



Published in final edited form as:

Psychol Bull. 2003 September ; 129(5): 674–697.

Prejudice, Social Stress, and Mental Health in Lesbian, Gay, and Bisexual Populations: Conceptual Issues and Research Evidence

Ilan H. Meyer

Columbia University

Abstract

In this article the author reviews research evidence on the prevalence of mental disorders in lesbians, gay men, and bisexuals (LGBs) and shows, using meta-analyses, that LGBs have a higher prevalence of mental disorders than heterosexuals. The author offers a conceptual framework for understanding this excess in prevalence of disorder in terms of *minority stress*—explaining that stigma, prejudice, and discrimination create a hostile and stressful social environment that causes mental health problems. The model describes stress processes, including the experience of prejudice events, expectations of rejection, hiding and concealing, internalized homophobia, and ameliorative coping processes. This conceptual framework is the basis for the review of research evidence, suggestions for future research directions, and exploration of public policy implications.

The study of mental health of lesbian, gay, and bisexual (LGB) populations has been complicated by the debate on the classification of homosexuality as a mental disorder during the 1960s and early 1970s. That debate posited a gay-affirmative perspective, which sought to declassify homosexuality, against a conservative perspective, which sought to retain the classification of homosexuality as a mental disorder (Bayer, 1981). Although the debate on classification ended in 1973 with the removal of homosexuality from the second edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 1973)*, its heritage has lasted. This heritage has tainted discussion on mental health of lesbians and gay men by associating—even equating—claims that LGB people have higher prevalences of mental disorders than heterosexual people with the historical antigay stance and the stigmatization of LGB persons (Bailey, 1999).

However, a fresh look at the issues should make it clear that whether LGB populations have higher prevalences of mental disorders is unrelated to the classification of homosexuality as a mental disorder. A retrospective analysis would suggest that the attempt to find a scientific answer in that debate rested on flawed logic. The debated scientific question was, Is homosexuality a mental disorder? The operationalized research question that pervaded the debate was, Do homosexuals have high prevalences of mental disorders? But the research did not accurately operationalize the scientific question. The question of whether homosexuality should be considered a mental disorder is a question about classification. It can be answered by debating which behaviors, cognitions, or emotions should be considered indicators of a mental disorder (American Psychiatric Association, 1994). To use postmodernist understanding of scientific knowledge, such a debate on classification concerns the social construction of mental disorder—what we as a society and as scientists agree are abnormal behaviors, cognitions, and emotions. The answer, therefore, depends on scientific and social consensus that evolves and is subject to the vicissitudes of social change (Gergen, 1985, 2001).

This distinction between prevalences of mental disorders and classification in the *DSM* was apparent to Marmor (1980), who in an early discussion of the debate said,

The basic issue ... is not whether some or many homosexuals can be found to be neurotically disturbed. In a society like ours where homosexuals are uniformly treated with disparagement or contempt—to say nothing about outright hostility—it would be surprising indeed if substantial numbers of them did *not* suffer from an impaired self-image and some degree of unhappiness with their stigmatized status. ... It is manifestly unwarranted and inaccurate, however, to attribute such neuroticism, when it exists, to intrinsic aspects of homosexuality itself. (p. 400)

If LGB people are indeed at risk for excess mental distress and disorders due to social stress, it is important to understand this risk, as well as factors that ameliorate stress and contribute to mental health. Only with such understanding can psychologists, public health professionals, and public policymakers work toward designing effective prevention and intervention programs. The relative silence of psychiatric epidemiological literature regarding the mental health of LGB populations may have aimed to remove stigma, but it has been misguided, leading to the neglect of this important issue.

