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Development of the Conceptual Future Parent Grief (CFPG) Scale for LGBTQ+ People

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Parenthood is highly valued around the world. Lesbian, gay, bisexual, transgender, and queer (LGBTQ+) people, however, have faced a history of discrimination and challenges related to becoming parents (e.g., legal and/or practical barriers to adoption or biological parenthood). As such, LGBTQ+ youth may believe that certain pathways to parenthood (or parenthood itself) are unavailable to them. These feelings could prompt experiences of ambiguous loss related to a future idealized self. No quantitative research, however, has been conducted to capture these possible experiences; scale development is an important step to attempt to quantify them. Here, we report results from two studies using exploratory and confirmatory factor analysis to investigate the factor structure of a new scale reflecting conceptual future parent grief (CFPG) among LGBTQ+ individuals. Participants also responded to several measures to explore validity with the CFPG scale. Following model respecification, a 9-item one-factor solution resulted, reflecting ambiguous loss, complex grief, and sexual stigma—all of which could contribute to difficulties in reconciling one's LGBTQ+ and future parenthood identities. Significant associations with greater authenticity of LGBTQ+ identity, depressive symptoms, and sexual stigma provided evidence of convergent and divergent validity with the CFPG scale. Thus, ambiguous loss among LGBTQ+ people may connect to aspects of identity, mental health, and parenthood goals. Developing this scale represents a first step toward an assessment for LGBTQ+ individuals regarding future parenthood. Understanding more about CFPG among LGBTQ+ individuals could inform prevention efforts to reduce negative mental health symptoms and enhance positive LGBTQ+ identity development.

Keywords: ambiguous loss, future parenthood, identity, LGBTQ+, mental health

In the United States, parenthood is a highly valued milestone of adulthood (Riskind, Patteson, & Nosek, 2013). Among lesbian, gay, bisexual, transgender, and queer (LGBTQ+) people, however, the road to parenthood has long been lined with legal and practical obstacles, including interpersonal and institutional discrimination (Riskind et al., 2013). These barriers can lead LGBTQ+ individuals to believe that parenthood is unattainable (dickey, Ducheny, & Ehrbar, 2016). As such, LGBTQ+ people may experience the ambiguous loss of an idealized future self as related to parenthood (Boss, 2016, 2018). Exploring how LGBTQ+ individuals perceive future parenthood in terms of life goals, identity, and ambiguous loss is important to understand as a possible area for intervention in reducing psychological distress resulting from stigma and minority stress. No quantitative research or validated measure, however, exists regarding possible grief that LGBTQ+ adults face in thinking about future parenthood. Moreover, studies about LGBTQ+ parent families have often lacked strong theoretical frameworks (Farr, Tasker, & Goldberg, 2017; van Eeden-Moorefield, Few-Demo, Benson, Bible, & Lummer, 2018). Thus, theoretically driven scale development represents an important first step in quantifying LGBTQ+ people's experiences of ambiguous loss relevant to envisioning parenthood. This study aimed to develop a theoretically grounded assessment for research and clinical use with sexual and gender minority individuals to better understand their experiences of conceptual future parenthood grief (CFPG).

Minority Stress Theory and Positive LGBTQ+ Identity

Minority stress is conceptualized as the psychosocial stress that members of marginalized social groups experience, including LGBTQ+ people (Herek, 2016; Meyer, 2015). Unique minority stressors for LGBTQ+ people include sexual stigma[1], identity concealment, and expectations of discrimination or rejection, and

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[1] Herek (2016) defined *stigma* as "negative regard, inferior status, and relative powerlessness that society collectively accords to people who possess a particular characteristic or belong to a particular group or category," and *sexual stigma* referred "to all facets of stigma associated with same-sex desires, sexual behaviors, and relationships, as well as sexual minority communities" (p. 357). In this article, we use *stigma* and *sexual stigma* somewhat interchangeably, and we also make use of these terms to refer to stigma experienced by the LGBTQ+ community broadly.

these stressors are significantly associated with psychological health outcomes (Herek, 2016; Meyer, 2015). An underlying assumption of minority stress theory is that stress is often experienced at chronic levels due to the pervasive and embedded nature of stigma in broader social and cultural milieus. Stigma may result from interpersonal and institutional discrimination, and it can apply to experiences of pursuing parenthood (e.g., policies that prevent LGBTQ+ individuals from adopting; Gato, Santos, & Fontaine, 2017; Meyer, 2015). Furthermore, stigma can be perceived (i.e., one's awareness of anti-LGBTQ+ attitudes or fear of experiencing discrimination) or enacted (i.e., overt experiences of prejudice and discrimination; Herek, 2016; Logie & Earnshaw, 2015).

Meyer (2015) discusses minority stress processes as ranging along a continuum of stressors from proximal to distal, and it is these stressors that are linked with negative health outcomes such as depression or anxiety. Proximal stressors can be experienced through socialization and internal cognitive processes, such as internalized stigma about being LGBTQ+, LGBTQ+ identity management or concealment, or stigma consciousness (i.e., expectations or anticipation of stigma and discrimination on the basis of being LGBTQ+; Meyer, 2015). Distal stressors are those that involve overt discrimination, microaggressions or daily hassles, or nonevents (i.e., anticipated life events or milestones that are thwarted; Meyer, 2015). Frost and LeBlanc (2014) describe "nonevent stress" among LGBTQ+ individuals as the extent that stigma-related barriers are experienced in pursuing and achieving life goals, such as parenting. Importantly, nonevent stress is associated with mental health disparities among sexual minority versus heterosexual individuals (Frost & LeBlanc, 2014). Further, it is relevant to acknowledge that these nonevent stressors, and negativity experienced by LGBTQ+ people are results of structural inequality, and not indicative of sexual or gender identities themselves.

Indeed, a strong and positive identification with being LGBTQ+ (i.e., positive LGBTQ+ identity; having positive thoughts and emotions about being LGBTQ+; Riggle, Mohr, Rostosky, Fingerhut, & Balsam, 2014) can be protective for LGBTQ+ people, buffering from adverse health effects of minority stress through resilience, coping, and social support (e.g., LGBTQ+ community connections, positive LGBTQ+ role models; Frost, 2017; Meyer, 2015). Moreover, having a positive LGBTQ+ identity, sometimes termed or studied as "authenticity" (e.g., Riggle, Rostosky, McCants, & Pascale-Hague, 2011; Vaughan & Rodriguez, 2015), has been associated with greater overall psychological well-being (Riggle et al., 2014). However, it is currently unclear how aspects of stigma, LGBTQ+ identity authenticity, and idealization of parenthood are associated with considerations of future parenthood and potentially involuntary childlessness. Further, exploration of these above constructs has not yet occurred using ambiguous loss theory and thus is an area of interest.

