

An Online Intervention to Promote Predictors of Supportive Parenting for Sexual Minority Youth

Joshua A. Goodman and Tania Israel
University of California, Santa Barbara

This article presents the Parent Resource for Increasing Sexual Minority Support (PRISMS), an interactive online intervention designed by the authors to promote parental self-efficacy and behavioral intentions for supporting a sexual minority child. The intervention was developed based upon psychological literature about parent support and feedback from parents of sexual minority youth and psychologists, and contains 5 interactive online modules: normalizing parent experiences, psychoeducation, reflection upon existing support, rehearsal of support, and affirmation. We assessed the feasibility and acceptability of PRISMS and collected pilot data to assess its efficacy. One hundred eighty-four U.S. parents of sexual minority youth Ages 13 to 18 were recruited from Amazon Mechanical Turk and were randomly assigned to complete either PRISMS ($n = 92$) or a control: an existing resource with psychoeducation about sexual orientation ($n = 92$). Analyses revealed that PRISMS was highly acceptable to participants and established the noninferiority of the intervention relative to the control in terms of credibility and affect at posttest. Two analyses of covariance did not establish significant associations between PRISMS and parental self-efficacy or behavioral intentions for supportive parenting, although we found small effect sizes ($d = .31$ and $.21$). Post hoc exploratory analyses offered preliminary support for the efficacy of PRISMS with parents who were highly distressed about their child's sexual orientation, suggesting that this might be an important population for future research. We discuss implications for research and practice, including the importance of interventions for parents of sexual minority youth.

Keywords: parents of LGB youth, parent support, online intervention, parental self-efficacy

Sexual minority (lesbian, gay, bisexual, queer, questioning, or otherwise nonheterosexual) youth face notable challenges, including higher rates of mental health concerns than their heterosexual peers (National Institutes of Health, 2016; Russell & Fish, 2016). An important predictor of mental health outcomes for sexual minority youth is their perception of emotional support and presence from parents and other family members. An extensive body of research has found significant associations between sexual minority youths' levels of perceived family support and such psychological outcomes as depression (Ryan, Russell, Huebner,

Diaz, & Sanchez, 2010); suicidality (Liu & Mustanski, 2012; Ryan et al., 2010); self-esteem (Ryan et al., 2010; Snapp, Watson, Russell, Diaz, & Ryan, 2015); alcohol, tobacco, and substance use (Newcomb, Heinz, Birkett, & Mustanski, 2014; Newcomb, Heinz, & Mustanski, 2012; Ryan et al., 2010); and overall mental distress (Shilo & Savaya, 2011). Whereas a lack of family support can lead to negative outcomes, high levels of family support can serve as a protective factor against psychological distress, including suicidality (Ryan et al., 2010).

Parents can be supportive of their sexual minority children in various ways. General support includes conveying warmth and love, doing enjoyable activities with one's child, and fostering a relationship in which the parent and child regularly communicate (Needham & Austin, 2010; Thoma & Huebner, 2014). Direct support for the child's sexual orientation includes a willingness to discuss sexual orientation, gender expression, and identity exploration; acknowledging the presence and impact of heterosexism; and connecting one's child with sexual minority media or community events such as a youth group (Harkness & Israel, 2018; Ryan et al., 2010). Family members can also demonstrate support for their child's sexual minority relationships, including validating a child's romantic relationships (to the extent that one would for heterosexual relationships) and welcoming a child's sexual minority friends into one's home (D'amico, Julien, Tremblay, & Chartrand, 2015; Ryan et al., 2010).

Parents can also demonstrate support outside of their direct interactions with their child. Parents can create more supportive

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Joshua A. Goodman and Tania Israel, Department of Counseling, Clinical, and School Psychology, University of California, Santa Barbara.

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Correspondence concerning this article should be addressed to Joshua A. Goodman, who is now at the Department of Psychology, Bates College, 4 Andrews Road, Lewiston, ME 04240. E-mail: joshua.goodman.phd@gmail.com

environments for their child by encouraging family members and friends to respect their child's sexual orientation, standing up to heterosexist comments, advocating on behalf of one's child when appropriate (e.g., in response to bullying at school), and taking steps to promote sexual minority inclusivity within their religious community (D'amico et al., 2015; Ryan et al., 2010). Additionally, parents can seek support for their own adjustment and education, including reading books, using online resources, and finding a confidential space—away from their child—to process their experience as a parent of a sexual minority child (D'amico et al., 2015; Huebner, Rullo, Thoma, McGarity, & Mackenzie, 2013).

In contrast, parenting behaviors perceived as unsupportive include both overt rejection of a child's sexual orientation, such as verbal rejection or sexual orientation change efforts (e.g., conversion therapy), and covert or unintentional disapproval, such as microaggressions (Nadal et al., 2011). Microaggressions can include suggesting that sexual minority identities are pathological or "just a phase," discouraging a child from coming out, and avoiding discussions related to sexual orientation (D'amico et al., 2015; Harkness & Israel, 2018).

Although sexual minority youth can benefit from family support as they navigate adolescence and emerging adulthood, parents may experience barriers to providing support. Parents of sexual minority youth may lack information about sexual orientation, know few sexual minority individuals, and hold prejudices toward sexual minorities (Conley, 2011a; D'amico et al., 2015; Pew Research Center, 2019). Notably, whereas children from other minority groups (e.g., racial or religious minorities) generally receive parental affirmation of their minority status and support based upon shared group experiences, sexual minority youth are typically the offspring of heterosexual parents, who may be uncertain of how to support a nonheterosexual child. Finally, adjusting to a role as a parent of a sexual minority child includes gaining knowledge, processing what it means to have a sexual minority child, navigating concerns (e.g., about a child's safety, spirituality, or happiness), and, for some parents, a sense of loss about what they believed to be their child's heterosexuality (Chrisler, 2017). Although parents typically become more supportive of their child's sexual orientation over time (see Phillips & Ancis, 2008), sexual minority youth may benefit from parental support earlier.