Recently, researchers have returned to the study of mental health of LGB populations. Evidence from this research suggests that compared with their heterosexual counterparts, gay men and lesbians suffer from more mental health problems including substance use disorders, affective disorders, and suicide (Cochran, 2001; Gilman et al., 2001; Herrell et al., 1999; Sandfort, de Graaf, Bijl, & Schnabel, 2001). Researchers' preferred explanation for the cause of the higher prevalence of disorders among LGB people is that stigma, prejudice, and discrimination create a stressful social environment that can lead to mental health problems in people who belong to stigmatized minority groups (Friedman, 1999). This hypothesis can be described in terms of *minority stress* (Brooks, 1981; Meyer, 1995). In this article I review research evidence on prevalences of mental disorders and show, using meta-analyses, that LGB people have higher prevalences of mental disorders than heterosexual people. I offer a conceptual framework for understanding this excess in prevalence of disorder in terms of minority stress. The model describes stress processes, including the experience of prejudice events, expectations of rejection, hiding and concealing, internalized homophobia, and ameliorative coping processes. This conceptual framework is the basis for a review of research evidence, suggestions for future research directions, and exploration of public policy implications.

The Stress Concept

In its most general form, recent stress discourse has been concerned with external events or conditions that are taxing to individuals and exceed their capacity to endure, therefore having potential to induce mental or somatic illness (Dohrenwend, 2000). Stress can be described as “any condition having the potential to arouse the adaptive machinery of the individual” (Pearlin, 1999a, p. 163). This general form also reflects the phenomenological meaning of *stress*, which refers to physical, mental, or emotional pressure, strain, or tension (Random House Webster's Dictionary, 1992). Some have used an engineering analogy, explaining that stress can be assessed as a load relative to a supportive surface (Wheaton, 1999). Stress researchers have identified both individual and social stressors. In psychological literature, stressors are defined as events and conditions (e.g., losing a job, death of an intimate) that cause change and that require that the individual adapt to the new situation or life circumstance. Stress researchers have studied traumatic events, eventful life stressors, chronic stress, and role strains, as well as daily hassles and even nonevents as varied components of stress (Dohrenwend, 1998a).

The concept of social stress extends stress theory by suggesting that conditions in the social environment, not only personal events, are sources of stress that may lead to mental and physical ill effects. Social stress might therefore be expected to have a strong impact in the lives of people belonging to stigmatized social categories, including categories related to socioeconomic status, race/ethnicity, gender, or sexuality. According to these formulations, prejudice and discrimination related to low socioeconomic status, racism, sexism, or homophobia—much like the changes precipitated by personal life events that are common to all people—can induce changes that require adaptation and can therefore be conceptualized as stressful (Allison, 1998; Barnett, Biener, & Baruch, 1987; Clark, Anderson, Clark, & Williams, 1999; Meyer, 1995; Mirowsky & Ross, 1989; Pearlin, 1999b).

The notion that stress is related to social structures and conditions is at once intuitively appealing and conceptually difficult. It is appealing because it recalls the commonplace experience that environmental and social conditions can be stressful. Also, it rests on rich foundations of psychological and sociological theory that suggest the person must be seen in his or her interactions with the social environment (Allport, 1954). It is conceptually difficult because the notion of stress, in particular as conceived of by Lazarus and Folkman (1984), has focused on personal rather than social elements (Hobfoll, 1998). I return to the discussion of this tension between the social and the personal, or objective and subjective, conceptualizations of stress.

Minority Stress

One elaboration of social stress theory may be referred to as *minority stress* to distinguish the excess stress to which individuals from stigmatized social categories are exposed as a result of their social, often a minority, position. The foundation for a model of minority stress is not found in one theory, nor is the term *minority stress* commonly used. Rather, a minority stress model is inferred from several sociological and social psychological theories. Relevant theories discuss the adverse effect of social conditions, such as prejudice and stigma, on the lives of affected individuals and groups (e.g., Allport, 1954; Crocker, Major, & Steele, 1998; Goffman, 1963; Jones et al., 1984; Link & Phelan, 2001).

