

Demographic and Psychosocial Factors Associated With Psychological Distress and Resilience Among Transgender Individuals

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Transgender and gender-nonconforming individuals have gender identities, expressions, or behaviors that are not typically associated with the sex they were assigned at birth. They may identify more strongly with the opposite gender (e.g., transgender males who are natal females and transgender females who are natal males), or they may identify outside the gender binary (e.g., individuals who identify with neither or both genders).^{1,2} It is of concern that psychiatric morbidity prevalence estimates are substantially higher among transgender individuals than that of both the general population and sexual minority subpopulations.^{3–5}

An emerging body of research has begun to examine the determinants of psychopathology among transgender people in an attempt to address these disparities in mental health. Through this research, demographic and psychosocial factors that are known determinants of general population mental health have also been identified as risk factors for reduced mental health among this minority group. For example, younger age, low socioeconomic status, living in a rural area, and poor social support have all been linked to poorer mental health outcomes among transgender individuals.^{3,4,6–11}

Social determinants that pertain uniquely to the mental health of marginalized people have also been assessed. The Minority Stress Model initially proposed that “minority stressors,” or experiences of stigma, account for the high rates of psychiatric morbidity observed among sexual minority groups.¹² More recently, the model has been extended to address the experience of transgender individuals.¹³ In support of the model, gender-related stressors such as discrimination, victimization, exposure to transphobia, and internalized stigma have all been identified as strong predictors of psychopathology among transgender people,^{3,4,7,10,14,15} particularly among transgender youths.^{11,16}

Objectives. We examined the independent demographic and psychosocial factors associated with psychological distress and resilience among transgender men and women.

Methods. Our data came from an online survey involving a national Australian sample of 169 transgender men and women in 2011. Survey questions assessed demographics; sources of support; contact with lesbian, gay, bisexual, and transgender peers; and experiences of victimization. We assessed the outcomes with the Kessler Psychological Distress Scale and the Brief Resilience Scale.

Results. In all, 46.0% of the sample reported high or very high levels of psychological distress. Multivariable regression analyses identified considerably different independent factors for psychological distress and resilience. Younger age, feeling unable to turn to family for support, and victimization experiences were associated with greater psychological distress, whereas higher income, identifying as heterosexual, and having frequent contact with lesbian, gay, bisexual, and transgender peers were associated with greater resilience.

Conclusions. With different factors identified for psychological distress and resilience, these findings may help inform the development of tailored mental health interventions and resilience-building programs for this vulnerable population. (*Am J Public Health.* 2015;105:2108–2116. doi:10.2105/AJPH.2015.302763)

Although research focusing on the antecedents of psychopathology in the transgender population is growing, little is known about transgender individuals’ capacity for resilience in the face of hardship and long-term stress. Resilience is broadly defined as the capacity to positively adapt (or bounce back) after experiencing adversity,¹⁷ and research in this area is particularly vital for vulnerable populations who experience frequent socio-contextual stress.

Qualitative studies have identified themes of resilience among transgender individuals, such as connection to the lesbian, gay, bisexual, and transgender (LGBT) community and supportive personal relationships^{18–20}; however, only a few quantitative studies have assessed determinants of resilience in this population. For example, one study found that agentic and communal personality traits were associated with increased levels of resilience among transgender women.²¹ Some researchers have

indirectly assessed resilience factors among transgender individuals through the identification of stress buffers. For example, in a recent study of 1093 transgender men and women, peer support (indexed as social contact with other transgender people) was identified as a stress buffer that moderated the relationship between experiences of gender-related stigma and psychological distress.³ It has been suggested that identifying with similar others allows for the development of a positive in-group identity, encourages a process of positive self-appraisal, and allows access to “group-level coping,” which all have protective benefits for the mental health of marginalized people.^{12,13} Through these mechanisms, engagement and connection with similar others may also foster an individual capacity for resilience in the face of future stress or adversity.¹²

