Collective Resilience as a Protective Factor for the Mental Health and Well-Being of HIV-Positive Gay Men

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Rates of mental health problems are disproportionately high among HIV-positive gay men. Identifying forms of resilience that help protect mental health is therefore important in understanding ways to reduce these rates. This study examined whether the experience of high collective resilience, that is, participating in a group or community that is perceived to be highly resilient, is linked to better mental health outcomes among HIV-positive gay men. A community-based sample of 357 HIV-positive Australian gay men completed an online survey. This included the Fletcher-Lyons Collective Resilience Scale, which measured perceived collective resilience in a group that men felt was most important to them. Collective resilience was strongly linked to mental health and well-being. Men who reported belonging to a highly resilient group were significantly less likely to experience depression, anxiety, stress, and internalized HIV-related stigma than men who belonged to a less resilient group. They were also more likely to experience positive mental health, life satisfaction, and individual resilience, and gave higher ratings of their overall general health. Those who were unemployed were less likely to report high collective resilience. Belonging to a resilient group or community appears to be a protective factor for the mental health of HIV-positive gay men, which potentially offers new insights into understanding and identifying ways of supporting and improving the lives of this population.

Public Significance Statement
This study suggests that HIV-positive gay men who feel connected to resilient social groups or communities have better mental health outcomes. It highlights the potential role to be played by community programs, social groups, and organizations in supporting the mental health and well-being of this vulnerable population.

Keywords: HIV, gay men, collective resilience, community resilience, mental health

Gay men living with HIV comprise the vast majority of people with HIV (PLHIV) in countries such as the United States, United Kingdom, and Australia (Beyrer et al., 2012; The Kirby Institute, 2015). This is a highly stigmatized group and HIV-positive gay men are known to experience higher rates of depression and anxiety disorders than the general population (Ciesla & Roberts, 2001; Heywood & Lyons, 2016; Lyons, Pitts, & Grierson, 2012; Miners et al., 2014). Indeed, experiences of stigma and discrimination are likely to be major contributors to mental health outcomes in this population (Earnshaw & Chaudoir, 2009). There is also evidence to suggest that rates of mental health problems are higher among HIV-positive gay men compared to HIV-negative gay men (Lyons et al., 2012). Poorer mental health is known to have further specific implications for the health of HIV-positive gay men, with links to lower HIV treatment adherence (Gonzalez, Batchelder, Psaros, & Safren, 2011) and greater disease progression (Crue et al., 2003; Hartzell, Janke, & Weintrob, 2008; Leserman, 2003).

With stigma and discrimination likely to play a role in mental health outcomes, tackling issues of sexuality- and HIV-related stigma needs to remain a priority. However, it often takes considerable time to change the public attitudes and beliefs that underpin stigma (Kurz & Lyons, 2009; Lyons, Clark, Kashima, & Kurz, 2008; Lyons & Kashima, 2003). In the meantime, a focus on individual coping can also be beneficial. Building resilience is one possibility. Studies of the general population show that resilience, or having a capacity to bounce back quickly from challenging life events (Smith et al., 2008), is strongly linked to better mental health and well-being (Davydov, Stewart, Ritchie, & Chaudieu, 2010). Research suggests that this is also likely for HIV-positive gay men (Lyons, Heywood, & Rozbroj, 2016), and some researchers have argued for a “resilience agenda” in addressing high rates of depression and anxiety in this and other PLHIV populations (Earnshaw, Bogart, Dovidio, & Williams, 2013).

While research has focused almost entirely on the resilience of individuals, another form of resilience, known as collective resil-
ience, may also be important. Collective resilience refers to a capacity for a group or community to overcome challenges to its survival or well-being, primarily through having high levels of agency and adaptability (Lyons, Fletcher, & Bariola, 2016). It is a relatively new construct that has its foundations in research on community resilience (Berkes & Ross, 2013; Magis, 2010), but focuses more broadly on all identifiable collectives, such as social groups, neighborhoods, sports clubs, volunteer organizations, or any kind of group or community. It is thought that resilient groups and communities are better than others at fostering mutual support within the group, creating a sense of shared purpose and connectedness, and drawing on each group member’s skills to the benefit of both the group and the individual members (Lyons, Fletcher, et al., 2016; Poortinga, 2012).