Increasing Parent Support

Although the importance of parental support for sexual minority youth is well established, and researchers have identified numerous supportive and unsupportive parenting practices, there are few psychological resources available to increase parent support. There is scarce research about family therapy for increasing parent support (but see Diamond et al., 2012; Willoughby & Doty, 2010). Support groups such as PFLAG involve peer support among parents of sexual minority youth; however, PFLAG groups predominantly serve White parents in urban areas and may not adequately reach racial minority and rural populations (Conley, 2011b). Researchers have called for more resources to help parents of sexual minority youth support their children (Needham & Austin, 2010; Newcomb et al., 2019; Russell & Fish, 2016).

Online psychological interventions are a promising strategy for increasing parent support. One such intervention asked parents to watch a video featuring narratives of family members of sexual

minority youth and suggestions for demonstrating support, and found that this increased parents' self-efficacy for supporting their child (Huebner et al., 2013). More broadly, online interventions have successfully targeted parents across a variety of domains, including advocating for a child with a disability (Glang, McLaughlin, & Schroeder, 2007), and communication with an adolescent, including discussing sexuality (Villarruel, Loveland-Cherry, & Ronis, 2010). Online interventions have several advantages for serving parents of sexual minority youth, including anonymity for parents concerned about revealing that they have a sexual minority child, low cost, scalability, and accessibility in communities in which there is limited access to in-person lesbian, gay, bisexual, transgender, and queer (LGBTQ) affirming resources (e.g., rural areas).

The theory of planned behavior (Ajzen, 1991) posits that attitudes, norms, and perceived behavioral control (self-efficacy) predict behavioral intentions, which, in turn, predict enacted behavior. Applying this theory to parents of sexual minority youth, a parent who, for example, is confident that they can support their child's same-sex relationship, has the attitude that it is good to support a child's same-sex relationships, and perceives social norms to be supportive of teenagers' same-sex relationships is more likely than another parent to intend to support their child's same-sex relationship. This behavioral intention is predictive of actions that convey support for their child's relationship. Certain predictors of behavior in the theory of planned behavior may be more malleable than others—for example, whereas a brief intervention may shift self-efficacy and behavioral intentions, it is unlikely to change unsupportive social norms in a parent's community, though it may alter perceived norms (see Tankard & Paluck, 2016).

Current Study

To address calls for interventions to facilitate parent support for sexual minority youth, the authors developed an interactive online psychological intervention—the Parent Resource for Increasing Sexual Minority Support (PRISMS). We conducted a pilot test to assess the feasibility and acceptability of this intervention, and collected preliminary outcome data to assess whether PRISMS would be associated with higher parental self-efficacy and behavioral intentions for sexual-minority-supportive parenting than a control group at posttest. Although measurement of parent behavior was beyond the scope of this study, higher parental self-efficacy and behavioral intentions are theoretically associated with enacted behaviors in the theory of planned behavior (Ajzen, 1991); supportive parenting behaviors, in turn, are associated with better mental health outcomes for sexual minority youth. We hypothesize that participants will find the PRISMS intervention to be acceptable and will have higher self-efficacy and behavioral intentions for sexual-minority-supportive parenting at posttest relative to a control group.

Method

PRISMS Intervention

The development of the PRISMS intervention was informed by intervention mapping (Kok, Harterink, Vriens, de Zwart, & Hoppers, 2006), including, among other steps, review of the literature,

needs assessment, seeking feedback during the design of the intervention, and developing an evaluation plan. An outline of PRISMS was initially drafted based upon parent training literature, theoretical underpinnings (described later in this section), and best practices for online interventions. Joshua A. Goodman then interviewed five parents of sexual minority individuals, recruited from a PFLAG chapter and personal connections, to provide feedback on the initial outline of PRISMS. Participants were queried regarding aspects of the intervention they perceived as helpful and unhelpful, engaging and unengaging, and what could be added to the intervention to make it more helpful. After a draft of the PRISMS intervention was completed, Joshua A. Goodman sought feedback about the intervention materials from 12 experts, four of whom provided feedback; experts were selected based upon research and clinical experience in relevant areas (e.g., LGBTQ youth mental health, parental self-efficacy). Next, Joshua A. Goodman conducted usability testing with a different sample of three parents of sexual minority individuals recruited from a parent support organization and personal connections to assess their experience with the intervention materials in real time (e.g., clarity of materials, fatigue). All interviews with parents of sexual minority individuals were completed under an institutional review board approved protocol. Feedback from each step was integrated into the current version of the PRISMS intervention.

The PRISMS intervention consists of five modules, each supported by psychological research about increasing self-efficacy and behavioral intentions. Three of the four mechanisms to increase self-efficacy outlined by Bandura (1977) were integrated into the intervention: verbal persuasion, performance accomplishment, and vicarious experience. In addition, the intervention draws upon findings that knowledge about how to communicate about sexuality-related topics increases self-efficacy for sexuality-related communication with adolescents (Morawska, Walsh, Grabski, & Fletcher, 2015). The intervention also drew upon applications of social-cognitive theory suggesting that high self-efficacy alone is not sufficient for behavioral change; rather, it must be paired with motivation to change (Stajkovic & Luthans, 2002). Intervention materials were therefore designed to motivate parents to support their sexual minority child. All materials, including videos, were developed by the researchers. A brief description of each module follows.

Module 1: Normalize parent experiences. Participants watched a video with quotes from parents about their reactions to their child coming out that encompassed a range of emotional reactions (e.g., denial, sadness, joy, relief) and were provided with a framework of parent adjustment to a child coming out (Phillips & Ancis, 2008). This module sought to establish rapport with participants by connecting with a range of emotional reactions and increase receptiveness to the forthcoming modules by emphasizing the ways in which parents adapt to and ultimately grow from their child coming out.