Recent conceptualizations of resilience attest that the construct extends beyond simply the absence of psychopathology after enduring

acute or chronic stress.²²⁻²⁴ It has been demonstrated that psychological immunity to stressors can manifest as competence or positive adaptation in a range of social, psychological, and general health outcomes.²⁵ As such, when resilience is operationalized as the generalized capacity to positively adapt after experiencing hardship and it is assessed as an outcome variable, this permits a more global assessment of the construct without narrowing to the type of stressor, nor the area of adaptation. This broader way of conceptualizing resilience is most relevant when one is researching marginalized populations who experience chronic social stress in many different forms with potentially varying social and psychological sequelae. Furthermore, it is particularly pertinent when one is informing the design of general resilience-building programs. Only 1 quantitative study has examined factors of resilience among transgender individuals in this comprehensive way²¹; however, that study did not assess social determinants that may be targeted by interventionists.

In sum, research on transgender mental health is in its infancy. Although some social determinants of mental health outcomes have been identified among transgender individuals, further research is needed. Studies have tended to focus on a few specific factors rather than provide a thorough assessment of demographic and psychosocial factors. Assessing the relative impact of these factors by conducting analyses within a single sample is needed to inform the development of tailored mental health interventions. Furthermore, there is a need to identify not only the factors that influence psychological distress, but also resilience, as a generalized capacity to positively adapt after experiencing adversity. By canvassing a range of demographic and psychosocial factors, this study had 3 main aims: (1) to identify independent factors associated with psychological distress among transgender men and women, (2) to identify independent factors associated with resilience among transgender men and women, and (3) to examine the extent to which factors that are associated with distress were similar or different to those associated with resilience.

METHODS

The sample for this article was drawn from Private Lives 2, a national survey assessing the

health and well-being of 3835 LGBT Australians.²⁶ Participants were recruited from all states and territories within metropolitan, regional, and remote areas. Although a convenience sample, the demographic distribution closely mirrored the general Australian population in terms of distribution by state or territory.^{26,27} We observed some differences, as a greater proportion of the Private Lives 2 sample resided in metropolitan areas, were born in Australia, and reported no religious affiliation, relative to the general Australian population.²⁶ However, these differences may not necessarily be reflective of sampling bias, as similar demographic differences between Australian heterosexual populations and LGBT subpopulations have been reported elsewhere.^{28,29}

The sample for this article was confined to participants who identified as a transgender man or transgender woman. After we excluded cisgender participants, this resulted in a final sample of 169 transgender men and transgender women, aged 18 to 77 years, with a mean age of 40.04 years (SD = 13.99).

Survey

The Private Lives 2 survey assessed a range of health and well-being outcomes.²⁶ Survey items reported on in this article include demographic variables, psychosocial variables, the Kessler Psychological Distress Scale, and the Brief Resilience Scale.

Demographic variables. Participants indicated their gender identity, sexual identity, age, relationship status, religious affiliation (coded as religious or not religious), education (coded as university or not university educated), employment status (coded as working or not working), weekly pretax income, country of birth (coded as Australia or overseas), and their current residential postcode, which was used to categorize residential location (coded as urban or rural).³⁰

Psychosocial variables. We assessed a range of psychosocial variables, including sources of support, LGBT contact, and victimization experiences. Participants were asked “For emotional support would you turn to . . . ?” and were presented with a list of possible sources of support, including their biological family (coded as no or yes), current partner (coded as no or yes), straight friends (coded as no or yes),

and LGBT friends (coded as no or yes). These were computed as separate variables to indicate specific sources of support.

Participants were asked “How often do you have contact with LGBT friends or acquaintances?” Response options included daily, weekly, monthly, annually, and never (later coded as “at least weekly” or “monthly or less”).

Participants indicated whether they had experienced several different forms of victimization on the basis of their sexual or gender identity in the past year. The options included “written threats of abuse including e-mails and graffiti”; “verbal abuse (including hateful or obscene phone calls)”; “harassment such as being spat at and offensive gestures”; “threats of physical violence, physical attacks, or assaults without a weapon (punched, kicked, beaten)”; and “physical attack or assault with a weapon (knife, bottle, stones).” We computed a composite index of victimization to indicate the number of experiences of victimization to which participants had been exposed (coded from 0 to 5).