Ambiguous Loss Theory and Desires and Intentions for Future LGBTQ+ Parenthood

Ambiguous loss theory, at its core, is the notion of being "here but not here" such that something or someone is physically present but psychologically absent or vice versa (Boss, 2016). Prototypical examples include relationship experiences with family members who have Alzheimer's (i.e., psychologically absent, physically present), or alternatively, are deployed overseas (i.e., physically absent, psychologically present; Boss, 2016). The measurable construct of ambiguous loss is "boundary ambiguity," described as the stress and confusion that results from an individual questioning their current social role, including parenting (e.g., "If I do not have legal custody of my son, am I still his mother?"; Allen, 2007). Ambiguous loss is often characterized by the lack of cultural scripts surrounding the loss itself. Due to nonexistence of normalized or widely accepted processes with which to navigate the loss, ambiguous loss is often continuous and difficult to reconcile (Boss, 2013, 2016; McGuire, Catalpa, Lacey, & Kuvalanka, 2016). As such, ambiguous loss can become associated with mental health symptoms such as depression and anxiety (Boss, 2016). In contrast, subcultural scripts that foster positive LGBTQ+ identity could serve as sources of strength toward buffering negative health outcomes when faced with ambiguous loss (Dziengel, 2015; Meyer, 2015; Vaughan & Rodriguez, 2015).

Although the bulk of ambiguous loss research has focused on families and communities, ambiguous loss theory can be applied at the individual level, including among LGBTQ+ individuals (Dziengel, 2015). For example, this approach has been proposed theoretically to studies of transgender individuals and their families who are moving through gender transitions (e.g., McGuire et al., 2016), as well as applied in case studies of lesbian couples with children going through divorce (Allen, 2007) and gay father stepparents (Jenkins, 2013). Further, parents of LGBTQ+ youth often note that they experience ambiguous loss related to a future grandparent identity or a "loss" of the child they raised (dickey et al., 2016; Norwood, 2013). Thus, it is reasonable that LGBTQ+ adults may also experience ambiguous loss related to hypothetical or idealized future selves, including in the realm of parenthood (Ellis, Wojnar, & Pettinato, 2015).

Despite strong cultural norms and emphasis on parenthood in the United States (and throughout the world), LGBTQ+ people may feel at odds with parenthood (Gato et al., 2017). Dominant societal master narratives suggest that parenthood is an expected and exclusive experience for cisgender heterosexual individuals, which also reinforce notions that LGBTQ+ adults are not fit or suitable to be parents, nor are interested in doing so (Vaccaro, 2010). As such, LGBTQ+ people may at times perceive parenthood to be out of reach or an experience that exists outside of their LGBTQ+ identity. Heteronormative views of family formation, as well as pervasive legal and practical obstacles to parenthood, have been demonstrated as sources of discrimination and stressors for LGBTQ+ individuals in considering future parenthood in the United States (Ellis et al., 2015), as well as in Germany (Kranz, Busch, & Niepel, 2018), Israel (Shenkman, 2012), Italy (Baiocco & Laghi, 2013), Mexico (Salinas-Quiroz, Costa, & Lozano-Verduzco, 2020), and Portugal (Costa & Bidell, 2017). Likely as a result, numerous studies using multiple methods (i.e., surveys, interviews) and large or nationally representative samples have indicated that fewer LGBTQ+ people, relative to cisgender heterosexual people, desire and intend to become parents, and that there are gaps between desires and intentions to parent among LGBTQ+ people (Gates, 2015; Riskind et al., 2013; Riskind & Tornello, 2017).

Within-Group Variation in Future Parenthood Based on LGBTQ+ Identity

Researchers have also investigated factors that might underlie differences in desires and intentions for parenthood among LGBTQ+ versus cisgender heterosexual people. These include reasons related to idealization of parenthood, partner status and "reproductive potential" (i.e., describes couples whose reproductive systems are "conception-ready" and include different sex cells; Tornello & Bos, 2017; Tornello, Riskind, & Babić, 2019), financial considerations, education and career, stigma and discrimination, and social and legal supports (or lack thereof; Ellis et al., 2015; Gato et al., 2017; Simon, Tornello, Farr, & Bos, 2018).

While experiences of stigma, discrimination, and social/legal supports are likely unique to couples comprised of LGBTQ+ members as compared to different-gender heterosexual couples, there are still some similarities based on aspects of fertility (Brown, Rogers, Entwistle, & Bhattacharya, 2016). For example, subfertility[2] can affect individuals regardless of identity, and is stigmatized due to the prevalence of pronatalist ideology (i.e., a belief system that heavily emphasizes child-bearing, parenthood, and the need to reproduce; Kukla, 2019). Further, while some research suggests that bisexual people's desires and intentions about future parenthood are largely based on their partner's assigned sex (i.e., desires and intentions match either the patterns of lesbian/gay or heterosexual individuals, dependent on whether bisexual individuals have a partner of the same or different sex; Riskind & Tornello, 2017), bisexual people still experience the stigma and discrimination that other LGTQ+ people face in family planning settings (Yager, Brennan, Steele, Epstein, & Ross, 2010). Thus, even if bisexual people can have a child through sexual intercourse with a different-gender partner, they may still face stigma (e.g., erasure of bisexual identity due to assumed heterosexuality; Tasker & Delvoye, 2015). It is likely then that bisexual people also experience tension between their sexual identity and future parenthood, which in turn may lead to ambiguous loss in the context of future parenthood. Thus, we queried whether ambiguous loss operates among and for LGBTQ+ people as they envision the possibility of childlessness and future parenthood, particularly in the contexts of sexual stigma, positive LGBTQ+ identity, and idealization of parenthood.