Perhaps for these reasons, recent research has demonstrated a link between collective resilience and mental health and well-being. People who belong to a group or community that they perceive as having high collective resilience, especially if that group is important to them, are less likely to experience psychological distress and more likely to experience positive mental health or flourishing (Lyons, Fletcher, et al., 2016). This research has close parallels with other research that has more generally found that the different kinds of groups to which people belong can have major effects on their individual resilience, self-esteem, mental health, and physical health (Jetten, Haslam, Haslam, Dingle, & Jones, 2014). Indeed, this phenomenon has prompted some researchers and theorists to refer to group involvement as a potential “social cure” for a range of health issues (Jetten, Haslam, & Haslam, 2012).

The lesbian, gay, bisexual, transgender, and intersex (LGBTI) and PLHIV communities have long histories of establishing and maintaining groups, such as peak organizations advocating for the rights and welfare of those they represent as well as local support groups, social groups, and online communities (Harris, Fletcher, & Lang, 2011; Roy & Cain, 2001). These groups may be available to many HIV-positive gay men in addition to other groups in the broader community, such as volunteer groups, sporting clubs, or groups at work. While group participation in general can have important health benefits (Jetten et al., 2012), gaining a complete picture of the role of group life in mental health and well-being may need to take account of the degree to which a group or community is perceived as having collective resilience. We know of no existing studies on the potential protective benefit of experiencing high collective resilience among HIV-positive gay men. Groups and communities can vary in resilience (Lyons, Fletcher, et al., 2016). Knowing the degree to which experiences or perceptions of collective resilience are linked with mental health and well-being among HIV-positive gay men may provide new insight into ways of assisting men to acquire psychologically optimal group-level support and belonging.

In this article, we report on findings from a large community-based survey of HIV-positive Australian gay men. Our main aim was to investigate associations of perceived collective resilience with sociodemographics and key aspects of mental health and well-being. We focused on groups that men felt were most important to them and had two objectives: (a) to assess whether men were more or less likely to belong to a group that they perceived as having high collective resilience based on sociodemographic variables and (b) to assess the degree to which the perceived collective resilience of the group predicted men’s mental health and well-being, including self-rated physical health.

Method

Participants

The survey was originally completed by 402 men and women who were living with HIV, resident in Australia, and aged 18 years and older. Of this group, 357 (89%) identified as a gay man and were the focus of this article.

Data Collection

The survey was conducted online from August 2014 to December 2014, and was approved by the Human Ethics Committee of La Trobe University. The survey was promoted throughout Australia on multiple online platforms, including advertisements targeted to PLHIV on Facebook, The Institute of Many (a large and fast-growing Facebook community of PLHIV), and Grindr (a popular dating app for men who have sex with men). The survey was further promoted by HIV organizations. Advertisements were also emailed to a database of PLHIV managed by La Trobe University, which consisted of men who had previously participated in research and who volunteered to be contacted for future research. Upon starting the survey, participants first read background information about the study and indicated their consent to participate. Typical survey completion time was 24 min. No incentives or rewards were offered for completing the survey.

Measures

Sociodemographics. Data were collected on key demographics, including age, highest educational attainment (secondary or below, nonuniversity tertiary, university undergraduate degree, or university postgraduate degree), employment status (coded as full-time, part-time or casual, unemployed, retired, or other), before tax-income, residential location (coded as inner city, suburban, or regional/rural), and country of birth (coded as Australia or overseas). Data were also collected on relationship status (coded as being in an ongoing regular relationship or not in an ongoing regular relationship).

Perceived collective resilience. The Fletcher-Lyons Collective Resilience Scale (FLCRS) was used to measure perceived collective resilience. This is a 5-item scale with high reliability and validity (Lyons, Fletcher, et al., 2016). It specifically assesses group member’s perceptions of the collective resilience of their group. Examples of items include “Our group bounces back from even the most difficult setbacks” and “Our group is able to obtain what it needs to thrive.” Participants think about a group to which they belong that is most important to them and then answer in reference to that group using a 7-point scale from 1 = strongly disagree to 7 = strongly agree. Scores on the five items are summed (possible score range: 5–35), with higher scores indicating higher perceived collective resilience. Nominating the most important group serves an important purpose, as this is a group that is most likely to have an impact on the well-being of an individual (Lyons, Fletcher, et al., 2016). In other words, if a person belongs to a group that is important to them or to their sense of identity,
then conditions within that group are likely to have a greater impact on them than if the group is not important to them (Jetten et al., 2014). In this study, internal reliability (Cronbach’s α) on the FLCRS was 0.95.