Kessler Psychological Distress Scale. The Kessler Psychological Distress Scale (K10) is a 10-item scale that assesses an individual’s level of psychological distress.³¹ Participants indicated on a 5-point scale how often they felt 10 affective statements in the past 4 weeks, such as “How often did you feel hopeless?” and “How often did you feel depressed?” We summed scale items to produce a total score with higher scores indicating greater psychological distress. We used commonly accepted cutoffs to identify the proportion of participants who reported high or very high distress.³² The K10 has demonstrated sound reliability and validity.³¹ In the current study, the internal consistency coefficient was $\alpha = 0.93$.

Brief Resilience Scale. The Brief Resilience Scale is a 6-item measure that assesses an individual’s ability to bounce back or recover from challenging life events.³³ On a 5-point scale, participants indicate their agreement with 6 statements, such as “I tend to bounce back quickly after hard times” and “I usually come through difficult times with little trouble.” After reversing negative items, we averaged scale items to produce a mean score. Higher scores indicate higher resilience. The scale has been used in studies with other minority groups,³⁴ and has demonstrated sound validity

and reliability.³³ In the current study, the internal consistency coefficient was $\alpha=0.92$.

Procedure and Data Analysis

Data were collected via an online survey between January 2011 and April 2011. Recruitment was achieved via advertising on the Web sites of LGBT community organizations and via various social media platforms (e.g., Facebook and YouTube). Advertisements were also e-mailed to LGBT community organizations and government departments to be forwarded to their contact lists. Participants were assured of the anonymity of their responses, confidentiality of responses, and voluntary participation before they completed the survey. The survey took an average of 14 minutes to complete.

We computed a demographic profile of the sample in the first instance. Then we determined the proportion of participants who reported high or very high distress. To identify significant factors associated with psychological distress, we first conducted univariable regressions for each demographic and psychosocial variable. We then entered variables that were associated with psychological distress at $P<.15$ into a multivariable regression to assess the individual effect of each variable after adjustment. To identify significant factors associated with resilience, we then conducted the same set of regressions with resilience as the outcome variable. We used Wald tests to assess the overall effect of variables. We excluded participants with missing data on a particular variable from any analysis involving that variable. We set the significance level at $P<.05$, and we conducted all analyses with Stata version 11.1 (StataCorp LP, College Station, TX).

RESULTS

Table 1 displays a demographic profile of the sample. Overall, the sample consisted of more transgender women (72.2%) than transgender men (27.8%). We observed significant variability in sexual identities, with the most common sexual identity being gay or lesbian (27.8%). Almost half of the sample was aged between 30 and 49 years (49.7%). With regard to socioeconomic status, less than half of the sample was university educated (37.3%) or earning AU \$1000 or more per week

(27.5%). However, most participants reported that they were currently employed (61.3%). In regards to religious affiliation, 62.7% of the sample was not religious. Of the sample, 79.1% reported that they were living in an urban area and 76.1% were born in Australia.

In comparison with the demographic distribution of the general Australian population, a greater proportion of the sample were living in an urban area and a greater proportion were university educated.^{36,37} The distributions are similar in terms of the proportions born overseas.³⁸

Factors Associated With Psychological Distress

Of the sample, 46.0% reported high or very high levels of psychological distress according to scores on the K10. As displayed in Table 2, univariable regressions revealed several factors significantly associated with psychological distress. Specifically, distress was significantly greater with younger age ($F_{1, 150} = 6.40$; $P=.01$), not having a university education ($F_{1, 159} = 6.89$; $P=.01$), not turning to family for support ($F_{1, 159} = 8.16$; $P=.01$), having infrequent contact with LGBT friends and acquaintances ($F_{1, 157} = 5.29$; $P=.02$), and reporting a greater number of victimization experiences ($F_{1, 150} = 7.66$; $P=.01$).