Current Study: The Need for a Conceptual Future Parent Grief (CFPG) Scale

No quantitative measure exists that focuses on LGBTQ+ identity and future parenthood from theoretical frameworks of minority stress and ambiguous loss, despite disparate qualitative literature pointing to the existence of the phenomenon (dickey et al., 2016; Frost & LeBlanc, 2014; McGuire et al., 2016). The development of a scale related to conceptual future parent grief (CFPG) may allow for a more authentic and comprehensive assessment of the experiences of how LGBTQ+ people without children consider future parenthood, and whether CFPG might relate (and in what ways) to mental health, experiences of minority stress, and LGBTQ+ identity.

To develop and evaluate the CFPG scale, we used similar steps to other researchers who have pursued scale development with LGBTQ+ adults (e.g., Gato et al., 2017; Riggle et al., 2014; Testa, Habarth, Peta, Balsam, & Bockting, 2015). In Study 1, we conducted exploratory factor analysis (EFA) to identify a factor structure that would provide a good fit to the data and reduce the number of items. Next, in Study 2, we conducted confirmatory factor analysis (CFA) to test the resulting EFA factor structure. We estimated internal consistencies and provided evidence of convergent (and divergent) validity by evaluating correlations with established measures of LGBTQ+ identity authenticity, depressive symptoms, stigma, and idealization of parenthood. Regarding construct validity, we expected CFPG to be associated with LGBTQ+ identity authenticity, stigma, and psychological distress, as has been demonstrated in previous studies of scale development among LGBTQ+ samples (Riggle et al., 2014; Testa et al., 2015).

Method

Procedure

Participants were recruited primarily through Amazon's Mechanical Turk (MTurk) with other participants coming from online snowball sampling and the psychology student pool at a large university in the Southern United States. To be a part of the study, participants needed to be age 18 or older, identify as LGBTQ+, and not be a parent (participants in Study 1 were also ineligible for Study 2). Following consent, participants completed an online survey (via Qualtrics survey software) asking about perceptions of future parenthood among a number of other measures. Both Study 1 and Study 2 focused on how LGBTQ+ people envision future parenthood, but Study 2 included additional measures (e.g., generalized anxiety) that were not present in Study 1 (see https://osf.io/epvu8/?view_only=7f0e43a0ed864363b78e6cb2b310811c for a full list of measures in both studies). Participants recruited via MTurk received $1 for completing Study 1 and $3 for Study 2 (the second study was substantially longer, thus participants were compensated accordingly), while the online snowball sample did not receive compensation. Participants recruited via the psychology student pool received course credit for participation. Participants received the same convergent and divergent validity measures in both studies. The project was approved by the University of Kentucky Institutional Review Board.

Participants

Study 1. Participants were LGBTQ+ individuals who were not parents ($N = 176$; $n = 146$ MTurk, $n = 30$ subject pool). The majority were cisgender women ($n = 88$; 50.00%), followed by cisgender men ($n = 33$; 18.75%), genderqueer people ($n = 14$; 7.96%), gender nonconforming/nonbinary people ($n = 13$; 7.39%), transgender women ($n = 12$; 6.82%), and finally, trans-

[2] Subfertility can be a more inclusive term than infertility given the connotation of infertility as permanent. However, *infertility* (and *subfertility*) as a medical term is defined by being unable to have a child through sexual intercourse for at least 1 year. Thus, subfertility acknowledges that fertility is a fluctuating biological characteristic, rather than fixed (Brown et al., 2016).

gender men (n = 11; 6.25%). Participants most commonly identified their sexual identity as bisexual (n = 71; 40.34%), followed by lesbian (n = 37; 8.55%), gay (n = 26; 14.77%), pansexual (n = 17; 9.66%), asexual (n = 12; 6.82%), queer (n = 5; 2.84%), and heterosexual (n = 5; 2.84%; all noncisgender). The modal relationship status was single (n = 68; 38.64%), followed by committed relationship (n = 40; 22.73%), dating (n = 21; 4.85%), legally recognized marriage (n = 11; 6.25%), engaged (n = 6; 3.41%), or other (e.g., ceremony only marriage; n = 7; 3.98%). Most participants were White/Caucasian (n = 113; 64.21%), followed by African American (n = 17; 9.66%), Multiracial (n = 7; 3.98%), Asian/Pacific Islander (n = 6; 3.41%), Hispanic/Latino/Latinx (n = 6; 3.41%), and finally, Native American (n = 2; 1.14%); see Table 1 for demographics.

Study 2. Participants were LGBTQ+ individuals who were not parents and did not participate in Study 1 (N = 433; n = 394 MTurk, n = 26 online volunteer, n = 13 subject pool). The majority were cisgender women (n = 201; 46.42%), followed by cisgender men (n = 122; 28.18%), gender nonconforming/nonbinary people (n = 59; 13.63%), transgender men (n = 26; 6.00%), genderqueer people (n = 12; 2.77%), transgender women (n = 7; 1.62%), or an identity not listed above (e.g., genderfluid; n = 6; 1.39%). Bisexual-identified (n = 176; 40.65%) individuals were the most represented, followed by gay (n = 80; 18.48%), lesbian (n = 67; 15.47%), pansexual (n = 44; 10.16%), asexual (n = 35; 8.08%), queer (n = 28; 6.47%), an identity not listed above (e.g., demisexual; n = 3; 0.69%), and heterosexual (n = 1; 0.23%; a transgender man). The modal relationship status was single (n = 167; 38.57%), followed by committed relationship (n = 120; 27.71%), legally recognized marriage (n = 56; 12.93%), dating (n = 30; 6.93%), engaged (n = 20; 4.62%), and other relationship statuses (e.g., ceremony only marriage; n = 14; 3.23%). Most of the participants were White/Caucasian (n = 308; 71.11%), followed by African American (n = 35; 8.08%), Hispanic/Latino/Latinx (n = 24; 6.47%), multiracial (n = 18; 4.16%), Asian/Pacific Islander (n = 15; 3.46%), and finally, Native American (n = 4; .92%; see Table 2 for demographics).[3]

Measures

Demographic factors. Participants reported their age, income, education, gender, sexual, and racial–ethnic identities, sex assigned at birth, and relationship status.

Conceptual future parent grief. Participants received the CFPG scale for LGBTQ+ people to assess the presence of unresolved grief related to the cultural script of a future parent identity. CFPG items are rated from 1 (*strongly disagree*) to 6 (*strongly agree*) with higher average scores indicating greater conceptual grief. Participants received different numbers of items; those in Study 2 received only the items used for CFA (See Table 3). Instructions were the following:

> Many people want to become parents. However, some sexual or gender minority individuals experience negative feelings because they may be unable to become a parent for any number of reasons. Please read through the statements below and select the option that you believe best reflects your feelings about future parenthood. When I think about the possibility of not becoming a parent I experience feelings where. . . .

