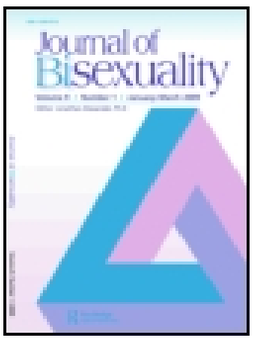

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Bisexual and Transgender Identities in a Nonclinical Sample of North Americans: Suicidal Intent, Behavioral Difficulties, and Mental Health Treatment

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SUMMARY. We hypothesized that a higher proportion of bisexual females ($n = 792$) and transgender individuals ($n = 73$) than bisexual males ($n = 1,457$) would self-report suicidal intent, behavioral difficulties, and mental health treatment. Relative to bisexual males, bisexual females and transgender individuals had significantly higher prevalence rates of suicidal intent, mental health difficulties, and mental health services. Prevalence rates among transgender participants did not vary by sexual orientation. The findings suggest that sexism and heterosexism have an interactive effect that compounds the social weight of oppression and increases risks for overwhelming sexual minorities' adaptive functioning.

KEYWORDS. Transgender, bisexual, suicide, mental health, discrimination

Lesbian, gay, bisexual, and transgender identities are often referred to with the acronyms GLBT or LGBT. These acronyms convey a sense of homogeneity and unity. For many bisexual and transgender members of this ostensibly unified, homogeneous group, the consistent placement of the letters B and T at the end of the acronyms belies their relatively low salience and the marginalized status they are afforded relative to gays and lesbians. Clinically as well as statistically significant differences among bisexuals, gays, lesbians, and transgender individuals may require reconsideration of the 'GLBT' acronym–at least in research concerning sexual orientation and mental health, including suicide ideations and attempts.

To date, most researchers conducting research on the topic of sexual orientation and suicidal intent (ideations and attempts) have combined gay, lesbian, and bisexual participants into an aggregate group (McDaniel, Purcell, & D'Augelli, 2001). Sometimes, in fact, sexual minorities of both sexes have been grouped together. Some researchers have compressed questioning youth into this aggregate group. Aggregating these disparate groups may have seriously confounded research concerning sexual orientation and suicidal intent. The possibility of confounded samples is suggested the varying weights of social oppression related to gender, sexual orientation, or both (Mathy, 2001, 2002a). Like lesbians, transgender individuals must cope with both sexism and heterosexism (cf. Herek, 1990). Gay males and heterosexual women must

cope with either heterosexism or sexism, respectively. Only heterosexual males escape sexist and heterosexist forms of oppression, with the notable exception of effeminate heterosexual males, because they are prone to being misperceived as gay or transgender.

Mathy (2001, 2002a) found that the proportion of transgender individuals who have had mental health difficulties is significantly greater than both heterosexuals and gay males, but not lesbians. Unfortunately, Mathy's work neglected to consider the possibility that the proportion of transgender individuals with mental health difficulties is significantly greater than that of bisexual males but not bisexual females. To complement the gay, lesbian, and heterosexual data and correct the oversight endemic to excluding bisexuals, we reexamined Mathy's hypothesis by comparing transgender individuals to bisexual females and males. We examined their self-reported histories of (a) suicide ideations and attempts, (b) difficulties excessively using alcohol, drugs, and sex, and (c) their prior and current treatment with psychotherapy and psychiatric medications.