Table 2 also displays the results of a multivariable regression. Of all the variables entered into the regression, we found only age ($F_{1, 127} = 4.13$; $P=.04$), turning to family for support ($F_{1, 127} = 4.73$; $P=.03$), and victimization experiences ($F_{1, 127} = 6.11$; $P=.02$) to be significant independent factors. Although education and frequency of contact with LGBT friends and acquaintances were significantly associated with psychological distress in the univariable regressions, they were no longer significant after we statistically controlled for the other variables entered into the multivariable regression equation.

Factors Associated With Resilience

As displayed in Table 3, univariable regressions revealed several factors significantly associated with resilience. Specifically, scores on the Brief Resilience Scale were higher for those who identified as heterosexual ($F_{4, 158} = 2.51$; $P=.04$), had a university education ($F_{1, 161} = 4.18$; $P=.04$), were currently working ($F_{1, 160} = 4.39$; $P=.04$), had

a higher income ($F_{1, 159} = 9.26$; $P=.003$), turned to family for support ($F_{1, 161} = 5.56$; $P=.02$), and reported having frequent contact with LGBT friends and acquaintances ($F_{1, 159} = 9.39$; $P=.003$).

Table 3 also displays the results of a multivariable regression. Of all the variables entered

TABLE 1—Demographic Characteristics of the Sample: Transgender Australians (n = 169) in the Private Lives 2 Survey, 2011

Characteristic	No. (%)
Gender identity	
Trans male	47 (27.8)
Trans female	122 (72.2)
Sexual identity	
Gay or lesbian	47 (27.8)
Bisexual	37 (21.9)
Heterosexual	23 (13.6)
Queer	26 (15.4)
Other	36 (21.3)
Age, y	
18–29	43 (27.0)
30–49	79 (49.7)
50–77	37 (23.3)
Relationship status	
Single	91 (54.2)
In a relationship	77 (45.8)
Religious affiliation	
Not religious	106 (62.7)
Religious	63 (37.3)
Education	
Not university educated	106 (62.7)
University educated	63 (37.3)
Employment status	
Not working	65 (38.7)
Working	103 (61.3)
Weekly income, AU\$ ^a	
0–999	121 (72.5)
≥ 1000	46 (27.5)
Residential location	
Urban	129 (79.1)
Rural or regional	34 (20.9)
Country of birth	
Australia	127 (76.1)
Overseas	40 (24.0)

^aWeekly pretax income. National median weekly income for full-time and part-time workers at time of survey was AU \$900.³⁵

TABLE 2—Univariable and Multivariable Factors Associated With Psychological Distress Among Transgender Australians (n = 169) in the Private Lives 2 Survey: 2011