Item generation. There were 50 initial items developed by the first author that were drawn from related fields like reproductive health and fertility (e.g., LGBTQ+ experiences with subfertility such as hormone replacement therapy; Ellis et al., 2015), involuntary childlessness (e.g., the impact of pronatalist ideologies; Brown et al., 2016; Kukla, 2019), LGBTQ+ pathways/transitions to parenthood (e.g., social implications of becoming a parent in the queer community; Gato et al., 2017) and existing measures (e.g., Infertility Self-Efficacy Scale, Cousineau et al., 2006; Fertility Problem Inventory, Moura-Ramos, Gameiro, Canavarro, & Soares, 2012; attitudes toward same-sex parenting, Gato, Freitas, & Fontaine, 2013). Items were also piloted and screened by undergraduate and graduate researchers representing diverse perspectives and identities (e.g., multiracial, white, Latinx, queer, heterosexual, cisgender female and male, and gender nonbinary individuals).

Previous literature also guided our decision to exclude potential items that may have overlapped substantially with other published measures. Thus, we developed statements that would relate to, but not overlap with the unique experiences of infertility as connected to the distinct experiences of LGBTQ+ people. This allowed us to develop a more precise scale targeting one slice of a broader construct of experiences related to perceived involuntary childlessness. As an additional step in item generation, in conjunction with the iterative process of developing items, the first author engaged in informal discussions with individuals familiar with family planning settings, mental health practitioners, and retired health care workers (i.e., nurses). Following item generation, we solicited feedback on items from participants in Study 1 to ensure robust item development. All 50 of the original items in the preliminary survey can be found at https://osf.io/epvu8/?view_only=7f0e43a0ed864363b78e6cb2b310811c.

Depressive symptoms. Participants responded to the Center for Epidemiologic Studies Depression scale (CES-D; Radloff, 1977), which includes 20 statements about the frequency of depressive symptoms in the last 7 days (e.g., "I was bothered by things that usually don't bother me") on a scale from 1 (*rarely or none of the time, less than 1 day*) to 4 (*most or all of the time, 5–7 days*). Higher average scores indicate greater depressive symptoms. The CES-D showed excellent reliability in both Study 1 (α = .93) and Study 2 (α = .94).

Positive LGBTQ+ identity. Participants received an adapted version of the LGB Positive Identity Measure (LGB-PIM; Riggle et al., 2014) to assess well-being related to one's LGBTQ+ identity with subscales that assess Self-Awareness, Authenticity (e.g., "I have a sense of inner peace about my LGBT identity"), Community, Intimacy, and Social Justice. Here, we used the LGB-PIM Authenticity subscale, given previous operationalization of this construct as LGBTQ+ positive identity (Vaughan & Rodriguez, 2015), and its conceptual orientation toward an internal sense of self in contrast to external experiences (i.e., behaviors, relationships, interests) assessed in other subscales (i.e., Community, Intimacy, Social Justice). Items are rated from 1 (*strongly disagree*) to 7 (*strongly agree*); higher average scores indicate

[3] Research has found that over a more than 2-year period, the demographic characteristics of Amazon Mechanical Turk workers is relatively stable and unrelated to a worker's willingness and interest in participating in various surveys (Difallah, Filatova, & Ipeirotis, 2018). Thus, we did not test whether there were demographic differences between our two samples given that the majority of participants were recruited through Amazon's Mechanical Turk.

Table 1
Participant Demographic Characteristics in Study 1

	Cisgender women (n = 88)			Cisgender men (n = 33)			TGNC (n = 50)			Total (N = 176)		
Variable	L/G (n = 32)	B/P (n = 46)	All (n = 88)	G (n = 16)	B/P (n = 14)	All (n = 33)	L/G (n = 12)	B/P (n = 28)	All (n = 50)	L/G (n = 63)	B/P (n = 88)	All (n = 171)
Age (years), *M* (*SD*)	30.93 (8.92)	25.81 (7.95)	29.32 (9.86)	31.80 (13.89)	26.38 (10.26)	29.10 (12.03)	28.42 (5.79)	30.75 (6.65)	29.47 (6.96)	31.00 (9.88)	27.64 (8.22)	29.46 (9.63)
Race (% White)	79.3%	64.7%	71.2%	86.7%	69.2%	80.0%	83.3%	75.0%	80.0%	79.7%	69.0%	74.3%
Income (in $K)	43.79 (39.89)	52.50 (87.22)	46.07 (64.00)	65.60 (52.23)	98.00 (113.18)	76.67 (84.40)	58.23 (65.83)	62.79 (88.41)	71.02 (97.68)	52.72 (48.35)	64.65 (93.04)	59.50 (79.60)
Education (% bachelor's)	37.9%	32.4%	37.0%	53.3%	53.9%	53.3%	75.0%	33.3%	51.1%	50.9%	36.7%	44.8%
Partner status (% single)	31.0%	41.2%	38.4%	40.0%	53.9%	46.7%	50%	50%	53.3%	37.3%	46.5%	44.4%

Note. TGNC = transgender and gender nonconforming; L = lesbian; G = gay; B = bisexual; P = pansexual. Cell sizes do not sum equally due to missing data or differential responses about sexual identity (e.g., asexual individuals are only included in "total" or "all" cells).