**Mental health and well-being.** Several key aspects of mental health and well-being were assessed using standard measures, including symptoms of depression, anxiety, and general stress as well as positive mental health, life satisfaction, individual resilience, internalized HIV-related stigma, and self-rated general health. Details for each measure are provided below.

Symptoms of depression, anxiety, and general stress were assessed using the Depression Anxiety and Stress Scale (DASS-21; Henry & Crawford, 2005; Lovibond & Lovibond, 1995). The scale involves 21 items covering symptoms over the past week using a 4-point scale from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time). Examples of items include “I couldn’t seem to experience any positive feeling at all” (depression subscale), “I felt scared without any good reason” (anxiety subscale), and “I tended to over-react to situations” (stress subscale). Items are summed to produce separate scores for each subscale. These scores were doubled to produce a score between 0 and 42, as recommended by the scale developers for enabling comparisons with norms based on the larger 42-item DASS scale (Lovibond & Lovibond, 1995). Higher scores indicate a greater likelihood of experiencing depression, anxiety, or general stress. Internal reliability for each subscale was 0.95 (depression), 0.85 (anxiety), and 0.89 (stress).

Positive mental health was assessed using the Warwick-Edinburgh Mental Well-being Scale (WEMWBS; Tennant et al., 2007). While the DASS-21 examines the likelihood of experiencing a mental health problem, the WEMWBS specifically examines the likelihood of experiencing high levels of psychological functioning, such as flourishing. The WEMWBS involves 14 items answered in reference to the last 2 weeks using a 5-point scale from 1 = none of the time to 5 = all of the time. Examples of items include “I’ve been feeling optimistic about the future” and “I’ve been able to make up my own mind about things.” Items are summed (possible score range: 14–70), with higher scores indicating a greater likelihood of experiencing positive mental health. Internal reliability for the WEMWBS was 0.95.

Life satisfaction was assessed using the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). Life satisfaction, as an indicator of overall well-being, has been shown to correlate strongly with numerous specific aspects of mental health and well-being (Pavot & Diener, 2008). The SWLS examines the degree to which individuals feel generally satisfied with their lives and involves five items answered on a 7-point scale from 1 = strongly disagree to 7 = strongly agree. Examples include “In most ways, my life is close to my ideal” and “I am satisfied with life”. Scores for each item are summed (possible score range: 5–35), with higher scores indicating greater life satisfaction. Internal reliability for the SWLS was 0.90.

Individual resilience was assessed using the 10-item short form of the Connor-Davidson Resilience Scale (CD-RISC; Campbell-Sills & Stein, 2007; Connor & Davidson, 2003). The CD-RISC specifically assesses an individual’s capacity to adapt to changing circumstances and to overcome challenges and has been shown to have strong psychometric properties (Windle, Bennett, & Noyes, 2011). Participants answer items with a 5-point scale from 0 = not at all to 4 = true nearly all the time. Examples include “I can deal with whatever comes my way” and “I tend to bounce back after illness, injury, or other hardships.” Scores for each item are summed (possible score range: 0–40), with higher scores indicating greater resilience. Internal reliability for the CD-RISC was 0.93.

Internalized HIV-related stigma was assessed using the Internalized AIDS-related Stigma Scale (IA-RSS; Kalichman et al., 2009). The IA-RSS is a 6-item scale that specifically measures aspects of internalized stigma such as concealment and feelings of shame. Examples of items include “Being HIV-positive makes me feel dirty” and “I sometimes feel worthless because I am HIV-positive.” Participants respond to each item with either 1 “Agree” or 0 “Disagree.” Scores are summed (possible score range: 0–6), with higher scores indicating greater internalized stigma. Internal reliability for the IA-RSS was 0.84.