Variable	Mean	Univariable			Multivariable		
		b (95% CI)	B	P	b (95% CI)	B	P
Gender identity				.99			...
Trans male (Ref)	23.22	...	...		...	...
Trans female	23.20	-0.02 (-3.11, 3.08)	-0.00		...	...
Sexual identity				.61			...
Gay or lesbian	24.36	3.27 (-1.28, 7.82)	0.16		...	...
Bisexual	23.00	1.91 (-2.85, 6.68)	0.09		...	...
Heterosexual (Ref)	21.09	...	...		...	...
Queer	22.23	1.14 (-3.94, 6.23)	0.05		...	...
Other	24.13	3.04 (-1.82, 7.89)	0.14		...	...
Age (18–77 y)	...	-0.13 (-0.23, -0.03)	-0.20*	.01	-0.11 (-0.22, -0.00)	-0.18*	.04
Relationship status				.25			...
Single (Ref)	24.03	...	...		...	...
In a relationship	22.38	-1.65 (-4.45, 1.14)	-0.09		...	...
Religious affiliation				.65			...
Not religious (Ref)	23.45	...	...		...	...
Religious	22.78	-0.67 (-3.58, 2.24)	-0.04		...	...
Education				.01			.19
Not university educated (Ref)	24.59	...	...		...	...
University educated	20.81	-3.77 (-6.61, -0.94)	-0.20**		-2.20 (-5.46, 1.07)	-0.12	
Employment status				.07			.1
Not working (Ref)	24.63	...	...		...	...
Working	22.07	-2.56 (-5.37, 0.25)	-0.14		-2.66 (-5.78, 0.47)	-0.15	
Weekly income (AU\$) ^a				.14			.48
0–999 (Ref)	23.78	...	...		...	...
≥ 1000	21.37	-2.41 (-5.59, 0.76)	-0.12		1.44 (-2.55, 5.44)	0.07	
Residential location				.11			.18
Urban (Ref)	22.82	...	...		...	...
Rural	25.71	2.89 (-0.65, 6.42)	0.13		2.44 (-1.17, 6.05)	0.11	
Country of birth				.45			...
Australia (Ref)	23.55	...	...		...	...
Overseas	22.26	-1.28 (-4.59, 2.03)	-0.06		...	...
Being able to turn to family for support				.01			.03
No (Ref)	24.79	...	...		...	...
Yes	20.75	-4.04 (-6.83, -1.25)	-0.22**		-3.28 (-6.27, -0.30)	-0.18*	
Being able to turn to partner for support				.13			.17
No (Ref)	24.24	...	...		...	...
Yes	22.08	-2.16 (-4.94, 0.62)	-0.12		-2.04 (-4.97, 0.88)	-0.11	
Being able to turn to straight friends for support				.65			...
No (Ref)	23.53	...	...		...	...
Yes	22.89	-0.64 (-3.44, 2.15)	-0.04		...	...
Being able to turn to LGBT friends for support				.96			...
No (Ref)	23.15	...	...		...	...
Yes	23.23	0.08 (-2.91, 3.06)	0.00		...	...

Continued

TABLE 2—Continued

LGBT contact				.02			.15
≤ monthly (Ref)	25.29	...	...		...	...
≥ weekly	21.97	-3.32 (-6.18, -0.47)	-0.18*		-2.28 (-5.40, 0.84)	-0.12	
No. of victimization experiences (0-5)	...	1.59 (0.45, 2.72)	0.22**	.01	1.45 (0.29, 2.62)	0.20*	.02
R ²						0.19	.001

Note. CI = confidence interval; LGBT = lesbian, gay, bisexual, and transgender. Results are from univariable regressions conducted for each demographic and psychosocial variable and a single multivariable regression including variables that were univariately associated with psychological distress at $P < .15$. Age and victimization experiences are continuous variables; all other variables are categorical. The sample size was $n = 137$ for the multivariable regression because of missing data on some variables.

^aWeekly pretax income. National median weekly income for full-time and part-time workers at time of survey was AU \$900.³⁵

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

into the regression, we found only sexual identity ($F_{4, 148} = 3.55$; $P = .01$), income ($F_{1, 148} = 6.20$; $P = .01$), and frequency of contact with LGBT friends and acquaintances ($F_{1, 148} = 7.33$; $P = .01$) to be significant independent factors. Although education, employment, and turning to family for support were significantly associated with resilience in the univariable regressions, these variables were no longer significant after we statistically controlled for the other variables entered into the multivariable regression equation.

DISCUSSION

In this national sample of transgender Australians, several demographic and psychosocial factors were associated with psychological distress and resilience. Interestingly, the factors for psychological distress were markedly different than those for resilience. According to the multivariable analyses, younger age, not turning to family for support, and more experiences of victimization were independently associated with greater psychological distress scores, whereas high income, identifying as heterosexual, and frequent contact with LGBT peers were independently associated with greater resilience scores. These findings suggest that interventions and programs designed to address mental health may need to be targeted and tailored differently to those seeking to build general resilience.

In regards to psychological distress, one important factor to emerge from the present study was social support. Although previous research has shown that social support is an important protective factor for transgender mental health,^{3,4,6,9,10} the relative importance

of different sources of support has not been addressed; thus, the present study has revealed some unique findings in this regard. The findings indicated that, relative to other sources, family of origin may have the most influence in protecting against psychological distress. The protective value of familial support has also been observed among individuals of sexual minority groups.³⁹⁻⁴¹ This finding may be a function of the differing potency of ascribed relationships (family) compared with achieved relationships (friends or partners). Because gender-identity affirmation is less likely to occur within transgender individuals' ascribed relationships,⁴² our findings support a need to encourage family members to be open and receptive sources of support.