Although researchers studying sexual orientation and suicidal intent often use variations on the GLBT acronym, the T is usually neglected altogether. Few researchers studying sexual minorities have examined suicidal intent and transgender identity per se (Mathy, 2001). There are important reasons to question whether there are differences in the constituent groups included in the GLBT aggregate. Diversity between each constituency of the gay, lesbian, bisexual, and transgender groups is at least as great as that between heterosexuals and each of the other sexual minority identities. In fact, to date, no study has evaluated risks of suicidal intent among bisexuals relative to transgender individuals. This is unfortunate, in part, because some recent research (Jorm, Korten, Rodgers, Jacomb, & Christensen, 2002; Robin, Brener, Donahue, Hack, Hale, & Goodenow, 2002) suggests that risks of suicidal intent among bisexuals are higher than among gay males and lesbians as well as heterosexuals. Using data from a longitudinal study being conducted in Canberra, Australia, Jorm et al. (2002) reported that bisexuals had worse mental health than both heterosexuals and gays and lesbians. Gays and lesbians had scores intermediate between bisexuals and heterosexuals. Robin et al. (2002) found differences in suicidal intent by sexual orientation (as measured by exclusively and eclectically same-sex sexual behaviors) when they reexamined cross-sectional data from four large representative, population-based high school surveys (*N* between 3,982 and 8,636 in each) conducted in 1995 and 1997 in Massachusetts and Vermont. They reported that the prevalence of suicide attempts was significantly higher among students who indicated that they had engaged in sexual behaviors with both female and male partners rather than one or the other.

Grossman, D'Augelli, and O'Connell (2001) did not find a difference in suicidality by bisexual and lesbian or gay sexual orientation among participants aged 60 to 91 years ($N = 416$). These authors evaluated self-administered surveys collected from a national sample of 416 sexual minorities aged 60 to 91 years. Participants were drawn from social, recreational, and support groups. Bisexuals did not differ from heterosexuals *vis-à-vis* gays and lesbians on measures of mental health, self-esteem, loneliness, suicidality, or problems associated with alcohol or drug use. Using a convenience sample drawn from community-based social and recreational groups, Hershberger, Pilkington, and D'Augelli (1997) found that bisexual-identified participants aged 14 to 21 years ($N = 194$) were more than 5 times more likely than heterosexuals as well as gays and lesbians to report that they had attempted suicide more than once. However, D'Augelli and colleagues did not report a similar finding 5 years later despite a sample collected from similar sources by the same authors (D'Augelli, 2002), with a larger sample ($N = 542$) of participants who were also aged 14 to 21 years.

Moreover, there is *prima facie* evidence to suggest that creating aggregate groups of gay males and lesbians or bisexual females and males is problematic. There is a plethora of rigorous research on suicidal intent that shows risks of suicide attempts and ideations as well as completions vary by sex. Although rates of suicide completions are higher among males than females everywhere except China (Eisenberg, Desjarlais, & Good, 1995), suicide attempts are more prevalent among females than males in the U.S. (Mościcki, 1994). Data from the nationally representative National Comorbidity Survey conducted between 1990 and 1992 ($N = 5{,}877$, aged 15-54 years) found that the lifetime odds of a suicide attempt were 2.2 times greater among females than males, even after controlling for other potentially confounding, covarying variables (Kessler, Borges, & Walters, 1999). Using similar statistical controls, the study also found that the odds of suicide ideations were 1.7 times greater among females than males. Another population-based study (Weissmann et al., 1999) reported that the odds of lifetime prevalence of suicide attempts among females were more than 3 times greater than males, and the odds of suicide ideations among females were 1.5 times higher than those of males. This suggests that studies of sexual orientation and suicidal intent that have combined females and males into an aggregate group may have inadvertently confounded their data. In fact, it appears that a substantial number of peer-reviewed studies on this topic (McDaniel et al., 2001) have done so.

This is the first study of sexual orientation and suicidal intent to compare bisexual females and males to transgender individuals. The biological sex of the self-identified transgender participants is unknown and probably unknowable (Mathy, 2001, 2002a). The development of a priori hypotheses was limited by the paucity of preexisting data. Theoretically, however, the assignment

of bisexuals (as well as transgender individuals) to the end of the GLBT or LGBT community's acronym symbolically represents a somewhat devalued, "add-on" identity (Weinberg, Williams, & Pryor, 1995). As Weinberg et al. noted, self-identified bisexuals are often treated with suspicion by gays and lesbians as well as with contempt by heterosexuals. Garber (1996) dispels the myth that bisexuality is a developmental phase in the process of becoming a self-identified gay or lesbian. Instead, bisexuality is a sustainable identity that generally has been unsupported by either mainstream heterosexual or gay and lesbian cultures. Recent research has shown considerable fluidity in self-identification of sexual orientation among females during early adulthood (Diamond, 1998, 2000), even as same-sex attractions persisted among participants who subsequently identified as heterosexual (Diamond, 2003).