Module 2: Psychoeducation. Participants were provided with information about common experiences of sexual minority youth, completed multiple choice items about the role of parent support for sexual minority youth, and were provided with feedback about their answers. A sample multiple choice item is “LGB youth who _____ compared to LGB youth who perceive their parents as unsupportive,” with the following response options: anxiety, self-

esteem, and unprotected sex. This module sought to increase participants’ motivation for applying the forthcoming information (Stajkovic & Luthans, 2002).

Module 3: Reflection upon existing support. In this module, participants considered their use of six types of supportive parenting practices identified in the psychological literature. An example item is “When my child experiences bullying or mistreatment due to their sexual orientation, I consider it most important to,” with response options including providing emotional support, suggesting behavioral changes to reduce the likelihood of future bullying, and encouraging their child to “move on.” Participants were then provided with feedback based upon their responses and suggestions for additional ways to convey each type of support. Afterward, participants watched an animated video in which a child discusses an incident of homophobic bullying with their parent; participants were asked to identify the parent’s supportive and unsupportive parenting behaviors. This module sought to (a) help participants to recognize the ways they were already being supportive, (b) increase self-efficacy by equipping participants with knowledge about how to demonstrate support (Morawska et al., 2015), and (c) increase self-efficacy through vicarious experience and performance accomplishment when participants viewed and identified supportive and unsupportive parenting in the video (Bandura, 1977).

Module 4: Rehearsal of support. Participants were presented with a vignette in which a fellow parent shares that their child recently came out as nonheterosexual and asks for ideas about how to be supportive. Participants were provided with a textbox to write suggestions to this parent about how to best support their child. This activity sought to increase self-efficacy through performance accomplishment (Bandura, 1977) and increase behavioral intentions through self-justification theory (Leahy, 2000).

Module 5: Affirmation. Participants were provided with quotes about positive aspects of being a parent of a sexual minority child from Gonzalez, Rostosky, Odom, and Riggle (2013). Following this, participants watched a slideshow featuring uplifting music and images of sexual minority youth and their families. This module sought to reemphasize motivation for increasing supportive parenting practices and end the intervention on an uplifting note.

Participants

Participants were recruited from April to May 2018 through Amazon Mechanical Turk (MTurk), a crowdsourcing website in which participants can earn small amounts of money for completing online tasks. A notable benefit of MTurk is the ability to reach a diverse sample: With parents, specifically, MTurk may yield more diversity in terms of ethnicity, income, and gender than samples recruited through listservs (Dworkin, Hessel, Gliske, & Rudi, 2016) and may reach parents who are not connected to support networks for parents of LGBTQ youth. Steps were taken to gain reliable data through MTurk, including using the affiliated website TurkPrime to restrict recruitment to individuals who had previously identified as a parent of a child Age 9 to 19 who lives with them, and by only making the study available to participants with an established reputation on MTurk (Peer, Vosgerau, & Acquisti, 2014). Recruitment was also attempted via online advertisements, social media, and community organizations but yielded

few participants; as such, only results from MTurk are analyzed in this article. Due to technical errors with how the survey website coded recruitment sources, it is possible that a small number of participants from other recruitment sources (up to five) are included in the MTurk sample.

Participants were 184 U.S. parents, legal guardians, and primary caretakers of youth Ages 13 to 18 who identified as nonheterosexual or believed their child to be nonheterosexual. Sample size was selected based upon a power analysis that used effect sizes from similar studies. The average age of participants was 42 years, with a range from 30 to 60 years ($SD = 6.70$). A majority of participants identified as White (84%; $n = 155$) in a “check all that apply” format, and slightly more than one in five (22%; $n = 39$) identified with a racial or ethnic minority group, including Black/African American (13%; $n = 23$), Latino/a (6%; $n = 11$), Asian/Pacific Islander (2%; $n = 3$), and Native American/Alaska Native (2%; $n = 3$). Most participants identified as women (73%; $n = 134$), and two thirds identified as Christian (67%; $n = 123$). The modal participant perceived themselves as middle class on the MacArthur Scale of Subjective Social Status (Adler & Stewart, 2007), which asks participants to rate their socioeconomic status on a ladder ranging from the first (lowest) to the tenth (highest) step ($M = 5.96$, $SD = 1.67$). About half of participants reported living in a suburban location (56%; $n = 103$), with the remaining participants living in rural (25%; $n = 45$) and urban (17%; $n = 32$) locations.

Participants also provided demographic information about their sexual minority child. The mean age of participants’ children was 15 years. Nearly three fifths of participants’ children identified as a girl (58%; $n = 106$), 37% identified as a boy ($n = 68$), and 5% identified as nonbinary ($n = 10$). A plurality of participants’ children identified as lesbian or gay (39%; $n = 72$), and one third identified as bisexual, pansexual, or queer (33%; $n = 61$); about one in four parents either knew their child to be questioning their sexual orientation or were unsure of their child’s specific sexual orientation (27%; $n = 49$). Nearly half of participants’ children came out to their parent within the past year (46%; $n = 85$), and one third came out more than 1 year ago (33%; $n = 60$); about one in five (21%; $n = 39$) had a child whom they believed to be a sexual minority but had not come out.