In contrast to this finding, none of the sources of support were found to be independently associated with resilience, whereas frequent contact with LGBT peers was revealed as a significant factor. This finding supports the work of qualitative studies that have identified themes of resilience, and other quantitative studies that have identified LGBT community factors as important in protecting against negative psychological outcomes.^{3,18-20,43} It has been proposed that, for marginalized people, identification with similar others allows for the development of a positive in-group identity, encourages positive self-appraisal, and allows access to group-level coping.^{12,13} It is suggested that these processes may facilitate a greater capacity to overcome stress and adversity. Furthermore, for transgender individuals, frequent peer contact may be particularly important for developing individual resilience, as gender transitioning can be a complex and challenging process and having peers who

share similar experiences may provide not only a sense of support and understanding, but also a sense of belonging. Future research could consider whether contact with transgender peers in particular is more protective than contact with LGBT peers in general.

It was not surprising that we also found experience of victimization to be a significant factor of psychological distress. This replicates the findings of previous research showing the detrimental impact of gender-related stigma on the mental health of transgender people.^{3,4,7,10,11,14-16} The negative mental health effects of minority stress on sexual minority individuals is also well established.¹² This finding lends further support to calls for addressing transphobia and gender-related stigmatization at the societal level. In most developed countries, wide-reaching campaigns have been conducted to address homophobia in the case of sexual minorities, but less has been done to address transphobia. It is likely that broader public acceptance of gender variance and transgender identities would reduce instances of harassment, leading to a reduction in minority stress and, with that, an improvement in mental health outcomes.

The finding that psychological distress was greater with younger age is also consistent with previous research on gender minority populations, thus replicating the findings from this work.¹¹ There is a number of possible explanations for this finding. First, previous research has revealed that minority youths are more vulnerable to the negative mental health effects of stigma,^{11,16} with many encountering discrimination and harassment for the first time while they are also in the early stages of forming a minority gender identity. Second,

TABLE 3—Univariable and Multivariable Factors Associated With Resilience Among Transgender Australians (n = 169) in the Private Lives 2 Survey: 2011

Variable	Mean	Univariable			Multivariable		
		b (95% CI)	B	P	b (95% CI)	B	P
Gender identity				.11			.12
Trans male (Ref)	3.26	...	...		...	...
Trans female	2.97	-0.29 (-0.64, 0.06)	-0.13		-0.32 (-0.72, 0.07)	-0.14	
Sexual identity				.04			.01
Gay or lesbian	2.95	-0.43 (-0.95, 0.10)	-0.19		-0.66 (-1.17, -0.15)	-0.29*	
Bisexual	3.24	-0.14 (-0.68, 0.40)	-0.06		-0.30 (-0.84, 0.23)	-0.13	
Heterosexual (Ref)	3.38	...	...		...	...
Queer	3.23	-0.14 (-0.72, 0.44)	-0.05		-0.75 (-1.37, -0.13)	-0.28*	
Other	2.67	-0.70 (-1.25, -0.16)	-0.29*		-0.85 (-1.38, -0.32)	-0.34**	
Age (18–77 y)	...	0.00 (-0.01, 0.02)	0.05	.51	...	...	...
Relationship status				.41			...
Single (Ref)	2.98	...	...		...	...
In a relationship	3.12	0.13 (-0.18, 0.45)	0.07		...	...
Religious affiliation				.83			...
Not religious (Ref)	3.04	...	...		...	...
Religious	3.07	0.03 (-0.29, 0.36)	0.02		...	...
Education				.04			.33
Not university educated (Ref)	2.93	...	...		...	...
University educated	3.26	0.33 (0.01, 0.65)	0.16*		0.16 (-0.16, 0.48)	0.08	
Employment status				.04			.35
Not working (Ref)	2.85	...	...		...	...
Working	3.19	0.34 (0.02, 0.65)	0.16*		0.16 (-0.18, 0.50)	0.08	
Weekly income, AU\$ ^a				.003			.01
0–999 (Ref)	2.91	...	...		...	...
≥ 1000	3.43	0.52 (0.18, 0.86)	0.23**		0.46 (0.10, 0.83)	0.21*	
Residential location				.90			...
Urban (Ref)	3.05	...	...		...	...
Rural	3.02	-0.03 (-0.42, 0.37)	-0.01		...	...
Country of birth				.28			...
Australia (Ref)	3.00	...	...		...	...
Overseas	3.20	0.20 (-0.16, 0.57)	0.09		...	...
Being able to turn to family for support				.02			.11
No (Ref)	2.90	...	...		...	...
Yes	3.28	0.37 (0.06, 0.69)	0.18*		0.24 (-0.06, 0.54)	0.12	
Being able to turn to partner for support				.19			...
No (Ref)	2.95	...	...		...	...
Yes	3.16	0.21 (-0.10, 0.52)	0.10		...	...
Being able to turn to straight friends for support				.11			.25
No (Ref)	2.93	...	...		...	...
Yes	3.17	0.25 (-0.06, 0.56)	0.12		0.17 (-0.12, 0.46)	0.09	
Being able to turn to LGBT friends for support				.73			...
No (Ref)	3.01	...	...		...	...
Yes	3.07	0.06 (-0.28, 0.39)	0.03		...	...