Finally, self-rated general health was assessed using a single-item. Participants were presented with the statement, “How would you rate your current state of physical health?” and responded by selecting either “excellent,” “very good,” “good,” “fair,” or “poor.” This item has high levels of reliability and validity as an overall measure of health, including strong correlations with specific physical illnesses and mortality (DeSalvo, Blesser, Reynolds, He, & Muntner, 2006; Idler & Benyamini, 1997; Shmueli, 1999). Scores range between 1 and 5, with higher scores indicating better health.

**Analysis**

Descriptive statistics were computed for all variables. We first assessed the degree to which perceived collective resilience varied according to sociodemographics. Associations between scores on the FLCRS and the sociodemographic variables were examined in bivariate linear regressions conducted separately for each sociodemographic variable. The sociodemographic variables were also entered into a single multivariable linear regression to identify independent factors associated with the FLCRS. We then assessed associations between perceived collective resilience and the mental health and well-being measures. These were first assessed using bivariate (unadjusted) regressions conducted separately for each mental health and well-being variable, with the FLCRS as the predictor. Given that mental health and resilience among HIV-positive gay men are known to vary according to a wide range of sociodemographics (Heywood & Lyons, 2016; Lyons, Heywood, et al., 2016), we then examined these associations while adjusting for any effect of the sociodemographic variables. Thus, we conducted separate multivariable (adjusted) linear regressions for each mental health and well-being measure, with the FLCRS again as a predictor variable and the sociodemographic variables as control variables. Unstandardized (β) and standardized (β) regression coefficients were computed for all regression analyses. Wald tests were used to assess the overall effect of each categorical variable and overall model statistics are reported for each multivariable regression. Participants were excluded from those analyses in which they had missing data on one or more variables. All analyses were conducted using Stata 14.0 (StataCorp, College Station, TX).
Results

Sample Profile

Table 1 displays numbers and percentages of men for each sociodemographic variable as well as the means and SDs for the FLCRS and each mental health and well-being variable. Of the 357 men who comprised the sample, just over half were aged 30–49 years (52%), worked full-time (53%), reported an annual pretax income of $50,000 or greater (57%), and lived in the inner areas of a capital city (59%). Just over two-fifths were university educated (43%) and close to one-half (47%) reported being in an ongoing regular relationship. A large majority (79%) reported being born in Australia.

In total, 342 (96%) of the participants completed the FLCRS, suggesting that at least this percentage felt connected to one or more groups. Overall, participants scored a little above the midpoint of the FLCRS with a mean score of 25.7. Mean scores of 11.2 on the DASS Depression Subscale, 7.1 on the DASS Anxiety Subscale, and 12.2 on the DASS Stress Subscale were all higher compared with some studies involving general population samples (Henry & Crawford, 2005; Lovibond & Lovibond, 1995). However, scores of 46.2 for positive mental health on the WEMWBS and 20.2 for life satisfaction on the SWLS were generally similar to or slightly lower than studies of other population groups, including general population samples (Pavot & Diener, 2008; Taggart, Stewart-Brown, & Parkinson, 2015). The sample also scored 27.0 for individual resilience on the CD-RISC. A mean score of 2.9 for internalized HIV-related stigma was similar to some other studies of PLHIV using the IA-RSS (Kalichman et al., 2009). The sample reported an average score of 3.6 for self-rated health.

Perceived Collective Resilience and Sociodemographics

We examined associations between perceived collective resilience and the sociodemographic variables, which included age, education, employment status, income, residential location, country of birth, and relationship status. In bivariate regression analyses, scores on the FLCRS were significantly lower for those who reported being unemployed ($M = 21.3$) compared with those who were working full-time ($M = 26.0$), working part-time or casually ($M = 26.5$), were retired ($M = 26.7$), or had some other employment status ($M = 26.2$), $F(4, 335) = 5.27$, $p < .001$. None of the other variables were significantly associated with the FLCRS. The sociodemographic variables were then entered into a multivariable analysis to identify significant independent factors associated with collective resilience. These sociodemographic variables were first checked for multicollinearity. No problems were found, with all variance inflation factors < 5 and all tolerance scores > .20 (O’Brien, 2007). Again, only employment status emerged as a significant independent factor, $F(4, 307) = 3.11$, $p = .02$. No other sociodemographic variables were significantly associated with the FLCRS. Overall model fit for the multivariable regression was $R^2 = .09$, $F(16, 307) = 1.84$, $p = .03$.

