors had an eigenvalue loading above 1. Given that all items on the suggested third factor had higher loadings on one of the other two factors, the parallel analysis was run again with just two factors. The EFA was conducted with sample one to trim items and assess the factor structure of the scale (see Table 2). Results suggested that the two-factor EFA demonstrated good model-data fit on three of the five fit indices. Items loaded significantly onto their respective factors with loadings ranging from .69 to .94. The two factors were named Coming Out Vigilance (COV; items 1-3), and Positive Coming Out Responses (PCOR; items 4-11). The COV variable had a mean of 4.55, standard deviation of 1.57, skewness of -0.37, and kurtosis of -0.72. The PCOR variable had a mean of 4.83, standard deviation of 1.16, skewness of -0.57, and kurtosis of 0.20.

Confirmatory Factor Analysis

A CFA was run to confirm the factor structure identified in the EFA (see Table 2). Results of the CFA suggested that the model demonstrated good fit on three out of the five fit indices and provided support to the two-factor structure demonstrated in the EFA. All item loadings were significant and ranged from .61 to .89. A correlated factors model was then used to test the two-factor model, which failed to converge, suggesting that the two factors operate as separate scales and not subscales on the same measure. All items had significant loadings that met suggested guidelines (loading > .60).

Table 2

Exploratory and Confirmatory Factor Analyses for the Coming Out Vigilance and Positive Coming Out Responses Scales

Item	EFA		CFA	
	F1	F2	F1	F2
1. I am selective regarding who I come out to	.71	.02	.71	
2. I prepare before coming out so I know what to say	.94	-.02	.89	
3. I prepare for how others may react before coming out to them	.60	.03	.61	
4. People I came out to showed that they love me	-.01	.77		.78
5. People I came out to tried to understand my experiences as a sexual or gender minority	-.01	.72		.77
6. People I came out to were supportive of me	-.07	.79		.87
7. My relationship with others wasn't negatively affected by my coming out	-.02	.69		.67
8. People I came to showed that they accept me as a sexual or gender minority	.02	.84		.89
9. People I came out to celebrated my sexual and/or gender identity with me	.02	.80		.82
10. People I came out to advocated for me	.00	.77		.78
11. People I came out to validated my experiences	.01	.82		.85
χ^2 (df)	167.15 (34)		184.25 (43)	

<i>p-value</i>	< .01	< .01
CFI/TLI/SRMR	.95/.92/.05	.96/.95/.05
RMSEA [90% CI]	.14 [.12, .16]	.13 [.11, .15]

Measurement Invariance Analyses

The two measures were tested for measurement invariance by running a series of multiple group CFA models to assess whether the measures passed both scalar and metric invariance tests. Invariance tests were run for comparisons by current religious affiliation (Current Latter-day Saint, Former Latter-day Saint), gender (cisgender women, cisgender men, and transgender/non-binary individuals), and sexual identity (lesbian/gay individuals, bisexual/pansexual/polysexual individuals). Results showed that the scale passed both metric and scalar invariance tests for sample type, gender, and sexual identity.

Table 3

Measurement Invariance by Current Religious Affiliation, Gender, and Sexual Identity

Model	χ^2			RMSEA				Model Comparison			
	Value	df	<i>p</i>	Value	[90% CI]	CFI	TLI	SRMR	Compare	Δ CFI	Pass
By Affiliation (current/former LDS)											
1. Configural Invariance	255.75	86	< .001	.099	[.086, .112]	.921	.899	.051	—	—	—
2. Metric Invariance	266.47	95	< .001	.095	[.082, .108]	.920	.907	.063	2 vs. 1	.001	Pass
3. Scalar Invariance	292.20	104	< .001	.095	[.082, .108]	.912	.907	.070	3 vs. 2	.008	Pass
By Gender											
1. Configural Invariance	314.76	129	< .001	.104	[.090, .117]	.915	.891	.063	—	—	—
2. Metric Invariance	342.05	147	< .001	.100	[.086, .114]	.910	.899	.086	2 vs. 1	.005	Pass
3. Scalar Invariance	381.45	165	< .001	.099	[.086, .112]	.901	.901	.088	3 vs. 2	.009	Pass
By Sexual Identity											
1. Configural Invariance	211.70	86	< .001	.096	[.080, .112]	.924	.902	.050	—	—	—
2. Metric Invariance	215.79	95	< .001	.090	[.074, .106]	.927	.915	.055	2 vs. 1	-.003	Pass

3. Scalar Invariance 233.88 104 < .089 [.074, .921 .917 .059 3 vs. 2 .006 P

Note. LDS = Latter-day Saint. Results for the CLCS are on the top panel and the CLCS-B is on the bottom panel.