Table 2
Participant Demographic Characteristics in Study 2

	Cisgender women (n = 201)			Cisgender men (n = 122)			TGNC (n = 110)			Total (N = 433)		
Variable	L/G (n = 61)	B/P (n = 114)	All (n = 201)	G (n = 63)	B/P (n = 51)	All (n = 122)	L/G (n = 21)	B/P (n = 52)	All (n = 104)	L/G (n = 145)	B/P (n = 218)	All (n = 427)
Age (years) *M* (*SD*)	32.13 (9.21)	27.24 (7.14)	28.75 (7.95)	35.51 (11.03)	30.68 (10.16)	33.16 (10.68)	27.50 (6.71)	28.30 (6.37)	27.90 (6.10)	33.12 (10.24)	28.30 (7.89)	29.85 (8.80)
Race (% White)	78.6%	73.2%	73.9%	78.7%	76%	78.2%	70.2%	80%	75.8%	79%	73.1%	75.7%
Income (in $K)	69.44 (63.68)	57.05 (45.26)	60.67 (50.53)	67.82 (76.16)	46.49 (46.66)	57.76 (63.70)	41.98 (27.60)	43.61 (40.81)	40.58 (34.43)	64.33 (66.20)	51.38 (44.64)	55.00 (52.05)
Education (% bachelor's)	57.1%	50.9%	52.1%	63.9%	38%	52.1%	35%	44.7%	41.1%	57.3%	45.7%	49.6%
Partner status (% single)	39.3%	32.4%	37.2%	42%	37.7%	42.0%	44.7%	50%	48.4%	39.9%	37.0%	41.0%

Note. TGNC = transgender and gender nonconforming; L = lesbian; G = gay; B = bisexual; P = pansexual. Cell sizes do not all sum equally due to missing data or differential responses about sexual identity (e.g., asexual individuals are only included in "total" or "all" cells).

Table 3
Means, Standard Deviations, and Factor Loadings for the Final Conceptual Future Parent Grief (CFPG) Scale

Items[a]	Exploratory factor analysis coefficient	Confirmatory factor analysis factor loading[b]
I am damaged	.73	.77
I get upset[c]	.71	.76
I've lost something[c]	.83	.80
I wish I could be normal so I could have children	.73	.78
There is a void inside of me	.84	.82
I blame myself	.81	.84
Parenthood is no longer achievable	.68	.64
I grieve over my inability to become a parent	.82	.83
I'm unsure how to cope with these feelings	.83	.83
I get angry at myself	.85	.86
An opportunity was taken from me	.77	.84
I can't help comparing myself with my straight friends who have children[c]	.70	.73

Note. Items are on a scale of 1 to 6 where 1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly disagree*, 4 = *slightly agree*, 5 = *agree*, 6 = *strongly agree*.
[a] Items were presented in randomized order to participants. [b] Standardized coefficients. [c] Dropped from final nine-item CFPG scale.

greater positive identity. We made one modification in the instructions to ensure inclusive language of transgender identities. This measure demonstrated excellent reliability (α = .96, .98) in Study 1 and 2, respectively.

Parenthood idealization. To assess the importance of parenthood, participants responded to the eight-item Idealization of Parenthood Scale (Eibach & Mock, 2011) on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher average scores indicating greater idealization. Example items include, "It is not difficult for a childless adult to live a truly fulfilling life" (reverse coded) and "Nonparents are more likely to be depressed than parents." This measure showed acceptable reliability in both Study 1 (α = .70) and Study 2 (α = .77).

Sexual stigma. To assess stigma experiences, participants completed a 12-item sexual stigma measure on a 1 (*never*) to 4 (*many times*) scale (Logie & Earnshaw, 2015). There are two subscales: Perceived (e.g., "How often have you heard that lesbian, queer, and bisexual women are not normal?") and Enacted Stigma (e.g., "How often have you been made fun of or called names for being lesbian, queer, or bisexual?"). Original wording referencing "lesbian, queer, and bisexual women" was modified to be more inclusive of LGBTQ+ identities (e.g., "How often have you been harassed by the police for being lesbian, queer, or bisexual?" was changed to "How often have you been harassed by the police for being an LGBTQ+ person?"). Higher total average scores (across subscales) indicate greater frequency of sexual stigma experiences. The measure showed good reliability in both Study 1 (α = .86) and Study 2 (α = .80).

Results

Study 1

Analytic plan. Study 1 analyses were conducted using R (R Core Team, 2019) in conjunction with the packages *psych* (Revelle, 2018), *GPArotation* (Bernaards & Jennrich, 2015), and *dplyr* (Wickham, François, Henry, & Müller, 2018). Preliminary analyses to investigate skewness and kurtosis of the initial 50 items was used to assess normality and to remove items as a way to refine the measure (Raykov & Marcoulides, 2011). Follow-up interpretations of items were also used to remove items (e.g., poorly worded items; Kline, 2015). An EFA was conducted using maximum likelihood estimation with an oblique oblimin rotation (Costello & Osborne, 2005), which also allowed us to account for missing data (less than 10% for all measures). Following, eigenvalues greater than 1 (per the Kaiser–Guttman rule of thumb; Kline, 2015) were considered as possible factor solutions. Factor loadings were used to determine whether items should be removed using an initial cutoff of .60 (Costello & Osborne, 2005). General rule-of-thumb cutoffs were used to examine adequate fit of our model using maximum likelihood estimation (i.e., comparative fit index [CFI]/Tucker–Lewis index [TLI] > .95, root mean square error of approximation [RMSEA] < .08, and standardized root mean square residual [SRMR] < .08; Hu & Bentler, 1999; Kline, 2015). After the initial EFA and removing items with heavy kurtosis or skew, items were dropped if there were too few to constitute a full factor (e.g., factor comprised of two items).

Exploratory factor analysis. Based on the initial Kaiser–Guttman rule (Kline, 2015) a seven-factor solution was suggested that would account for 70.62% of the variance. However, after removing items with structure coefficients lower than .60, a one-factor solution accounting for 47.49% of the variance was left. We found that a 12-item one-factor solution had adequate to mediocre fit (TLI = .93, RMSEA = .10, 90% [.08, .12], SRMR = .04) because it met some, but not all, rule-of-thumb cutoffs. However, a nine-item[4] one-factor solution represented better fit as compared to a 12-item one-factor solution (TLI = .95, RMSEA = .10, 90% [.07, .13], SRMR = .04) because it met all of the rule-of-thumb cutoffs specified above.

[4] We report both the 12- and nine-item scales. While the initial EFA suggested a 12-item solution, the CFA model respecification resulted in a nine-item solution. Thus, we present both here.