Procedure

Participants viewed a recruitment page on MTurk inviting parents of sexual minority youth to use a resource for a research study, and provided informed consent anonymously through the survey website (Qualtrics) by clicking that they agreed to participate, in accordance with our approved Human Subjects Committee protocol at the University of California, Santa Barbara. Participants then completed an eligibility questionnaire to confirm that they were a parent or primary caretaker of a child Age 13 to 18 who lived with them, that they knew or believed their child to be nonheterosexual, and that they lived in the United States; participants also completed a demographic survey. Next, participants completed measures of attitudes toward sexual minorities and non-LGB parenting behaviors and confidence involving sexuality, which were predicted to be covariates of the outcome variables of parental self-efficacy and behavioral intentions for sexual-minority-supportive parenting. Afterward, participants were randomly assigned to ei-

ther the PRISMS intervention described above or the control condition using a function from the host website. The control condition involved psychoeducation about sexual orientation using a common online resource (American Psychological Association, 2008), and multiple-choice and true–false questions to assess for comprehension. As this resource could be easily found through a web search, the control condition was conceptualized as Internet treatment as usual. The control materials made a brief mention of the importance of parent support. Following the intervention or control, participants completed measures of parental self-efficacy and behavioral intentions for sexual-minority-supportive parenting, a measure of affect, acceptability and credibility questions, validity check items, and additional demographic items. Figure 1 provides information about participant flow and attrition.

Measures

Credibility. The credibility of materials was assessed with seven items adapted from the nine-item Credibility Questionnaire (Cred-Q; Cartreine, Locke, Buckley, Sandoval, & Hegel, 2012); two items that were not relevant to the current study were not retained, and certain items were revised to refer to supporting LGB youth. Items were measured on a 10-point scale ranging from *not at all* to *completely*. The Cred-Q was developed to assess the credibility of an online intervention for depression, and includes

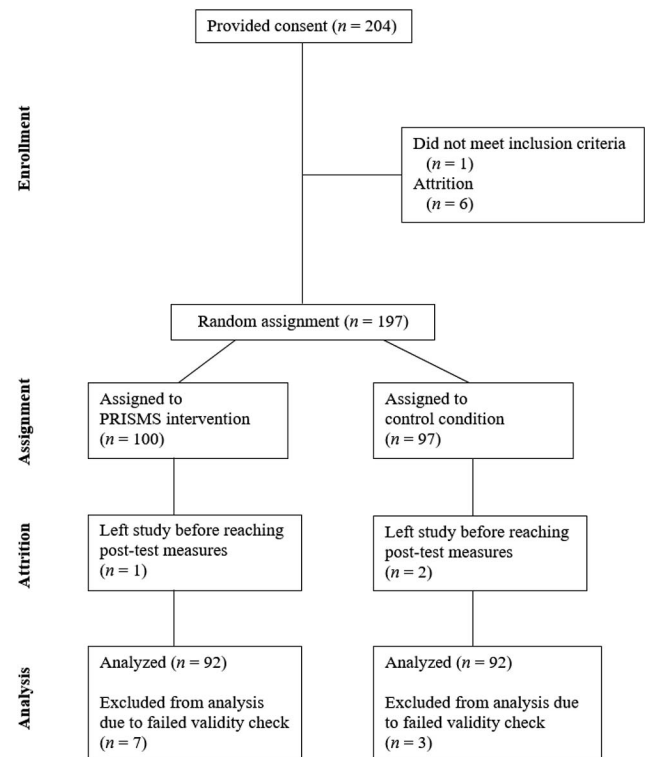


Figure 1. CONSORT diagram with participant flow and attrition. Validity checks included (a) an attention check item, (b) comparison of participant report of child’s age at pretest with age at which parent first believed their child to be nonheterosexual at posttest, and (c) participant self-report for how seriously they took the study. PRISMS = Parent Resource for Increasing Sexual Minority Support.

items about the trustworthiness and perceived bias of materials. A sample item is “How much do you believe what these materials tell you?” The adapted seven-item version of the Cred-Q had excellent internal consistency of $\alpha = .93$.

Positive and negative affect. Affect at posttest was measured with the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), a 20-item survey consisting of two 10-item subscales measuring positive (e.g., excited) and negative (e.g., ashamed) affect. Participants rated their present affect on a Likert scale ranging from *very slightly or not at all* (1) to *extremely* (5). With the current sample, the PANAS had strong internal consistency for both the Positive Affect ($\alpha = .91$) and Negative Affect ($\alpha = .89$) subscales.

Feasibility and acceptability. The feasibility and acceptability of the intervention was additionally assessed with questions about participants’ reactions to the intervention, satisfaction with the intervention, and the helpfulness of the intervention. A majority of items are from two feasibility and acceptability studies (Hightow-Weidman et al., 2012; Mustanski, Garofalo, Monahan, Gratzner, & Andrews, 2013) that served sexual minority communities. Feasibility and acceptability items, all on a 5-point Likert scale, unless otherwise specified, included (a) reactions to the intervention on scales ranging from *terrible to wonderful*, *difficult to easy*, *frustrating to satisfying*, and *dull to stimulating*; (b) the helpfulness of each activity within the PRISMS intervention; (c) items assessing acceptability for oneself and for other parents of sexual minority youth; (d) satisfaction with the PRISMS intervention as a whole; (e) motivation to use the information in the intervention and self-reported change in motivation; and (f) satisfaction with the length and amount of information on a 5-point scale, with 3 being *just right*, and 1 and 5 representing *too little* or *too much* length and information. Control participants completed the same items for comparison purposes, with the exception of answering items about the helpfulness of specific activities in the control condition.

Attitudes. The Lesbian, Gay, and Bisexual Knowledge and Attitudes Scale for Heterosexuals (LGB-KASH; Worthington, Dillon, & Becker-Schutte, 2005) was used as a pretest covariate to assess attitudes toward sexual minority populations. The LGB-KASH contains 28 self-report items on a 7-point Likert scale anchored by *very uncharacteristic of me or my views* (1) and *very characteristic of me and my views* (7). It contains five subscales: Hate; Knowledge of LGB History, Symbols, and Community; LGB Civil Rights; Religious Conflict; and Internalized Affirmativeness. With the current sample, the LGB-KASH had strong internal consistency of $\alpha = .88$, with reliability on subscales ranging from acceptable to strong ($\alpha = .73$ to $.89$).