Coming Out Vigilance Reliability and Validity Analyses

Reliability

The COV evidenced overall adequate internal consistency ($\alpha = .74$). As such, the items of the COV appear to work appropriately together as one cohesive measure.

Convergent and Discriminant Validity

The COV evidenced acceptable convergent and discriminant validity with measures of identity (see Table 4). Correlations between the COV and both Outness and Identity Centrality were significant and negative. These correlations were less than .70, suggesting that the COV is conceptually distinct from these constructs. Additionally, the correlation between the COV and Concealment was significant and positive, suggesting that those who reported more frequent vigilant behaviors surrounding coming out also reported more concealment. This correlation was also less than or equal to .70, suggesting that the COV is conceptually distinct from Concealment.

Predictive Validity

Predictive validity was assessed by running correlations between the COV and various mental health, well-being, and identity measures largely influenced by our literature review. As expected, the COV was related to decreased Authenticity and Life Satisfaction, suggesting that those who are more vigilant in their coming out approaches may also be less authentic and satisfied with their lives. Additionally, the COV was related to increased Internalized Homonegativity, suggesting that those who are more vigilant in their coming out approaches also tend to have more internalized stigma (see Table 4).

Table 4*Correlations Between the COV, PCOR, Mental Health, Well-being, and Identity*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. COV	-	-.05	-.61	.45	-.13	.28	.09	-.28	-.14	-.07
2. PCOR	-.06	-	.08	-.12	.04	-.10	-.21	.14	.25	.46
3. Outness	-.60	.09	-	-.55	.27	-.39	-.17	.32	.18	.10
4. Concealment	.46	-.16	-.62	-	-.19	.51	.32	-.45	-.21	-.13
5. Identity Centrality	-.12	.03	.23	-.24	-	-.31	-.01	.08	-.10	.00
6. IH	.28	-.13	-.40	.52	-.31	-	.26	-.36	-.20	-.05
7. Depression	.06	-.21	-.19	.30	-.05	.30	-	.51	-.54	-.26
8. Authenticity	-.30	.14	.35	-.44	.07	-.33	.51	-	.45	.20
9. Life Satisfaction	-.13	.26	.17	-.22	-.10	-.21	-.55	.46	-	.42
10. Family Support	-.09	.46	.14	-.17	.05	-.08	-.30	.26	.42	-

Note. COV = Coming Out Vigilance; PCOR = Positive Coming Out Responses; IH =

Internalized Homonegativity. Bolded values indicate relationships significant at $p < .05$.

Numbers above the diagonal indicate correlations; numbers below the diagonal indicate partial correlations, including controls for Age, Gender Identity, Religious Affiliation, and Race/Ethnicity.

Cut Off Scores

We established cut-off scores for both scales by categorizing the scores into low, medium, and high. Scores 1 standard deviation (*SD*) below the mean were considered low, scores between 1 *SD* below the mean and 1 *SD* above the mean were considered moderate, and scores above 1 *SD* were considered high (Ng Fat et al., 2017).

Positive Coming Out Responses Reliability and Validity Analyses

Reliability

The PCOR scale evidenced overall excellent internal consistency ($\alpha = .91$). As such, the items of the PCOR appear to work appropriately together as a measure.

Convergent and Discriminant Validity

The PCOR also did not evidence acceptable convergent and discriminant validity with measures of identity (see Table 4). Correlations between the PCOR and Concealment were significant and negative, suggesting that those who reported a higher frequency of positive coming out responses also reported less identity concealment, although this relationship was weak. Further, the PCOR did not significantly correlate with Outness or Identity Centrality, suggesting that these constructs may not be related and positive coming out responses may not be contingent on how out an SGM is or how much pride they hold regarding their identity.