Descriptive information, internal reliability, and validity. On average, participants described moderate CFPG, depressive symptoms, and stigma. They also reported relatively high parenthood idealization and LGBTQ+ identity authenticity (see Table 4). Moderate CFPG indicated that participants experienced CFPG when considering the possibility of not becoming a parent, yet these experiences were not severe in nature (e.g., passing thoughts of negativity rather than continued preoccupation). The nine-item final CFPG scale showed excellent reliability, $\alpha = .947$. The CFPG scale showed convergent validity with the CES-D, $r(166) = .29$, $p < .001$, as well as with the Idealization of Parenthood measure, $r(160) = .53$, $p < .001$, and the sexual stigma measure, $r(165) = .36$, $p < .001$. That is, greater conceptual grief surrounding future parenthood was associated with greater depressive symptoms, idealization of parenthood, and sexual stigma. Further, the CFPG scale also showed divergent validity with the LGB-PIM Authenticity subscale, $r(160) = -.20$, $p = .010$, such that greater conceptual grief surrounding future parenthood was associated with lower levels of authentic LGBTQ+ identity. Lastly, there were no group differences by gender ($p = .762$) or sexual identity ($p = .962$) for the CFPG scale.[5]

Study 2

Analytic plan. All CFA analyses were conducted using R (R Core Team, 2019) with the packages *lavaan* (Rosseel et al., 2018) and *psych* (Revelle, 2018). General rule-of-thumb cutoff values for $\chi^2/df < 5$ (Finch, Bolin, & Kelley, 2014; Kline, 2015), CFI > .090 (Hu & Bentler, 1999), RMSEA < .08 (Raykov & Marcoulides, 2011), and SRMR < .08 (Kline, 2015) were used as guidelines for assessment of model fit (Kline, 2015). After investigation of multivariate normality via the mardia test (Finch et al., 2014), which indicated that data were not multivariate normal, χ^2 corrections were made, specifically using the Satorra–Bentler correction (Savalei, 2018). In terms of model respecification, we investigated comparisons of the Akaike information criteria, in which lower values indicate better model fit (Arbuckle, 2008). We also dropped items that could substantially change model fit, given justification to do so (e.g., kurtosis greater than 10 times the standard error of the item; Raykov & Marcoulides, 2011). For any given measure, there was 5% or less of missing data present.

Confirmatory factor analysis. The initial mardia test suggested the data were not multivariate normal. Thus, Satorra–Bentler χ^2 corrections were made (Savalei, 2018). After the χ^2 correction, Satorra–Bentler χ^2 (54, 430) = 235.13, $p < .001$, two of three robust fit indices (CFI = .95, SRMR = .04) indicated that the model showed acceptable fit. However, the RMSEA was slightly higher than the desired cut off, RMSEA = .09, 90% confidence interval [.08, .10]. After investigating possible model respecifications, we removed Items 10, 12, and 45 as they were the most kurtotic in nature (i.e., greater than 10 times the standard error of the item). Following respecification, the Satorra–Bentler $\chi^2(27, 430) = 79.81$, $p < .001$, and all three robust fit indices indicated that the respecified model showed acceptable fit (CFI = .98, SRMR = .03, RMSEA = .07, 90% confidence interval [.06, .08]) and met the cutoff criteria. Further, the Akaike information criteria index dropped from 15,429.98 to 11,447.57 suggesting substantially better model fit in our respecified model and was more parsimonious than our initial model (Kline, 2015). Thus, the nine-item, respecified, model was supported.

Descriptive information, internal reliability, and validity. Participants, on average, reported moderate CFPG, depressive symptoms, stigma, and parenthood idealization. They generally described relatively high LGBTQ+ identity authenticity (see Table 5). Again, here, moderate CFPG indicated that participants do experience aspects of CFPG but not at levels that would likely reflect severe negativity in considering (future) parenthood. The nine-item CFPG scale showed excellent reliability, $\alpha = .94$. In addition, the CFPG scale again showed convergent validity with the CES-D, $r(422) = .38$, $p < .001$, the Idealization of Parenthood measure, $r(424) = .53$, $p < .001$, and the sexual stigma measure, $r(422) = .28$, $p < .001$. That is, higher CFPG scores were associated with greater depressive symptoms, greater idealization of parenthood, and more frequent experiences of sexual stigma. Further, the CFPG scale again showed divergent validity with the LGB-PIM Authenticity subscale, $r(420) = -.31$, $p < .001$; higher CFPG scores were associated with lower authentic LGBTQ+ identity. Similar to Study 1, no group differences emerged by gender ($p = .242$) nor sexual identity ($p = .828$) in CFPG scores.

Discussion

This scale development study, to our knowledge, is the first quantitative assessment and demonstration of the phenomenon of CFPG among LGBTQ+ adults. Building from qualitative work applying ambiguous loss and minority stress theories (Boss, 2016; Frost & LeBlanc, 2014; Meyer, 2015), and following recommendations to strongly integrate theory into LGBTQ+ family research (Farr et al., 2017; van Eeden-Moorefield et al., 2018), we sought to develop a theoretically driven CFPG scale. Via two studies using EFA and CFA, respectively, we found evidence for ambiguous loss experiences among LGBTQ+ people in envisioning future parenthood. In Study 1, LGBTQ+ participants responded to 50 initial CFPG items (developed from existing work; e.g., Cousineau et al., 2006; Gato et al., 2013; Moura-Ramos et al., 2012). While both 12- and nine-item one-factor solutions showed good model fit from the EFA in Study 1, ultimately the nine-item model demonstrated a superior fit and was used in Study 2. As predicted, the CFPG scale also demonstrated convergent and divergent validity in both studies (Riggle et al., 2014; Testa et al., 2015). Greater CFPG was linked with lower LGBTQ+ identity authenticity, and with greater parenthood idealization, depressive symptoms, and stigma. Given strong internal consistency of the CFPG scale, our results indicate that LGBTQ+ adults may experience grief when imagining their ideal future (parent) self. The findings have implications for practitioners and researchers about health and well-being among LGBTQ+ individuals, including the possible protective role of positive LGBTQ+ identity.

[5] In Study 1 and 2, no group differences were uncovered by sexual and gender identities using via analysis of variance and multivariate analysis of variance. Three groups were considered for sexual identity (gay/lesbian, bisexual/pansexual, additional identities) as well as for gender identity (cisgender women, transgender and gender nonconforming individuals, cisgender men). Independent samples *t* tests that included just gay/lesbian, bisexual/pansexual, and cisgender/transgender and gender nonconforming individuals also did not show significant differences.