Sexuality-related parenting practices. A questionnaire developed by Morawska et al. (2015) was used to examine participants’ sexuality-related parenting confidence and practices as pretest covariates. The questionnaire asks parents to rate their confidence and frequency with which they used 17 parenting strategies. Confidence was measured on a 10-point Likert scale ranging from *certain I can’t do it* (1) to *certain I can do it* (10), and behaviors were assessed on a 4-point Likert scale ranging from *not true of me at all* (1) to *true of me very much or most of the time* (4). Items are not sexual minority specific. Sample items include “encouraged my child to ask questions about sexuality” and “expressed comfort with my own sexuality.” The measure had internal

consistency of $\alpha = .91$ and $\alpha = .89$ for parenting confidence and behaviors.

Distress about child’s sexual orientation. Parental distress about their child’s sexual orientation at pretest was assessed with the following item: “To what extent do you feel distressed about your child’s sexual orientation?” The item was measured on a 5-point Likert scale ranging from *not at all distressed* (1) to *extremely distressed* (5).

Parental self-efficacy. There was no existing measure of parental self-efficacy to engage in sexual-minority-supportive parenting practices; therefore, the researchers used an existing scale format for measuring therapist self-efficacy for working with sexual minority clients (Dillon & Worthington, 2003), with items specific to sexual-minority-supportive parenting. Items and instructions were informed by recommendations for developing self-efficacy scales from Bandura (2006). An initial pool of items was reviewed by three psychologists, and a final set of 18 items was selected by Joshua A. Goodman; items were based upon specific examples of sexual-minority-supportive parenting practices in the literature. A sample item is “I can ask about crushes or attractions using language consistent with the gender(s) my child is attracted to.” Items were rated on a 6-point Likert scale from *not at all confident* (1) to *highly confident* (6). An exploratory factor analysis was performed to assess whether items loaded together as a consistent construct; all items loaded on a factor with acceptable to strong loadings of .40 or higher. The parental self-efficacy measure had internal consistency of $\alpha = .93$.

Behavioral intentions. Because no measure existed to assess behavioral intentions to engage in sexual-minority-supportive parenting behaviors, the researchers developed a measure to assess for this construct. The directions and Likert scale anchors were based upon suggestions for measuring behavioral intentions outlined in Ajzen (2006). As with the parental self-efficacy measure, an initial pool of items was reviewed by three psychologists, and Joshua A. Goodman selected a set of 22 items. Both supportive (e.g., “I plan to watch a TV show or movie about LGB topics with my child”) and unsupportive (e.g., “I plan to be upfront and honest with my child about my discomfort with their lesbian, gay, or bisexual identity”) intentions were included in the measure. Items were measured on a 7-point Likert scale ranging from *highly unlikely* (1) to *highly likely* (7) to engage in each parenting behavior within the next 3 months. Unsupportive items were reverse-scored. As with the parental self-efficacy measure, an exploratory factor analysis was performed to assess whether items loaded together; one item did not load with any other items and was removed, leaving a final set of 21 items. The behavioral intentions measure had a strong internal consistency of $\alpha = .88$.

Results

Although this trial was not preregistered, analyses reported here are consistent with what was planned within the study proposal. Data analysis was performed using SPSS, and multiple imputation was performed for missing items on scales (Schlomer, Bauman, & Card, 2010). Between-groups differences for parental self-efficacy and credibility were significant; the intervention and control participants did not differ significantly with regard to any other pretest covariate or outcome measures (see Table 1). Correlations of

Table 1
Descriptive Statistics for Measures

Measure	Scale range	Observed range	PRISMS		Control		<i>t</i>
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Parental self-efficacy*	18–108	44–108	101.02	9.38	97.43	13.75	2.07
Behavioral intentions	21–147	51–147	131.71	13.24	128.20	19.06	1.45
Sexuality: Parenting practices	17–68	28–68	54.44	9.02	54.94	9.14	.37
Sexuality: Parenting confidence	17–170	51–170	145.44	21.46	142.22	23.98	.96
LGB-KASH	28–196	79–196	138.54	26.31	138.20	26.98	.11
PANAS Positive	10–50	11–50	37.91	8.75	36.22	9.02	1.29
PANAS Negative	10–50	10–34	13.71	5.56	13.92	5.54	.28
Cred-Q*	7–70	21–70	61.83	8.66	58.09	11.38	2.66

Note. PRISMS = Parent Resource for Increasing Sexual Minority Support; LGB-KASH = Lesbian, Gay, and Bisexual Knowledge and Attitudes Scale for Heterosexuals; PANAS = Positive and Negative Affect Schedule; Cred-Q = Credibility Questionnaire.

* $p < .05$.

variables used to assess the intervention's efficacy can be found in Table 2.

Feasibility and Acceptability

Several strategies were used to test the hypothesis that PRISMS would be feasible and acceptable. First, to determine whether the intervention was sufficiently credible, participant ratings of credibility were compared with the control condition. Participants in both conditions rated the materials they used to be highly credible on the adapted Cred-Q (see Table 1). Noninferiority testing was used to assess whether PRISMS was no less credible than treatment as usual because a similar level of credibility as a well-regarded psychological resource would satisfy the hypothesis regarding acceptability (Walker & Nowacki, 2011). A comparison of confidence intervals (CIs) established the noninferiority of PRISMS compared with the control condition (95% CI [60.25, 63.86] and 95% CI [55.73, 60.44], respectively).

Second, affect at posttest was examined to ensure that the intervention did not lead to harm in the form of higher negative affect or lower positive affect compared with the control group. Levels of positive affect at posttest were similar in the intervention and control conditions (see Table 1). A comparison of CIs for positive affect established the noninferiority of PRISMS relative to the control (95% CI [36.10, 39.72] and 95% CI [34.36, 38.09], respectively). Levels of negative affect at posttest were comparable for the intervention and control conditions (see Table 1), and noninferiority for the intervention was established (95% CI [12.67, 14.74] and 95% CI [12.77, 15.07], respectively).