Perceived Collective Resilience, Mental Health, and Well-Being

Table 2 displays associations between scores on the FLCRS and each mental health and well-being variable. As shown, the FLCRS was significantly associated with all mental health and well-being variables in the bivariate (unadjusted) analyses, namely depression, $F(1, 340) = 44.45$, $p < .001$, anxiety, $F(1, 340) = 9.76$, $p = .002$, general stress, $F(1, 340) = 18.54$, $p < .001$, positive mental health, $F(1, 340) = 26.5$, $p < .001$, individual resilience, $F(1, 340) = 88.07$, $p < .001$, life satisfaction, $F(1, 339) = 73.86$, $p < .001$, internalized HIV-related stigma, $F(1, 335) = 11.55$, $p < .001$, and self-rated health, $F(1, 340) = 16.97$, $p < .001$.
Separate multivariable linear regressions were also conducted for each mental health and well-being variable that adjusted for sociodemographic variables. Depression = Depression Anxiety Stress Scale (DASS)–Depression Subscale; Anxiety = Depression Anxiety Stress Scale (DASS)–Anxiety Subscale; General stress = Depression Anxiety Stress Scale (DASS)–General Stress Subscale; Positive mental health = Warwick Edinburgh Mental Well-being Scale (WEMWBS); Individual resilience = Connor-Davidson Resilience Scale (CD-RISC); Satisfaction with life = Satisfaction with Life Scale (SWLS); Internalized HIV-related stigma = Internalized AIDS-related Scale (IA-RSS).

**Table 2**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Unadjusted regression coefficients for collective resilience</th>
<th>Adjusted regression coefficients for collective resilience</th>
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<tbody>
<tr>
<td></td>
<td>B</td>
<td>β</td>
</tr>
<tr>
<td>Depression</td>
<td>−.18</td>
<td>−.34</td>
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<tr>
<td>Anxiety</td>
<td>−.12</td>
<td>−.17</td>
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<tr>
<td>General stress</td>
<td>−.15</td>
<td>−.23</td>
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<tr>
<td>Positive mental health</td>
<td>.24</td>
<td>.43</td>
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<tr>
<td>Individual resilience</td>
<td>.36</td>
<td>.45</td>
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<tr>
<td>Satisfaction with life</td>
<td>.33</td>
<td>.42</td>
</tr>
<tr>
<td>Internalized HIV-related stigma</td>
<td>−.52</td>
<td>−.18</td>
</tr>
<tr>
<td>Self-rated health</td>
<td>1.32</td>
<td>.22</td>
</tr>
</tbody>
</table>

* Results are from separate bivariate regressions conducted for each mental health and well-being measure. * Results are from separate multivariable regressions conducted for each mental health and well-being measure that also adjusted for all sociodemographic variables. Depressione = Depression Anxiety Stress Scale (DASS)–Depression Subscale; Anxiety = Depression Anxiety Stress Scale (DASS)–Anxiety Subscale; General stress = Depression Anxiety Stress Scale (DASS)–General Stress Subscale; Positive mental health = Warwick Edinburgh Mental Well-being Scale (WEMWBS); Individual resilience = Connor-Davidson Resilience Scale (CD-RISC); Satisfaction with life = Satisfaction with Life Scale (SWLS); Internalized HIV-related stigma = Internalized AIDS-related Scale (IA-RSS).

**Discussion**

Perceived collective resilience was strongly linked with a range of mental health and well-being measures in this national community-based sample of HIV-positive gay men. These men reported on the most important group to which they belonged. Based on our findings, experiencing this group as highly resilient is a potential protective factor for mental health and well-being, including self-assessed general health. No other studies have examined collective resilience in LGBTI or PLHIV populations. However, broader literature on group and/or community resilience suggests that resilient groups may be better at providing a range of social benefits, such as long-term mutual support, a stable shared identity, and a sense of collective purpose and belonging (Lyons, Fletcher, et al., 2016; Poortinga, 2012). Access to these benefits may be particularly advantageous to stigmatized groups, such as HIV-positive gay men, who can otherwise feel marginalized or unsupported in the general community (Australasian Society for HIV Viral Hepatitis and Sexual Health Medicine, & National Centre in HIV Social Research, 2012). This might further explain our finding that belonging to a resilient group was associated with lower internalized HIV-related stigma. It may be that access to a stable sense of shared identity, support, and other social benefits of a resilient group further help to mitigate any feelings of shame or low self-worth that are often symptoms of internalized stigma.