Predictive Validity

Predictive validity was assessed by running correlations between the PCOR and various mental health, well-being, and identity measures largely influenced by our literature review. The PCOR was related to decreased Depression and increased Authenticity, Life Satisfaction, and Family Support (see Table 4).

Cut Off Scores

We established cut-off scores for both scales by categorizing the scores into low, medium, and high. Scores 1 standard deviation (*SD*) below the mean were considered low, scores between 1 *SD* below the mean and 1 *SD* above the mean were considered moderate, and scores above 1 *SD* were considered high (Ng Fat et al., 2017).

Discussion

In the present study, we developed the COV and PCOR and assessed their reliability and validity using a sample of 399 SGMs. The COV contains three items that assess various vigilant behaviors undertaken by SGMs when coming out to others. The PCOR contains eight items that assess the frequency with which SGMs report others giving positive responses to their coming

out. Both measures were developed from qualitative research, ensuring content validity. As expected, our analyses support both the COV and PCOR as reliable measures with evidence of convergent, divergent, and predictive validity. Further, both measures passed metric invariance tests across various demographic groups (i.e., current religious affiliation, gender, sexual identity), suggesting that the same underlying construct is being measured across groups. Although further testing is needed to verify these reliability and validity results across other samples, the present study indicates that the COV and PCOR have strong bases for generalizability. Below, we describe the strengths and potential uses for each of the two measures.

The Coming Out Vigilance Measure

The Coming Out Vigilance measure provides the first direct assessment of SGMs' engagement in vigilant behaviors when coming out. The measure was developed from qualitative interviews in which religious SGMs described ways in which they approached coming out. Through these interviews, we noted that several of these approaches were vigilant in nature (rehearsing the coming out conversation, being selective with who one comes out to, anticipating others' reactions; Skidmore et al., 2022). Given that the majority of the conversations regarding when coming out goes well focus on how others respond (e.g., Baiocco et al., 2020; Rosati et al., 2020), we developed the COV in order to determine how these vigilant approaches to coming out, which SGMs may be utilizing in an effort to avoid potential rejection from others and protect themselves (Keating & Muller, 2020), relate to SGMs identity development and well-being.

Although SGMs interviewed viewed vigilant efforts as helpful (Skidmore et al., 2022), the COV was related to high concealment, and low outness and life satisfaction. Considering that

vigilance tends to be heightened among SGMs who report concealing their identity from others (Bry et al., 2017), it follows that those who report more vigilant behaviors when coming out are more likely to be concealing their identity from most people and do not have much experience with coming out. It thus follows that SGMs who have come out more frequently or to more people exhibit less vigilant behaviors when approaching additional coming out conversations. Given existing literature regarding the relationship between vigilance and mental health outcomes (e.g., Riggle et al., 2021; Timmens et al., 2017), it follows that vigilance surrounding coming out is correlated, albeit to a small degree, with a decrease in life satisfaction. Surprisingly, such vigilance was not related to depression, suggesting that engaging in vigilant behaviors when coming out may not be particularly detrimental to one's mental well-being. It may also be that the benefits of coming out outweigh some of the detriments that typically occur alongside vigilant behaviors.

Unlike existing measures of vigilance, the COV assesses the specific ways in which vigilance relates to the coming out processes, which may help shed light on both how and when coming out can go well and how and when it can go poorly. For example, the COV includes items that assess the degree to which SGMs prepare and consider regarding how to come out, to whom, and how others may react. In contrast, existing measures of vigilance and hypervigilance focus on individuals' perceptions of themselves and others (Timmins et al., 2017) and the frequency of hypervigilant behaviors in different environments (e.g., at work, in public; Veldhuis et al., 2018). Vigilance measures that consider different environments include concealment, but continue to miss out on the ways in which vigilance may appear not when an SGM is attempting to hide their identity, but when they actively choose to disclose it. Due to its novel nature and specificity, the COV is a particularly useful tool in helping to uncover the degree to which

vigilance occurs when coming out, and how such vigilance impacts the overall coming out experience. Given that coming out looks different depending on time and context, the COV is also beneficial in that it provides an overall frequency of vigilant behaviors across situations.