Table 2
Correlation Matrix for Variables Used in Efficacy Tests

Measure	1	2	3	4	5
1. Parental self-efficacy	—				
2. Behavioral intentions	.86	—			
3. Attitudes about sexual orientation	.57	.59	—		
4. Sexuality: Parenting confidence	.58	.45	.46	—	
5. Sexuality: Parenting practices	.44	.29	.36	.75	—

Note. All correlations are significant at $p < .001$.

Third, the helpfulness of intervention materials was evaluated on Likert scales ranging from *not helpful* (1) to *very helpful* (5) for each of seven aspects of the PRISMS intervention. Mean helpfulness ratings were 4 or above for each aspect of the intervention and ranged from 4.05 to 4.59. Participants in the control condition answered six items about the activities they completed using the same Likert scale, with means ranging from 3.81 to 4.16.

Fourth, participant satisfaction was examined. Intervention and control participants reported comparable levels of overall satisfaction ($M = 4.57$ and 4.38 , respectively, on a 5-point Likert scale ranging from *not satisfied* [1] to *highly satisfied* [5]). Reactions as measured on 5-point Likert scales, ranging from *terrible* to *wonderful*, *difficult* to *easy*, *frustrating* to *satisfying*, and *dull* to *stimulating*, also indicated similar satisfaction among intervention ($M = 17.37$) and control ($M = 16.67$) participants. Participants also evaluated acceptability for self and others by indicating the extent to which the resource they used was a good way to “learn more about how to support my child” and “help other parents with an LGB child” on a 5-point Likert scale from *strongly disagree* (1) to *strongly agree* (5). Means for these items were comparable between the intervention (4.61 and 4.74) and control (4.30 and 4.47) conditions.

Fifth, items about motivation were examined due to its role in behavioral change (Stajkovic & Luthans, 2002). The first item, motivation to use the information from the study, was measured on a 5-point Likert scale from *strongly disagree* (1) to *strongly agree* (5); means were similar in the intervention (4.67) and control (4.64) conditions. The second item was “the activities I completed made me less (1)/more (5) motivated to support my child as an LGB person,” with means of 4.62 and 4.20 for the intervention and control conditions, respectively. An independent samples t test established that this difference was significant, $t(181) = 8.28$, $p = .001$.

The final step to examine the feasibility and acceptability of the intervention was to evaluate the time it took participants to complete the study. Mean time to complete PRISMS, as measured by Qualtrics, was 47 min ($Mdn = 39$), and 90% of responses took 24 to 69 min—this time includes screening, preliminary, and posttest measures in addition to the intervention. Participants were asked, on a 5-point scale, to indicate whether they felt that the interven-

tion was *too short* (1), *just right* (3), or *too long* (5). Two thirds of participants stated that the length was just right ($n = 62$), 1% wished it were longer ($n = 1$), and nearly one third wished it were shorter ($n = 28$). About three quarters of participants reported that the amount of information in the intervention was just right ($n = 71$), while fewer participants reported wanting more information ($n = 9$) or less information ($n = 12$).

Preliminary Efficacy Analyses

We conducted two one-way analyses of covariance (ANCOVAs) as a preliminary assessment of the efficacy of the PRISMS intervention. To assess parental self-efficacy, we selected confidence with and use of sexuality parenting practices as covariates because self-efficacy in parenting about sexuality may generalize to self-efficacy about parenting with sexual orientation, specifically, and because performance accomplishment in parenting with sexuality generally was hypothesized to enhance self-efficacy for parenting about sexual orientation (see Bandura, 1977). When accounting for these covariates, the association between PRISMS and parental self-efficacy was not significant, $F(1, 180) = 3.54, p = .061$. A small effect size was present (Cohen's $d = .31$). To assess whether PRISMS was associated with behavioral intentions to support one's child, we conducted a one-way ANCOVA, with attitudes, an antecedent of behavioral intentions in the theory of planned behavior (Ajzen, 1991), as a covariate. Results did not indicate that PRISMS had a significant effect on behavioral intentions for sexual-minority-supportive parenting, $F(1, 181) = 2.97, p = .086$, although a small effect size was found ($d = .21$).

One potential explanation for our nonsignificant findings was the presence of ceiling effects on the outcome measures used. Five sixths of participants had an average score of at least 5 out of 6 for parental self-efficacy ($n = 154$; 84%), and nearly three quarters of participants had an average score of at least 6 out of 7 for behavioral intentions ($n = 135$; 73%). This may both speak to the items used to measure parental self-efficacy and behavioral intentions, and the fact that participants who were already supportive of their sexual minority children may have been more likely to participate than other parents. Ceiling effects were not present among a key group of interest: parents who reported feeling a high level of distress about their child's sexual orientation (4 or 5 on a 5-point Likert scale ranging from *not at all distressed* [1] to *extremely distressed* [5]; $n = 20$; see Table 3).

Table 3
Mean Levels of Outcome Variables Based on Parent Distress
About Child's Sexual Orientation

Measure	Low distress		High distress	
	PRISMS ($n = 81$)	Control ($n = 83$)	PRISMS ($n = 11$)	Control ($n = 9$)
Parental self-efficacy	102.27	100.42	91.45	69.89
Behavioral intentions	133.13	132.27	120.27	90.67

Note. Parent distress about child's sexual orientation was measured on a scale from *not at all distressed* (1) to *extremely distressed* (5). A score of 3 or lower was considered low distress, and a score of 4 or 5 was considered high distress. PRISMS = Parent Resource for Increasing Sexual Minority Support.