Table 4
Means and Standard Deviations of Variables of Interest in Study 1

	Cisgender women (n = 88)			Cisgender men (n = 33)			TGNC (n = 50)			Total (N = 176)		
Variable	L/G (n = 32)	B/P (n = 46)	All (n = 88)	G (n = 16)	B/P (n = 14)	All (n = 33)	L/G (n = 12)	B/P (n = 28)	All (n = 50)	L/G (n = 63)	B/P (n = 88)	All (n = 171)
CFPG Scale	2.35 (1.45)	2.41 (1.22)	2.40 (.14)	2.63 (1.27)	2.23 (1.10)	2.47 (1.21)	2.37 (1.15)	2.70 (1.26)	2.57 (1.22)	2.46 (1.37)	2.47 (1.21)	2.46 (1.25)
CES-D	2.04 (.77)	2.19 (.71)	2.12 (.73)	1.95 (.54)	1.85 (.55)	1.92 (.52)	1.82 (.76)	2.34 (.72)	2.22 (.71)	1.94 (.70)	2.18 (.71)	2.09 (.69)
LGB-PIM Authenticity	5.46 (1.53)	5.54 (1.02)	5.52 (1.22)	5.49 (.92)	5.14 (1.15)	5.20 (1.20)	5.77 (1.02)	5.28 (1.33)	5.45 (1.20)	5.49 (1.36)	5.39 (1.14)	5.42 (1.24)
Parenthood Idealization	3.20 (.37)	3.28 (.37)	3.23 (.37)	3.34 (.38)	3.33 (.28)	3.33 (.32)	3.37 (.41)	3.44 (.33)	3.41 (.34)	3.27 (.37)	3.34 (.35)	3.30 (.36)
Sexual Stigma	2.21 (.52)	1.95 (.67)	2.02 (.60)	2.36 (.55)	1.95 (.59)	2.15 (.60)	2.31 (.74)	2.38 (.72)	2.36 (.67)	2.25 (.58)	2.09 (.70)	2.14 (.64)

Note. TGNC = transgender and gender nonconforming; L = lesbian; G = gay; B = bisexual; P = pansexual; CFPG = conceptual future parent grief; CES-D = Center for Epidemiologic Studies Depression Scale; PIM = Positive Identity Measure. Cell sizes do not all sum equally due to missing data or differential responses about sexual identity (e.g., asexual individuals are only included in "total" or "all" cells).

Table 5
Means and Standard Deviations of Variables of Interest in Study 2

	Cisgender women (n = 201)			Cisgender men (n = 122)			TGNC (n = 110)			Total (N = 433)		
Variable	L/G (n = 61)	B/P (n = 114)	All (n = 201)	G (n = 63)	B/P (n = 51)	All (n = 122)	L/G (n = 21)	B/P (n = 52)	All (n = 104)	L/G (n = 145)	B/P (n = 218)	All (n = 427)
CFPG Scale	2.22 (1.20)	2.20 (1.21)	2.22 (1.24)	2.20 (1.15)	2.47 (1.39)	2.30 (1.25)	2.61 (1.53)	2.55 (1.37)	2.48 (1.34)	2.26 (1.22)	2.34 (1.29)	2.30 (1.27)
CES-D	1.91 (.67)	2.02 (.68)	2.00 (.68)	1.85 (.60)	2.04 (.76)	1.96 (.69)	2.32 (.43)	2.44 (.63)	2.35 (.59)	1.94 (.63)	2.13 (.70)	2.07 (.68)
LGB-PIM	5.91 (1.02)	5.58 (1.10)	5.64 (1.11)	5.71 (1.37)	5.46 (.73)	5.56 (1.24)	5.04 (1.41)	5.34 (1.06)	5.35 (1.14)	5.70 (1.26)	5.51 (1.07)	5.55 (1.16)
Parenthood Idealization	2.15 (.57)	2.10 (.63)	2.10 (.61)	2.29 (.57)	2.50 (.73)	2.39 (.64)	2.16 (.69)	2.12 (.67)	2.12 (.65)	2.21 (.60)	2.20 (.68)	2.18 (.64)
Sexual Stigma	1.93 (.50)	1.77 (.45)	1.81 (.46)	1.92 (.46)	1.83 (.41)	1.87 (.43)	2.04 (.46)	2.11 (.50)	2.07 (.51)	1.95 (.49)	1.86 (.47)	1.90 (.48)

Note. TGNC = transgender and gender nonconforming; L = lesbian; G = gay; B = bisexual; P = pansexual; CFPG = conceptual future parent grief; CES-D = Center for Epidemiologic Studies Depression Scale; PIM = Positive Identity Measure. Cell sizes do not all sum equally due to missing data or differential responses about sexual identity (e.g., asexual individuals are only included in "total" or "all" cells).

Our findings support that ambiguous loss, in the context of considerations of future (involuntary) childlessness, can be quantified, as well as using an individual (i.e., as related to envisioning ideal future selves; Dziengel, 2015) versus a relational orientation (e.g., grieving the loss of a loved one who is psychologically or physically absent, but not both). Specifically, our findings highlight that LGBTQ+ adults can experience ambiguous loss as they imagine the possibility of (involuntary) childlessness. Previous studies have qualitatively demonstrated ambiguous loss among LGBTQ+ people (McGuire et al., 2016), but not as related to future parenthood nor quantitatively. Our results indicate that, among a childfree sample diverse in gender and sexual identity, many endorsed experiences of grief in imagining future parenthood. It is also important to note that there were no significant differences by sexual or gender identity in CFPG scores. Research has found variation in parenting desires and intentions based on gender and sexual identity (e.g., differences between LG and bisexual people) so reporting that there are no significant differences is noteworthy (Riskind & Tornello, 2017). These findings may suggest that, while desires and intentions themselves vary based on LGBTQ+ identity, the presence of CFPG exists, to some degree, among all groups—this, in turn, which could indicate that CFPG is a ubiquitous (albeit low-level) nonevent stressor.

Our results suggest that LGBTQ+ individuals commonly face a challenging process of negotiating and disentangling societal master narratives about parenthood and their integration with one's own LGBTQ+ identity (Heiden Rootes, 2013). Qualitative research has showcased the tensions that some LGBTQ+ individuals feel between dynamics of "always wanting to be a parent" while growing up and then questioning whether and how parenthood might be possible in the context of one's LGBTQ+ identity after coming out (Schacher, Auerbach, & Silverstein, 2005). As one reconciles hetero- and cisnormative cultural scripts about parenthood with their own LGBTQ+ identity, it may be that the process of confronting cultural, structural, interpersonal, and internal barriers (e.g., via stigma, nonevent stress, and broader minority stress) contributes to ambiguous loss among LGBTQ+ adults in imagining future selves and possible parenthood (Dziengel, 2015; Frost & LeBlanc, 2014). Thus, we again call attention to the notion that while these experiences may occur among some LGBTQ+ people, these feelings are likely a result of stigmatization from outside sources (e.g., stereotypes that LGBTQ+ people are unable to raise healthy children; Heiden Rootes, 2013) rather than being inherent to LGBTQ+ identity.