Coming out is an interactive process that has the potential to influence various aspects of mental health and sexual identity development. Those who reported more vigilant behaviors when coming out evidenced an increase in internalized homonegativity, as well as a decrease across various aspects of well-being (e.g., authenticity, life satisfaction, and identity centrality). Coinciding with our findings, SGMs who report vigilant behaviors more generally tend to have more internalized stigma and decreased well-being (Keating & Muller, 2020; Meyer, 2003; Timmins et al., 2017). It may be that vigilance comes as a byproduct of internalizing negative messages regarding one's sexual or gender identity, such that those who have internalized the message that being an SGM is "bad" may assume others do as well, and thus engage in vigilant behaviors to avoid victimization and judgment from others. Vigilance both generally and when approaching coming out relates to less well-being, which makes sense when considering that those who engage in more vigilant behaviors tend to conceal their identity more, which is also related to less authenticity, life satisfaction, and identity centrality (Riggle et al., 2021).

The Positive Responses to Coming Out Measure

The Positive Responses to Coming Out measure provides the only direct assessment of SGMs' perceptions of others' reactions to their coming out. Given that coming out is a critical moment (or moments) in an SGM's identity development, understanding how SGMs perceive others' reactions to their coming out provides insight into their continued identity development and well-being.

Unlike measures of parental acceptance/rejection, the PCOR assesses a broader range of positive responses from others. For example, the PCOR includes items that assess the degree to which others celebrate, advocate for, and validate SGMs' identities. In contrast, measures of parental acceptance tend to focus more strongly on parental rejection (e.g., Greene et al., 2015) or include a limited number of items assessing a smaller range of positive responses (e.g., Miller et al., 2020). Further, the PCOR may be used across varied contexts, including reactions of friends, partners, and coworkers to coming out. Because of this versatility, the PCOR may be particularly useful for individuals who come out after having left the home as other relationships are likely more salient than their familial relationships (Lewis, 2011).

The PCOR strongly relates to a myriad of benefits, including increased family support, life satisfaction, and authenticity, as well as decreased depression. As expected, receiving positive or affirming responses to one's coming out improves mental well-being, with the LGBTQ+ person feeling safer, more satisfied, and less anxious and depressed overall following the positive response of others (McDermott et al., 2019). The PCOR's relationship with family support suggests that individuals' perceptions of others' reactions to their coming out is related to their overall perceptions of family support. These findings coincide with how others demonstrate acceptance, love, and validation to SGMs more generally (Abreu et al., 2022; McDermott et al., 2019; Ryan et al., 2009), suggesting that SGMs' well-being may be improved when they receive these responses from others right when they come out. Many SGMs note that their initial identity disclosure impacted if and how they approached future disclosures, and that their first time coming out had lasting effects on their mental health and relationships (Li & Samp, 2019). As such, longitudinal studies using cross-lagged designs are needed to assess the

temporality of these relationships, but we suspect a directional effect from PCOR scores to family support scores.

Clinical Uses for the COV and PCOR

Given the predominant narrative that coming out largely leads to improved social relationships and decreased stress, clinicians may often advocate for clients to disclose their identity to others without considering how SGMs may approach such conversations and how others may respond. As such, clinicians may use the COV and PCOR as a starting point for discussions surrounding the effects of vigilantly approaching coming out, as well as the benefits from receiving affirmation and love from their coming out conversations. Further, the COV and PCOR may be utilized in clinical work to help SGMs reflect on how they approach coming out and how they perceive others' responses. Such insight could help SGM clients avoid or minimize the negative impacts of engaging in vigilant behaviors, as well as understand and maximize the benefits of receiving loving and affirmative responses to their disclosure from others.