To examine risks among self-identified bisexual females and males relative to transgender individuals, we conducted a secondary analysis of a community-based sample collected in June 2000 via the Internet Website of an international news organization (Cooper, Scherer, & Mathy, 2001). That study was designed to study human sexuality, including online sexual behaviors. Altogether, the study collected data on 76 items from 40,935 participants. The present study examined suicide ideations and attempts, behavioral control difficulties, and current or previous mental health treatment. Following Mathy (2001, 2002a), we tested the null hypotheses that there are no differences between (a) bisexual females or males when compared to (b) transgender individuals. Following the work of Cochran and Mays (2001) concerning the relation between stress-related disorders and sexual minority status, Mathy hypothesized that the combined effects of heterosexism and sexism are greater than either form of oppression alone. Transgender individuals and bisexual females are both subjected to sexism and heterosexism, and bisexual males are subjected to heterosexism but far less sexism. Therefore, as with Mathy's findings that transgender individuals had higher prevalence rates of suicidal intent and mental health difficulties than heterosexuals and gay males but not lesbian females, we would expect that transgender individuals have higher risks of mental health problems, including suicide ideation and attempts, than bisexual males but not bisexual females.

METHODS

Data Analysis Strategy

Secondary data analyses were conducted of a large dataset (N = 40,935) used in six prior peer-reviewed papers addressing Internet research methods

(Cooper, Scherer et al., 2001), online sexual activities (Cooper, Griffin-Shelley, Delmonico, & Mathy, 2001; Cooper, Morahan-Martin, Mathy, & Maheu, 2002), sexual orientation and suicidal intent cross-culturally (Mathy, 2002b), transgender identity and suicidal intent (Mathy, 2002a), and transgender identity and stress-related disorders (Mathy, 2001). All analyses reported here are unique to the present study and have not been published previously. We used the same 73 transgender participants as did Mathy (2001, 2002a) to address the neglected comparison between these individuals and bisexuals. The study was approved by the Institutional Review Board at the University of Minnesota–Twin Cities, at which the first author had an affiliation at the time data analyses were conducted.

Two subsamples were collected in June 2000. They included a convenience sample, with which to oversample sexual minorities, and a selected random sample to ensure heterogeneity among participants. For the present study, we examined data from all self-identified transgender and bisexual participants, regardless of subsample, in order to increase the statistical power of our analyses. The null hypothesis of between-group equality was rejected if $p < .05$. We did not assume equality of variances when conducting independent sample t-tests of the null hypothesis.

Participants

A community-based sample of 40,935 Internet users was obtained via the Website of a major (anonymous) news organization between June 1 and June 30, 2000. The specific sampling design has been well articulated elsewhere (Cooper, Scherer et al., 2001). Briefly, every 1,000th visitor to the news organization's Website was invited to participate in a study of human sexuality. Using this selected random sampling design, we obtained 7,544 participants. A convenience sample was collected simultaneously, via an Internet link imbedded in the news organization's Health Information section. The convenience sample was advertised by other news media and word of mouth. We obtained 33,391 participants in the convenience sample.

Initially, these two samples were drawn simultaneously to evaluate the hypothesis that implementation of rigorous research methods could effectively eliminate unreliable cases when research is conducted via the Internet. The hypothesis was supported by the data, with the exception of questions directly related to online sexual behaviors (i.e., sampling on the dependent variable), as we had predicted. No Internet usage questions appear in the present study. The 76-item survey instrument administered via the Website included 10 items (13.16% of total) specifically designed to lead to a priori exclusion from the study. Three subscales consisting of two sets of four items each as well as two

other items were randomly distributed throughout the questionnaire. The subscales assessed participants' predispositions to narcissism and neuroticism (i.e., overly positive or overly critical self-evaluations). Participants who made affirmative responses to all four items on either scale were eliminated from the study. Cronbach's alpha for the scales were 0.34 for narcissism and 0.37 for neuroticism. Two items designed to identify misrepresentation or carelessness were also randomly distributed. These items included, "I have spent more than 5,000 hours engaged in online sexual activity this year" and, "I have spent more than 8,000 hours engaged in online sexual activity this year." These are equivalent to 13.7 and 22 hours per day online, every day. Participants who responded affirmatively to either of these items were eliminated from the study.