Social theorists have been concerned with the alienation from social structures, norms, and institutions. For example, the importance of social environment was central to Durkheim's (1951) study of normlessness as a cause of suicide. According to Durkheim, people need moral regulation from society to manage their own needs and aspirations. Anomie, a sense of normlessness, lack of social control, and alienation can lead to suicide because basic social needs are not met. Pearlin (1982) has emphasized the relevance of Merton's (1957/1968) work to stress theory, explaining that "according to Merton, society stands as a stressor ... by stimulating values that conflict with the structures in which they are to be acted upon" (p. 371). The minority person is likely to be subject to such conflicts because dominant culture, social structures, and norms do not typically reflect those of the minority group. An example of such a conflict between dominant and minority groups is the lack of social institutions akin to heterosexual marriage offering sanction for family life and intimacy of LGB persons. More generally, Moss (1973) explained that interactions with society provide the individual with information on the construction of the world; health is compromised when such information is incongruent with the minority person's experience in the world.

Social psychological theories provide a rich ground for understanding intergroup relations and the impact of minority position on health. Social identity and self-categorization theories extend psychological understanding of intergroup relations and their impact on the self. These theories posit that the process of categorization (e.g., distinction among social groups) triggers important intergroup processes (e.g., competition and discrimination) and provides an anchor for group and self-definition (Tajfel & Turner, 1986; Turner, 1999). From a different

perspective, social comparison and symbolic interaction theorists view the social environment as providing people with meaning to their world and organization to their experiences (Stryker & Statham, 1985). Interactions with others are therefore crucial for the development of a sense of self and well-being. Cooley (1902/1922) referred to the other as the “looking glass” (p. 184) of the self. Symbolic interaction theories thus suggest that negative regard from others leads to negative self-regard. Similarly, the basic tenet of social evaluation theory is that human beings learn about themselves by comparing themselves with others (Pettigrew, 1967). Both these theoretical perspectives suggest that negative evaluation by others—such as stereotypes and prejudice directed at minority persons in society—may lead to adverse psychological outcomes. Similarly, Allport (1954) described prejudice as a noxious environment for the minority person and suggested that it leads to adverse effects. In discussing these effects, which he called “traits due to victimizations,” (p. 142) Allport (1954) suggested that the relationship between negative regard from others and harm to the minority person is self-evident: “One’s reputation, whether false or true, cannot be hammered, hammered, hammered, into one’s head without doing something to one’s character” (p. 142).

Beyond theoretical variations, a unifying concept may emerge from stress theory. Lazarus and Folkman (1984) described a conflict or “mismatch” (p. 234) between the individual and his or her experience of society as the essence of all social stress, and Pearlin (1999b) described ambient stressors as those that are associated with position in society. More generally, Selye (1982) described a sense of harmony with one’s environment as the basis of healthy living; deprivation of such a sense of harmony may be considered the source of minority stress. Certainly, when the individual is a member of a stigmatized minority group, the disharmony between the individual and the dominant culture can be onerous and the resultant stress significant (Allison, 1998; Clark et al., 1999). I discuss other theoretical orientations that help explain minority stress below in reviewing specific minority stress processes.

American history is rife with narratives recounting the ill effects of prejudice toward members of minority groups and of their struggles to gain freedom and acceptance. That such conditions are stressful has been suggested regarding various social categories, in particular for groups defined by race/ethnicity and gender (Barnett & Baruch, 1987; Mirowsky & Ross, 1989; Pearlin, 1999b; Swim, Hyers, Cohen, & Ferguson, 2001). The model has also been applied to groups defined by stigmatizing characteristics, such as heavyweight people (Miller & Myers, 1998), people with stigmatizing physical illnesses such as AIDS and cancer (Fife & Wright, 2000), and people who have taken on stigmatizing marks such as body piercing (Jetten, Branscombe, Schmitt, & Spears, 2001). Yet, it is only recently that psychological theory has incorporated these experiences into stress discourse explicitly (Allison, 1998; Miller & Major, 2000). There has been increased interest in the minority stress model, for example, as it applies to the social environment of Blacks in the United States and their experience of stress related to racism (Allison, 1998; Clark et al., 1999).