As a post hoc assessment of whether the PRISMS intervention may be associated with predictors of supportive parenting with this population, the two ANCOVAs were reconducted with participants who reported high distress about their child's sexual orientation. Our analyses yielded significant associations between PRISMS and parental self-efficacy when controlling for confidence and parenting practices regarding sexuality in general, $F(1, 16) = 6.28, p = .023$, as well as behavioral intentions when controlling for attitudes about sexual orientation, $F(1, 17) = 6.80, p = .018$. A visual inspection of demographic features of parents who reported high distress about their child's sexual orientation found that this group was comparable with the sample at large with the exception of parent ethnicity and when or if a child came out, which were selected for analysis. Thirty percent of high-distress parents identified as Black/African American ($n = 6$) compared with 10% of low-distress participants ($n = 17$); a chi-square test of independence found that this difference was significant ($\chi^2 = 6.21, p = .013$). Most highly distressed participants had a child who came out in the last year (55%; $n = 11$) or who[m] they believed to be nonheterosexual but had not come out (40%; $n = 8$). A chi-square test of independence established that when, or if, a child came out was associated with participant distress ($\chi^2 = 9.37, p = .009$); a post hoc evaluation of residuals indicated that participants whose child came out more than 1 year ago were less likely to be in the high-distress group than the low-distress group ($z = -2.80, p = .005$).

Discussion

We developed an innovative, interactive online intervention for parents of sexual minority youth and found that it was highly acceptable in terms of participant satisfaction, credibility, engagement, and helpfulness. Although tests of the efficacy of the intervention did not establish significant associations between PRISMS and parental self-efficacy and behavioral intentions with our sample at large when controlling for pretest covariates, each had a small effect size. We also found preliminary evidence that PRISMS was associated with parental self-efficacy and behavioral intentions among parents who reported high distress about their child's sexual orientation. Additionally, results conveyed that intervention participants self-reported a higher degree of gain in motivation to support their child relative to control participants.

Our preliminary tests of the efficacy of PRISMS, though nonsignificant, suggest that the effect size of PRISMS for parental self-efficacy ($d = .31$) is comparable with that of other online psychological interventions with parents. Although this effect size is slightly lower than the average effect size of .36 found in a meta-analysis of online parenting interventions (Nieuwboer, Fink, & Hermanns, 2013), it is remarkable when considering (a) that PRISMS is a single-session intervention, whereas most studies in the meta-analysis involved multiple sessions or prolonged access to a resource; and (b) the fact that parents of teenagers are less confident in their parenting than parents of younger children (Glatz & Buchanan, 2015), who were the target population of a majority of studies in the meta-analysis. In contrast, the effect size for behavioral intentions ($d = .21$) was smaller, even as PRISMS appeared to motivate participants to use the information they learned about supportive parenting. One explanation is that PRISMS addressed one predictor of behavioral intentions in the

theory of planned behavior—self-efficacy—but not two others—attitudes and social norms (Ajzen, 1991). A second explanation is that it may take some period of time for the intervention materials to fully impact behavioral intentions.

Our exploratory finding that PRISMS was associated with parental self-efficacy and behavioral intentions for parents who were distressed about their child's sexual orientation offers preliminary support for the efficacy of the intervention with this population. Parents who feel distressed about their child's sexual orientation are an important group, both because of the need to address the distress that these parents feel and because parents who feel distressed about their child's sexual orientation may be particularly likely to engage in unsupportive parenting practices (e.g., convey verbal disapproval, enroll their child in conversion therapy). We found that parents reporting high distress were particularly likely to have a child who had not been out for at least 1 year, consistent with past findings that parents become more comfortable with their child's sexual orientation over time (Chrisler, 2017; Phillips & Ancis, 2008). Highly distressed parents were also more likely than others to be Black, which is consistent with past research about parental attitudes toward sexual minorities among different racial groups (Calzo & Ward, 2009) and may also relate to awareness of a social environment in which intersecting prejudices affect sexual minority youth of color (Sutter & Perrin, 2016). Given the adverse effect of parental rejection of sexual orientation on the mental health of sexual minority youth (see Liu & Mustanski, 2012; Ryan et al., 2010), preliminary evidence for the efficacy of PRISMS with parents who were distressed about their child's sexual orientation is encouraging.

Implications for Research

Whereas past psychological research surrounding sexual minority youth has predominantly focused on the youth themselves, this study is one of a handful to address parent support—one of the most influential predictors of sexual minority youth mental health. In taking a systems-based approach, this study acknowledges that parents of sexual minority youth have their own needs that can be served related to their experience as a parent of a sexual minority child. In particular, this study highlights the potential for future research and clinical interventions to address parent support through online resources. Our study joins Huebner et al.'s (2013) *Lead with Love* video as, to our knowledge, the second online psychological intervention for parents of sexual minority youth and the first to use interactive multimedia to address predictors of parent support. Advantages of this study's online medium included interactivity (e.g., tailored feedback, a writing exercise), the low marginal cost of providing the intervention to each participant, and reaching individuals who may lack access to in-person support resources due to distance (e.g., in rural communities) or cost. In particular, the interactive nature of PRISMS may explain its high helpfulness ratings and acceptability and suggests promise in the use of interactive multimedia in future interventions for parents of sexual minority youth.

Future research can build from the current study in several key ways. First, PRISMS can be further tested with parents who report high distress about their child's sexual orientation. Replication of the exploratory analyses with a larger sample would help to establish the efficacy of PRISMS with this specific population.

More broadly, little is known about parents who feel highly distressed about their child's sexual orientation, and further research about the reasons parents feel distressed may inform future intervention research. One challenge in research with this population is recruitment: Parents who hold nonaffirming attitudes about their child's sexual orientation may be less likely than others to choose to participate in a study for parents of sexual minority youth. Because parents who are highly distressed about their child's sexual orientation are especially likely to have a child who is not out or recently came out, these parents may also be underrepresented in LGBTQ parent support or community organizations, from which recruitment often occurs. Thus, online interventions may be a particularly promising delivery format with this population. Research about strategies for recruiting parents who feel distressed about their child's sexual orientation would be a welcome contribution to the field.