Several post hoc criteria were used to further increase reliability. Although there was a normal attenuation in frequency of participants until age 80 years, there was a suspicious increase in frequency among participants aged 81 and older. Therefore, we eliminated from the data any participant who gave an age older than 80. Post-hoc data analyses also revealed a statistically significant difference between participants who failed to answer more than two questions *vis-à-vis* those who left only one or two items unanswered. Therefore, we eliminated participants with more than two items unanswered. A total of 6.5% of the convenience sample and 6.8% of the selected random sample was eliminated. The between-sample difference in percentage of cases eliminated was not statistically significant. Elimination of these cases and combining the samples resulted in a total $N = 38,204$ (94.6% of original combined samples). The selected random sample included 5,925 males and 1,112 females. The convenience sample included 25,306 males and 5,776 females. Self-identified transgender participants ($n = 14$ in selected random sample; $n = 70$ in convenience sample) were included. Comparisons of transgender participants to gays, lesbians, heterosexual females and males, and psychosocially matched females and males can be found elsewhere in the peer-reviewed literature (Mathy, 2001, 2002a). Due to the complexity of analyzing a multinational sample as well as the administration of the survey only in English, participants from countries other than the U.S. and Canada were not included in these analyses.

The total sample included 2,322 participants, consisting of 1,457 bisexual males (62.7%), 792 bisexual females (34.1%), and 73 transgender individuals (3.1%). On average, bisexual males were aged 36.22 years ($SD = 11.82$), bisexual females had a mean age of 29.53 years ($SD = 8.85$), and transgender participants had an average age of 36.88 years ($SD = 9.96$). Analysis of variance revealed that bisexual females were significantly younger than transgender participants (6.68 years, *SE* 4.78) and bisexual males (7.34, *SE* 1.33), F (2,

2319) = 100.35, $p < .001$. Sexual minority females often experience multiple stages of the coming out process simultaneously during middle adulthood (Diamond, 2003). Thus, the age differences in the sample are consistent with existing literature regarding ages of bisexual females and males.

Instrument

The survey contained 76 items. A total of 17 questions were added to a previous survey administered by the same (anonymous) international news organization (Cooper, Scherer, Boies, & Gordon, 1999). The survey has been appended *en toto* in a prior peer-reviewed publication (Cooper, Morahan-Martin et al., 2002). As in the study from which the survey was adapted, age was a continuous variable: "My age is: ___." Four new questions queried participants about their history of suicidal intent and prior mental health treatment. These included (a) "In the past, I have been on medications for a psychiatric condition," (b) "In the past, I have been in psychotherapy," (c) "I am currently on medications for a psychiatric condition," and (d) "I am currently in psychotherapy." Response categories included "Yes" and "No." Suicidal intent (ideations and attempts) was assessed with two questions, including (a) "I have had serious thoughts of suicide," and (b) "I have made a serious suicide attempt or gesture." Response categories included "Yes" and "No." Previous history of behavioral difficulties was assessed with several categorical responses to the following item: "In the past, I have excessively used or had difficulties controlling (check all that apply)," with response categories including alcohol, drugs, gambling, food, sex, work, and shopping or spending money. Current history of behavioral difficulties was evaluated with the following item: "At present I PRIMARILY have difficulties with:" Response categories were identical to those in past behavioral difficulties. Prior behavioral difficulties assessed items likely to be included as part of a comprehensive mental assessment. Current primary behavioral difficulties are important because they may cause or contribute to the reasons for seeking treatment. Items evaluating mental health treatment were included at the beginning of the survey. Items assessing behavioral difficulties were included at the end of the survey.