Continued

TABLE 3—Continued

LGBT contact				.003			.01
≤ monthly (Ref)	2.74	...	...		...	...
≥ weekly	3.24	0.49 (0.18, 0.81)	0.24**		0.44 (0.12, 0.76)	0.21**	
No. of victimization experiences (0-5)	...	-0.07 (-0.20, 0.06)	-0.09	.27	...	...	...
R ²						0.23	<.001

Note. CI = confidence interval; LGBT = lesbian, gay, bisexual, and transgender. Results are from univariable regressions conducted for each demographic and psychosocial variable and a single multivariable regression including variables that were univariately associated with resilience at $P < .15$. $N = 160$ for the multivariable regression because of missing data on some variables. Age and victimization experiences are continuous variables, all other variables are categorical.

^aWeekly pretax income. National median weekly income for full-time and part-time workers at time of survey was AU \$900.³⁵

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

research conducted with sexual minority men has shown that minority-identity affirmation (specifically identity pride and identity integration) is an age-related process and is associated with improvements in psychosocial well-being.⁴⁴ Further research is required to determine whether identity affirmation may also help explain the relationship between age and mental health among transgender individuals.

With regard to resilience, 2 further independent factors we found were income and sexual identity. Income is of particular concern for this population because disproportionately high rates of unemployment and low household incomes have been reported among transgender individuals,^{4,45} and low socioeconomic status is an established determinant of psychopathology in this group.^{6,10} The links between income and resilience may be partly attributable to a greater capacity for high income earners to draw on resources to help them overcome life challenges. For transgender individuals, income-related barriers to accessing appropriate health care may be particularly relevant. Costly hormonal gender-affirmation treatments and sex-reassignment surgeries may be unaffordable for transgender individuals who have low incomes. These treatments may be integral to the gender-transitioning process for some transgender individuals, as they can allow individuals to embody or express the gender with which they identify.⁴⁶ Treatment access barriers may inhibit gender-identity affirmation and limit the potential for positive adaptation in the face of gender-related stigma. However, because we did not assess use of gender-affirmation treatments and surgeries in this study, this explanation is tentative and requires further investigation.