Second, PRISMS can be adapted with additional modules, tailoring, and follow-up assessment. Because we did not find a significant association between PRISMS and behavioral intentions, the addition of modules to address attitudes and perceived social norms—the two predictors of behavioral intentions besides self-efficacy in the theory of planned behavior (Ajzen, 1991)—may be promising. PRISMS can also be tailored toward specific populations (e.g., cultural, religious, or gender groups) to speak to the specific experiences and needs of members of these populations. Finally, collecting follow-up data would allow for assessment of how PRISMS affects supportive parenting over time. Given the established relationship between parent support and sexual minority youth mental health, longitudinal research also offers an opportunity to assess the impact of PRISMS on the mental health of participants' children.

If established as efficacious, research can focus on dissemination and implementation of PRISMS. Such research can identify people or organizations (e.g., health care providers, religious leaders, school personnel) that can effectively distribute PRISMS to parents of sexual minority youth and evaluate the intervention's external validity. Furthermore, although our MTurk sample was more diverse in terms of ethnicity and gender than samples recruited from parent support organizations (e.g., Conley, 2011b; Gonzalez et al., 2013), ethnic minorities and fathers are nonetheless underrepresented. There is a need for further research about recruitment for interventions with underserved groups of parents of sexual minority youth. If a modified version of PRISMS is tailored toward a specific group (e.g., a religious group, fathers), targeting recruitment specifically toward that group is one strategy for recruiting a diverse sample.

Implications for Practice

In a society in which sexual minority youth face mental health disparities due to their social environment (Needham & Austin, 2010), there is a need for clinical interventions to address the systems in which these youth live. Although there is a dearth of therapy research about increasing family support for sexual minority youth, this study suggests that efforts to promote family support may help to prepare parents who are distressed about their child's sexual orientation to support their child. Several components of PRISMS can be integrated into counseling with parents of LGB youth, including reflection upon ways one already demon-

strates support, rehearsal of supporting one's child, and psychoeducation. An important component of PRISMS is to connect with parents' emotional experiences (e.g., using quotes from parents about their reaction to their child coming out) while emphasizing the significance of parents' actions toward their child; therapeutic interventions may likewise seek to find this balance.

Limitations

This study's findings should be interpreted with consideration of its limitations. First, this study, like other studies with parents of sexual minority youth, relied upon self-report measures. Self-report questionnaires about parenting can be affected by difficulties with estimating parenting behavior, social desirability effects, and a tendency to overstate help provided toward one's child (Mandemakers & Dykstra, 2008; Morsbach & Prinz, 2006). In particular, it may be difficult to accurately assess self-efficacy and behavioral intentions, which are more abstract than assessing how frequently one uses a specific parenting practice. Social desirability effects may also lead participants to underreport bias (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005) or overreport acceptability. A second limitation is that ceiling effects on outcome measures may limit our understanding of the effect of the intervention. In addition, although this study, like others assessing self-efficacy and behavioral intentions, adapted existing frameworks to the specific content of the study, the measures may benefit from further validation.

Third, findings from this study only apply immediately at posttest and further research is needed to assess for efficacy and acceptability over time or whether PRISMS may be associated with the use of supportive parenting behaviors. Additionally, whereas our design was informed by the theory of planned behavior (Ajzen, 1991), we did not assess for attitudes and social norms at posttest despite the potential that the intervention affected these factors. This may limit our understanding of the results and the interaction between variables.

Regarding our exploratory analyses with parents reporting high distress about their child's sexual orientation, it is important to note that this involves a small subset of participants, and results should be interpreted with caution. More broadly, it is not possible to rule out hypothesis guessing in our results, as PRISMS provided specific information about supportive parenting practices that was assessed in the outcome measures; the fact that the control condition also contained affirmative information about sexual orientation suggests that a similar, albeit potentially lower, risk existed for control participants, too. Likewise, we did not include a formal manipulation check to determine whether participants knew the condition they were assigned to; however, the fact that both conditions received materials that they considered relevant and helpful reduces the likelihood that this affected the results.

Conclusion

The current study pilot tested a brief, online intervention for parents of sexual minority youth and found that this intervention was highly acceptable to participants at a level similar to the acceptability of an existing psychological resource used by parents of sexual minority youth. Although we did not establish that the intervention was associated with parental self-efficacy and behav-

ioral intentions with our sample at large, we did find preliminary evidence that it was associated with these outcomes for parents reporting high distress about their child's sexual orientation. This study is part of a small but growing body of research that seeks to facilitate parent support for sexual minority youth and, more broadly, create more supportive spaces for these youth. Whereas most research to date has focused on the experiences of sexual minority youth, and this continues to be of critical importance, the current study highlights the value of both serving the needs of parents of sexual minority youth and targeting psychological interventions toward members of the family systems in which sexual minority youth live.

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Correction to Roddy et al. (2019)

In the article “Mechanisms of Change in a Brief, Online Relationship Intervention,” by McKenzie K. Roddy, Caitlin A. Stamatis, Karen Rothman, and Brian D. Doss (*Journal of Family Psychology*, advance online publication, August 5, 2019, <http://dx.doi.org/10.1037/fam0000569>), the effect sizes listed in the “Mech. slope → CSI slope” and “Indirect effect of treatment” columns of Table 2 were calculated incorrectly and mistakenly reported as Cohen's *d* values. These errors do not change any of the conclusions of the study. However, the correct values, column heads, and associated footnote are as follows:

Mech. slope → CSI slope	Indirect effect of treatment
<i>B</i>	<i>ab/s_y</i> ^a
X	X
-.037	.002
1.140	.129
-.381	.021
1.666	.085
-1.588	.048
-1.304	.057
1.456	.034
-.307	.017
.050	.006
2.027	-.023
.033	.000

^a Difference in relationship-satisfaction *SD* units attributable to indirect effect.

<http://dx.doi.org/10.1037/fam0000607>