Procedure

Participation was voluntary. Prior to beginning the survey, participants were asked to give their informed consent and acknowledge that they were aged 18 years or older. Institutional Review Board approval for the study was granted by the Pacific Graduate School of Psychology, with which one of the

Co-Principal Investigators had an affiliation. The University of Minnesota–Twin Cities, with which another Co-Principal Investigator has an affiliation, subsequently approved the secondary analyses reported here. Agreement to participate in the study and acknowledgment of majority age status were required to gain access to the questionnaire. The news organization's systems analysts enabled a program that proffered an invitation to participate in the selected random sample at each 1,000th unique visitor to the Website. The overall response rate in the selected random sample was 25% without replacement and 75% with replacement, a percentage comparable to random digit dialing (Cooper, Scherer et al., 2001). Global User Identification Numbers (GUIDs) and electronic cookies ensured mutually exclusive participation in either the selected random sample or the convenience sample. Only participants using browsers set to accept electronic cookies could respond to the survey. The GUID assigned a unique number that maintains anonymity while tracking username, Internet Service Provider, and computer.

The final sample was not representative of all users of the Website in June 2000. The results cannot be generalized to all Internet users. Although a national sample, it is not representative of the U.S. population. However, the sampling design enabled us to gather a large and heterogeneous, community-based sample of sexual minorities from a nonclinical source entirely independent of formal or informal gay, lesbian, bisexual, or transgender-related organizations and institutional infrastructures. It did not rely upon knowing any other gay, lesbian, bisexual, or transgender person (as in snowball methods), membership in any organization (as in social or recreational activities), or potentially confounding educational structures (as in university support groups). Although neither probabilistic nor representative, the sampling method attempted to address key criticisms concerning prior research about sexual orientation and suicidal intent (Muehrer, 1995; McDaniel et al., 2001).

RESULTS

Suicidal Intent

We show results of our analyses of variance in Table 1. The associations between bisexual gender and transgender status and suicidal intent were statistically significant. Additional post hoc analyses with Dunnett's C revealed that suicide ideations were significantly more prevalent among bisexual females and transgender individuals than among bisexual males. Furthermore, analyses indicated a history of suicide attempts were significantly more common among bisexual females and transgender individuals than among bisexual males.

TABLE 1. Analyses of Variance for Suicidality, Behavioral Problems, and Mental Health Intervention (Proportion of Yes Responses, M and SD) by Bisexual Gender and Transgender Status

	Bisexual Male		*Bisexual Female*		*Transgender*		
	N = 1457		N = 792		N = 73		
Suicidality	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F (2,2320)*
Ideation	.23	.41	.36	.48	.37	.49	26.484***
Attempt	.07	.26	.17	.38	.23	.43	32.831***
Past Behavioral Problems							
Alcohol	.21	.41	.20	.40	.32	.47	2.492
Drugs	.14	.35	.17	.38	.14	.34	2.020
Sex	.23	.42	.19	.40	.15	.36	3.456*
Treatment History							
Psych Medication	.16	.38	.27	.44	.32	.47	21.136***
Psychotherapy	.22	.42	.36	.48	.53	.50	38.042***
Current Treatment							
Psych Medication	.08	.27	.12	.33	.22	.42	12.177***
Psychotherapy	.05	.21	.09	.28	.18	.39	14.107***

Notes. *$P < .05$; **$P < .01$; ***$P < .001$

Psychiatric Treatment

Analyses also indicated that a significantly greater proportion of transgender individuals and bisexual females than bisexual males reported prior and current psychotherapy as well as prior and current usage of psychiatric medications. Post-hoc analyses using Dunnett's C indicated that transgender individuals and bisexual females were significantly more likely than bisexual males to report that they had been in psychotherapy previously. Transgender individuals and bisexual females were significantly more likely than bisexual males to state that they had previously received treatment with medications for a psychiatric condition. The transgender individuals and bisexual females were significantly more likely than bisexual males to report that they were being treated with medications for a psychiatric condition at the time of the study. Finally, our results indicated that transgender individuals and bisexual fe-

males were significantly more likely than bisexual males to be receiving psychotherapy at the time of the study.