There is potentially an important role to play for LGBTI and PLHIV organizations in providing access to collective resilience. We did not ask the men to name the specific group to which they belonged but, given the many support and social groups that make up the LGBTI and PLHIV communities, it is likely that some men were members of such groups. In Australia, a number of national and state-based groups and organizations have existed for several decades and many are likely to have developed resilience in the face of challenges, such as community opposition or difficulties with funding. From our findings, it is possible that members of these groups have better health and well-being outcomes. It is also worth noting that associations between collective resilience and health and well-being can apply to a wide range of groups, including primarily task-focused groups (e.g., volunteer organizations) and primarily social-focused groups (e.g., a support group; Lyons, Fletcher, et al., 2016). Focusing on the foundations of collective resilience in the development and maintenance of community groups, such as developing strategies to enable greater group-level agency and adaptability (Lyons, Fletcher, et al., 2016), may not only assist in sustaining these groups and the purposes they serve, but may also provide more stable social identities and mutual support that are known to be health-promoting “social cures” (Jetten et al., 2012).

On an individual level, support workers and health professionals who are in contact with HIV-positive gay men may wish to include a focus on social connectedness. Asking men to identify groups that they perceive as resilient, and encouraging or supporting their involvement in these groups, could be one way of further building protective factors in the lives of these men. While it is common for mental health interventions to encourage social participation (Kawachi & Berkman, 2001; Newlin, Webber, Morris, & Howarth, 2015), there appears to be less awareness of the possible health benefits from belonging to specific kinds of groups (Jetten et al., 2014). It may also be worth giving attention to men who are unemployed. Employment status was the only sociodemographic variable linked with perceived collective resilience, where those who were unemployed had significantly lower FLCRS scores. Unemployment can be highly stigmatized (O’Donnell, Corrigan, & Gallagher, 2015), which may have resulted in some of these men being further marginalized and therefore having potentially fewer opportunities for belonging to resilient groups. A focus on...
these men may therefore be important when considering the role of social participation in health outcomes among HIV-positive gay men.

Limitations and Future Directions

There were a few limitations to this study. First, our findings were from cross-sectional data. Links between variables are associations only and do not provide information on directions of causality. For example, it may be possible that some groups have become collectively resilient as a result of having members with high levels of individual resilience. It may also be possible that, in some cases, individuals who are experiencing poor mental health may generally perceive the world around them negatively and therefore undermine the resilience of their group. While these directions of causality remain possible, modeling of links between collective resilience, individual resilience, and mental health indicate a strong likelihood that collective resilience functions to support individual resilience and mental health (Lyons, Fletcher, et al., 2016). However, longitudinal studies are still required to specifically test and confirm directions of causality. In the meantime, our study ought to be viewed as an initial test of collective resilience in relation to the mental health and well-being of HIV-positive gay men until firmer conclusions are possible using prospective data.

The survey was further limited to a community-based sample of HIV-positive Australian gay men. Although the sample was relatively large, we do not know whether it was representative of all HIV-positive Australian gay men given that population-based data is not currently available for this group. However, the sample was diverse and covered many major demographic categories. Given the strength of the associations we found between perceived collective resilience and the mental health and well-being variables, it is perhaps also unlikely that entirely different results would be found with further sampling. That said, future studies are needed to corroborate our findings with additional samples and to test directions of causality. Further studies are also needed in other countries to test wider generalizability. Studies are further needed of HIV-negative gay men to test the degree to which our findings are specific to those living with HIV or generalize to other gay men. Finally, as mentioned earlier, we did not ask the men to specify the groups to which they belonged. While longitudinal studies are needed to test directions of causality between variables, findings from this study give some indication that collective resilience may act as a protective factor for the mental health and well-being of HIV-positive gay men and may therefore warrant further consideration in both research and practical strategies aimed at improving quality of life in this population.

References