Importantly, we uncovered these results about CFPG among samples diverse in gender and sexual identities, including significant associations between CFPG and several psychological constructs. This indicates evidence across two studies that the scale fit the experiences of LGBTQ+ people who varied in all variables of interest (i.e., CFPG, depressive symptoms, parenthood idealization, stigma, identity authenticity). Given that links emerged among greater CFPG, depressive symptoms, idealization of parenthood, and stigma, these results could reflect the role of nonevent stress that LGBTQ+ adults might experience when they desire future parenthood but perceive barriers (resulting from stigma) to do so at all or in the way that would be "ideal" (often dictated by heteronormative narratives about families; Frost & LeBlanc, 2014). Indeed, it is possible that feelings of loss could contribute to enduring health disparities for LGBTQ+ individuals (Frost & LeBlanc, 2014; Meyer, 2015). In contrast, lower CFPG was associated with greater LGBTQ+ identity authenticity. As LGBTQ+ identity authenticity and psychological well-being have been found to share significant associations in previous research (Riggle et al., 2014), it is possible that identity authenticity serves a buffer from CFPG.

What could be the mechanism by which positive LGBTQ+ identity serves a protective function for individuals facing ambiguous loss related to future parenthood? Previous qualitative work has indicated that LGBTQ+ adults who do not yet have children describe some aspects of (future) parenthood in ways that reinforce heteronormative notions (e.g., being in a committed couple relationship), but others that challenge or expand such views (e.g., uncoupling gender and parenting roles, nonprocreative parenthood; Schacher et al., 2005). The role of positive LGBTQ+ identity might help to explain the coexistence and possible reconciliation of conflicting narratives about future parenthood among LGBTQ+ people. Having a positive sense of self as an LGBTQ+ person likely facilitates challenging or expanding societal notions of family in considering one's own life path, as well as the process of deciphering where one fits or defies broader societal scripts. Thus, LGBTQ+ identity authenticity may act as a buffer between ambiguous loss inherent to considering future parenthood in the context of societal master narratives that exclude LGBTQ+ from parenting (Vaccaro, 2010) and the negative health consequences that could be associated with experiences of ambiguous loss (Boss, Caron, Horbal, & Mortimer, 1990).

Limitations, Future Research Directions, and Implications for Practice

Our results indicate that ambiguous loss, in the context of thoughts about future parenthood, can be assessed quantitatively. Future research is necessary, however, to continue to evaluate this possibility, as well as to replicate and expand upon the CFPG scale among LGBTQ+ adults. This study, despite strengths, has notable limitations. To begin, a greater degree of racial-ethnic diversity is needed (and in LGBTQ+ research broadly; van Eeden-Moorefield et al., 2018). In addition, the samples were recruited predominantly via MTurk. Thus, recruiting a larger proportion of participants from a number of different sources is an important next step.

One additional strength and limitation regarding our sample is that our qualifiers were only that participants be LGBTQ+ identified adults who were not yet parents. Unlike many other studies about future parenthood that focus on LGBTQ+ people who intend to become parents (e.g., Simon et al., 2018), our study includes LGBTQ+ individuals who report a broad range of desires and intentions to become parents. Thus, our work may generalize to the wider LGBTQ+ population, beyond those who report high parenting desires and intentions. Future research should consider the utility of this measure in family planning settings, or among youth, in which boundary ambiguity surrounding the transition to (or envisioning) future parenthood may be higher than found here (Heiden Rootes, 2013;

Tornello et al., 2019). Finally, the language used in the prompt for the CFPG measure may unduly bias our results, such that individuals could have taken a pessimistic approach to the prompt rather than reporting on their daily experiences. Future research should investigate the continuum of possible responses, rather than specifically negative feelings, as they relate to future parenthood and involuntary childlessness. Broadly, however, our work provides a quantified assessment of the experiences of LGBTQ+ adults in the United States at the intersection of perceptions of future parenthood and ambiguous loss theory.

Although ambiguous loss theory has rarely been used in a quantitative framework, our findings suggest promise for this approach in predicting outcomes that are not yet understood in LGBTQ+ research. Ambiguous loss theory focuses on subclinical mental health concerns such as developing grief or depression (Boss, 2018)—for some LGBTQ+ people who are still struggling with their identity, these experiences of ambiguous loss may be one small piece of the larger puzzle that we can target and help them with to develop a more positive LGBTQ+ identity. Even in the absence of explicit discrimination, sometimes LGBTQ+ individuals face negativity from structural stigma (Herek, 2016). Given the belief that one cannot become a parent could be internalized, LGBTQ+ individuals could be supported to "unpack" these notions to develop positive identities. Counselors treating individuals who experience ambiguous loss (including LGBTQ+ people) are encouraged to promote dialectical thinking, considering experiences as both/and instead of either/or (Boss, 2013). This allows for clients to become comfortable in tolerating the ambivalence characterizing ambiguous loss (Boss, 2013). This therapeutic approach, in conjunction with a focus on cultivating positive LGBTQ+ identity, may hold utility for strengths-based clinical work with LGBTQ+ people who do not yet have children.

Conclusion

In sum, our results support the existence and quantitative assessment of the phenomenon of conceptual future parenthood grief (CFPG) among LGBTQ+ adults who do not yet have children. Notably, greater stigma, depressive symptoms, and parenthood idealization were all connected to greater CFPG, but greater LGBTQ+ identity authenticity was linked with lower CFPG. Thus, our findings may suggest that for LGBTQ+ adults, having expanded and culturally acceptable options to become a parent could be linked with also experiencing greater identity authenticity and psychological well-being (Drescher, 2014). In this way, addressing ambiguous loss related to future parenthood in future research and clinical practice could advance efforts to reduce mental health symptoms and bolster positive LGBTQ+ identity.

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