Past Behavioral Difficulties

Analyses of variance indicated an association between being a self-identified bisexual female or a transgender individual and self-reported prior difficulties with sex ($p = .032$), but these data were not statistically significant following post hoc analysis using Dunnett's C. Other behavioral difficulties did not differentiate the three groups.

DISCUSSION

The present study is the first to examine differences between bisexuals and transgender individuals. Transgender individuals were found to have higher risks of mental health problems, including suicide ideation and attempts, than bisexual males. However, transgender participants and bisexual females did not differ significantly in their mental health profiles. The findings suggest that sexism and heterosexism have an interactive effect that compounds the social weight of oppression and increases risks for overwhelming sexual minorities' adaptive functioning.

This study complements earlier research (Mathy, 2001, 2002a), which did not address the possibility that the proportion of transgender individuals with mental health difficulties may be significantly greater than bisexual males but not bisexual females. Specifically, this study addressed the previous deficiency by reexamining Mathy's data in relation to transgender and bisexual individuals, to examine possible associations with suicide ideations and attempts, difficulties excessively using alcohol, drugs, and sex, as well as prior and current treatment with psychotherapy and psychiatric medications.

A previous examination of transgender identity and suicidal intent (Mathy, 2002a) revealed a significant relation between transgender identity and suicide ideations and attempts. The study also argued that transgender individuals are subject to both sexism and heterosexism leading to significantly greater amounts of social oppression than heterosexual females and gay males. Mathy's hypothesis logically would extend to bisexual females, as well, a suggestion that has been supported with the analyses present here. Logically, if transgender individuals and bisexual females are subject to both sexism and heterosexism, and bisexual males are subject primarily to heterosexism but not sexism, one would expect to find, as we did, that transgender individuals

have higher risks of mental health difficulties than bisexual males but not bisexual females.

A strong relation between bisexual gender and transgender status was revealed by our reexamination. Suicide ideations and suicide attempts were significantly more prevalent among bisexual females and transgender individuals than among bisexual males. A greater proportion of transgender individuals and bisexual females than bisexual males reported (a) prior and current psychotherapy and (b) prior and current use of psychiatric medications. Reexamination of the original data did not yield a significant association between sexual orientation or gender group and either drug or alcohol problems. However, we did see a trend towards an association when dealing with prior difficulties with sexual behaviors.

As suggested by the "GLBT" acronym, sexual minorities are often perceived to be a homogeneous group. These findings once again elucidate the importance of not aggregating these disparate groups, as researchers often have done previously. This study suggests that sexism and heterosexism may have an iterative effect that could, in fact, increase risks for both suicidal intent and mental health conditions among transgender individuals and bisexual females in contemporary North American society. We would argue that greater recognition of the diversity between and within each constituency of the gay, lesbian, bisexual, and transgender groups (GLBT) is at least as great as that between heterosexuals and each of the other sexual minority identities. Put somewhat more directly, researchers and not "GLBT" constituents are the "others," and the attempts to compress all nonheterosexuals into a composite category for comparison to heterosexuals effectively obscures the diversity that rigorous research seeks to reveal.

In sum, it is clear that the suicidal intent and mental health of bisexual females and transsexual individuals cannot be properly addressed within the aggregate group of "GLBT" individuals. Bisexual females and transgender individuals appear to have unique mental health needs and risks that surpass those of gay males and heterosexual females. Their needs and risks may reflect the sequelae of rejection and isolation from the heterosexual community and something akin to an inadvertent second-class status within the "GLBT" community. Further research is needed to test the sociological and psychological dimensions of mental health and resilience among bisexuals. It is important for researchers to study self-identification as well as sexual behavior across the lifespan in order to determine risks of suicide and sexual orientation at different life stages. Theoretically, substantial same-sex as well as other-sex attractions provide bisexuals and transgender individuals with perceived choices in living a heterosexual lifestyle. This apparent choice in lifestyles, despite substantial same-sex and other-sex attractions, may structure a differ-

ent set of risks and protections that are unique to bisexual identity formation and maintenance at different ages.