The extant diversity and fluidity of sexual identities among transgender people has often been overlooked in the fields of psychology and public health, as sex, gender, sexual orientation, and sexual identity are often erroneously conflated.⁴⁷ The results of this study, and of others,^{9,48} reveal broad diversity in the range of sexual identities of transgender individuals, with significant proportions identifying as heterosexual. Results of the current study also revealed that those who identified as heterosexual reported greater resilience than those who identified as gay or lesbian, queer, or some other identity. Heterosexuality is a known indicator of better mental health in the general population,^{49,50} and it would appear that this is also the case among the transgender population. For those who identify as both a sexual and gender minority, it may be possible that having multiple stigmatized identities results in an additive burden to mental health. Although research that has examined mental health and membership in multiple minority groups has shown mixed support for the additive stress model,^{7,51,52} no known studies, apart from the current one, have examined the effects on resilience of having dual sexual- and gender-minority identities. Further research examining the interaction effect of multiple minority identities on mental health is required to more comprehensively assess the additive stress model in the transgender population.

Taken together, the independent factors for distress and resilience that have been identified by this study allow us to tentatively paint a developmental picture. In the early stages of gender identity development, experiences of victimization may be severe and family support

may be most important in protecting against psychological distress. With age, and as transgender identities become more established, individuals may develop more adaptive coping strategies to deal with hardships, and the importance of LGBT peers may surpass that of family members. Future research employing longitudinal designs will permit assessment of these proposed developmental patterns.

Limitations

The results of this study have revealed some important findings, but the design was not without limitations. First, the composite index we used to assess experiences of victimization did not include experiences of discrimination such as being denied employment, housing, or access to health services. These experiences of discrimination appear to be strongly linked with mental health among transgender individuals.^{3,7} Furthermore, the question addressing experiences of victimization referred to sexual or gender identity, and it was therefore not possible to separate the experience of homophobia from transphobia. In future studies, researchers may wish to consider more fine-grained measures of victimization and discrimination, and should consider assessing homophobia and transphobia separately.

Second, we did not assess use of hormonal or surgical sex-reassignment treatments. Because these treatments are known to have effects on mental health and well-being,^{5,46,53} these are factors that should be considered in future research. Third, because of the small number of trans men recruited into the study, we were unable to conduct analyses separately for the 2 gender-identity groups. Future research should consider assessing mental health risk

and protective factors separately for trans men and trans women to determine whether any differences exist.

Finally, the study relied on a nonprobability sample design and this limits the generalizability of the findings to all transgender individuals. However, it is worth noting that, although population-based random sampling techniques would be preferable, these are not feasible because the transgender population is largely hidden and hard to reach. Although we drew the sample for the study from a national study of LGBT Australians, with relatively proportional representativeness across each jurisdiction, it was limited by its sample size. Furthermore, although the sample of transgender individuals was sufficiently demographically diverse, the sample was not truly representative of the Australian population, as we observed proportional demographic differences. However, this may be reflective of true demographic variation, rather than sampling bias. Of final importance, the cross-sectional design meant that the direction of the relationships was undeterminable. Longitudinal study designs with larger samples of transgender men and women are warranted.

Conclusions

In this national sample of transgender Australians, psychological distress levels were high, and markedly different demographic and psychosocial factors were associated with psychological distress and resilience. In particular, addressing issues concerning gender-related victimization and family support, and ensuring a focus on transgender youths are likely to be important considerations for interventions related to preventing or treating psychological distress. At the same time, targeting low income earners and those with a minority sexual identity may be particularly important to consider for resilience-building interventions. Establishing connections and encouraging more frequent contact with the LGBT community could also be considered a key focus area when addressing resilience.

This is the first study to comprehensively assess the relative contribution of a range of social determinants of both psychological distress and resilience among transgender individuals and the findings have revealed that vulnerability is not evenly distributed across

this heterogeneous group. Thus, the findings of this study may help to inform the development of appropriately targeted and tailored mental health interventions and resilience-building programs for this marginalized population. ■

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W. Leonard, A. Lyons, M. Pitts, and M. Couch designed the study and oversaw data collection. E. Bariola, A. Lyons, and P. Badcock analyzed the data. E. Bariola led the analysis, conducted the literature review, and wrote the first draft of the article. All authors contributed to revisions of the article. E. Bariola finalized the article for submission. All authors approved the final article.

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Human Participant Protection

The study adhered to the ethical guidelines for human participation as specified by the La Trobe University Human Ethics Committee, which granted full approval of the study.

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