Limitations and Future Directions

Although the current study represents an important contribution to the field, findings must be considered in light of the following sampling and measurement limitations. The present study utilized a population of SGMs who are or were members of the Church of Jesus Christ of Latter-day Saints as part of a larger study (www.4optionssurvey.com). While our sample represents diversity across sexual and gender identities, there were inherent limitations given the religious background of these participants. Our sample was also predominantly White, which largely coincides with the U.S. population of members of the Church of Jesus Christ of Latter-day Saints, but represents limitations in terms of generalizability of these measures across various racial/ethnic identities. As such, future studies that utilize these measures with more

religiously and racially diverse samples can help solidify the generalizability of our measures. Our sample also consisted on individuals who have all come out to at least one person, thus calling into question whether those who have not come out (and are potentially the highest in vigilance) were not accounted for. As such, the scales may be constructed without those who are very high in vigilance. Further, the present study was administered via an online survey, thus limiting our sample to those with internet access and may therefore lead to oversampling of higher SES and urban populations (Skinner et al., 2003).

Due to space limitations in our survey, we did not evaluate a variety of constructs relevant to the COV and PCOR. Coming out has the potential to improve physical health and resilience, as well as identity improvements such as increased self-esteem and self-acceptance (e.g., McDermott et al., 2019; Ryan et al., 2009). Further, growth related to coming out has been conceptualized as occurring both at the individualistic (e.g., honesty, satisfaction, personal comfort) and collectivistic levels (e.g., advocacy work, community involvement, combating bias; Vaughn & Waehler, 2010). Given the specific ways in which growth and improvements related to coming out have previously been conceptualized, future studies looking at the relationship between the COV and PCOR and such individualistic and collectivistic constructs will help elucidate the additional ways in which vigilance behaviors when coming out and positive coming out responses may benefit SGMs.

The COV and PCOR offer effective methods of analyzing coming out-related outcomes across identities. Longitudinal studies may be among the most effective ways of determining the long-term emotional and social impacts of coming out. The COV can be used to help examine how coming out and the associated responses predict future outness, the presence of minority stressors, social support, and mental health outcomes. More specifically, the COV measures can

be used to examine if vigilant behaviors around coming out more potently predict these outcomes than general outness. Identifying if vigilance truly predicts worse outcomes can help SGMs understand both when and how coming out conversations go well and when they can go awry. The PCOR can also be used longitudinally to offer additional evidence for the findings that receiving love and acceptance for others increases the likelihood of future outness and improved well-being over time (Li & Samp, 2019).

Cross-culturally, the COV and the PCOR can offer insights into how coming out may look different for SGMs with various identities. Extant measures of outness and concealment vary in frequency across samples, suggesting that different demographic groups may come out or utilize concealment efforts to varying degrees. As such, the COV can be used to examine if vigilant behaviors are more common among different populations, and if this vigilance is associated with a group's increased concealment efforts over other populations. SGMs' perceptions of positive coming out experience likely vary across cultural contexts. Given the demographics of our current sample, we are confident that the PCOR is reliable and valid for religious, White sexual minorities. However, this relationship remains less clear for SGMs with other backgrounds; for example, we are less confident that a bisexual cisgender woman of color living in the United States would both perceive and experience the responses on the PCOR in the same way as an asexual nonbinary person living in Asia. Therefore, the PCOR ought to be utilized to examine a) whether people with various identities (e.g., sexual and gender minorities, religious affiliation, race/ethnicity) are positively responded to more frequently than other groups, and b) if these responses relate to the same outcomes in the same way across demographics. Understanding the ways in which coming out responses are perceived across cultures and influence different outcomes may help uncover some of the ways in which context,

intersectionality, and group membership influences the overall coming out experience. The authors of the present study are conducting a follow-up study to further validate the COV and the PCOR with participants across a variety of religious and racial/ethnic backgrounds.

Conclusion

The present study introduces two psychometrically sound measures related to coming out experiences: the COV and the PCOR. The three-item COV measure demonstrated acceptable internal consistency, and good concurrent, discriminant, and predictive validity. The PCOR measure demonstrated excellent internal consistency and good predictive validity. Further, both measures were shown to function well across diverse religious, sexual, and gender identity groups. The COV is the first measure of vigilant behaviors surrounding coming out, and the PCOR is the first measure that assesses the frequency of receiving positive responses to SGMs' coming out. The present study includes participants with a broad range of sexual and gender identities. Future research is necessary to explore the applicability of these measures among various samples and compared to other measures. These measures provide researchers the opportunity to better explore both how and when coming out relates to various health, well-being, and sexual identity outcomes.

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