The present study had a number of limitations. First, it relied upon retrospective self-report, which may be subject to recall and response biases. Second, the study was cross-sectional, making it impossible to assess any causal relations in the data. For example, it would be important for future studies to determine whether mental health treatment mediated prior difficulties with alcohol or drugs before or after the behavioral difficulties began. Third, the data were collected via the Internet Website of an international news organization. This has advantages and possible disadvantages. One possible disadvantage is the underrepresentation of economically disadvantaged individuals, of whom a disproportionately large number are ethnically diverse. However, this potential deficit can be compensated for by oversampling from economically disadvantaged and ethnically diverse groups. Administration of surveys via computing technology obviates the need for intrusive interviews or expensive paper-and-pencil methods. However, the ultimate reliability of the Internet as a research tool remains unknown. Notwithstanding the rigor with which these data were gathered, further research is needed to rigorously determine whether individuals who answer surveys online differ significantly from those who participate in offline research. Contemporary research suggests that Internet samples gathered with carefully designed methods can yield samples that are just as robust as those obtained by professional polling organizations (Mathy, Schillace, Coleman, & Berquist, 2002). With appropriate methodological controls, research rigor and reliability can be significantly increased, reducing the chances that unreliable participants will be included in one's data (Cooper, Scherer et al., 2001; Mathy et al., 2002). The use of the Internet as a sampling tool is, in any case, far superior to the conventional snowball sampling method often used to obtain samples of sexual minorities. Snowball methods require at least some interaction, increasing the possibility for researcher and participant biases to confound the data. Administration of surveys via the Internet obviates the need for sexual minority participants to have had some connection with GLBT community-based agencies or social or recreational venues that could potentially influence their responses.

As evidenced by the evolution in random digit dialing over the past half century, the technology used to administer surveys is less important than the rigor with which researchers create new ways to reach a heterogeneous and unbiased sample of participants whose responses cannot influence those of others. Obtaining a truly random sample of bisexuals and transgender individuals is impossible precisely because the stigma and oppression of sexual minorities limits self-disclosure, thereby making the population parameters of nonheterosexuals unknown. The methodology we used to gather the data for

the present study obtained a very large, international sample ($N = 40,395$) by seeding the survey in the Website of a professional news organization. Although this is a relatively unbiased source, participants may have been more aware of public events than the general population. Nonetheless, further research is needed to determine whether large, unbiased samples of sexual minorities can be reliably obtained via the methods used in the present study. Thus far, prior research by the author and others engaged in the development of this technology for use as a research tool has suggested the data are valid and reliable (Cooper, Scherer, et al., 2001; Mathy et al., 2002), provided that methodologists employ the same research rigor, with the same attention to creating control and comparison groups, as scientists do when creating various experimental protocols (e.g., randomized control trials), random digit dialing, case-control studies, and other offline research methods.

As the Internet becomes increasingly integrated into the everyday life of North American culture, its use may become an even more valuable tool for conducting research with sexual minorities and members of other hard-to-reach groups who have been traditionally underrepresented. To be sure, many of the studies of sexual orientation and suicidal intent published to date have combined bisexuals with gays and lesbians because they found too few sexual minorities (even in large, population-based samples) to generate sufficient statistical power to conduct hypothesis testing with discrete sexual minority subgroups. Nor has research been published until recently (e.g., Jorm et al. 2002) that suggested there may be a clinically and methodologically important reason for doing so. The present study aimed to make a small but meaningful contribution to the research concerning bisexuals and transgender individuals, using a sampling methodology designed specifically to obtain data from difficult-to-reach and underrepresented populations (Mathy et al., 2002). Although the sampling design is suboptimal relative to nationally representative, random sampling, it has enabled us to empirically substantiate that bisexual females are more similar to transgender individuals than to bisexual males. Like transgender individuals and unlike bisexual males, bisexual females must cope with both heterosexism and sexism. As a possible consequence of the dual effects of heterosexism and sexism, transgender individuals and bisexual females have higher risks of mental health problems, including suicide ideation and attempts, than bisexual males. Future research may improve our understanding of between-group differences among discrete identities included in the "GLBT" acronym as well as those between heterosexuals and sexual minorities.

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