In developing the concept of minority stress, researchers’ underlying assumptions have been that minority stress is (a) unique—that is, minority stress is additive to general stressors that are experienced by all people, and therefore, stigmatized people are required an adaptation effort above that required of similar others who are not stigmatized; (b) chronic—that is, minority stress is related to relatively stable underlying social and cultural structures; and (c) socially based—that is, it stems from social processes, institutions, and structures beyond the individual rather than individual events or conditions that characterize general stressors or biological, genetic, or other nonsocial characteristics of the person or the group.

Reviewing the literature on stress and identity, Thoits (1999) called the investigation of stressors related to minority identities a “crucial next step” (p. 361) in the study of identity and stress. Applied to lesbians, gay men, and bisexuals, a minority stress model posits that sexual

prejudice (Herek, 2000) is stressful and may lead to adverse mental health outcomes (Brooks, 1981; Cochran, 2001; DiPlacido, 1998; Krieger & Sidney, 1997; Mays & Cochran, 2001; Meyer, 1995).

Minority Stress Processes in LGB Populations

There is no consensus about specific stress processes that affect LGB people, but psychological theory, stress literature, and research on the health of LGB populations provide some ideas for articulating a minority stress model. I suggest a distal–proximal distinction because it relies on stress conceptualizations that seem most relevant to minority stress and because of its concern with the impact of external social conditions and structures on individuals. Lazarus and Folkman (1984) described social structures as “distal concepts whose effects on an individual depend on how they are manifested in the immediate context of thought, feeling, and action—the proximal social experiences of a person’s life” (p. 321). Distal social attitudes gain psychological importance through cognitive appraisal and become proximal concepts with psychological importance to the individual. Crocker et al. (1998) made a similar distinction between objective reality, which includes prejudice and discrimination, and “states of mind that the experience of stigma may create in the stigmatized” (p. 516). They noted that “states of mind have their grounding in the realities of stereotypes, prejudice, and discrimination” (Crocker et al., 1998, p. 516), again echoing Lazarus and Folkman’s conceptualization of the proximal, subjective appraisal as a manifestation of distal, objective environmental conditions. I describe minority stress processes along a continuum from distal stressors, which are typically defined as objective events and conditions, to proximal personal processes, which are by definition subjective because they rely on individual perceptions and appraisals.

I have previously suggested three processes of minority stress relevant to LGB individuals (Meyer, 1995; Meyer & Dean, 1998). From the distal to the proximal they are (a) external, objective stressful events and conditions (chronic and acute), (b) expectations of such events and the vigilance this expectation requires, and (c) the internalization of negative societal attitudes. Other work, in particular psychological research in the area of disclosure, has suggested that at least one more stress process is important: concealment of one’s sexual orientation. Hiding of sexual orientation can be seen as a proximal stressor because its stress effect is thought to come about through internal psychological (including psychoneuroimmunological) processes (Cole, Kemeny, Taylor, & Visscher, 1996a, 1996b; DiPlacido, 1998; Jourard, 1971; Pennebaker, 1995).

Distal minority stressors can be defined as objective stressors in that they do not depend on an individual’s perceptions or appraisals—although certainly their report depends on perception and attribution (Kobrynowicz & Branscombe, 1997; Operario & Fiske, 2001). As objective stressors, distal stressors can be seen as independent of personal identification with the assigned minority status (Diamond, 2000). For example, a woman may have a romantic relationship with another woman but not identify as a lesbian (Laumann, Gagnon, Michael, & Michaels, 1994). Nevertheless, if she is perceived as a lesbian by others, she may suffer from stressors associated with prejudice toward LGB people (e.g., antigay violence). In contrast, the more proximal stress processes are more subjective and are therefore related to self-identity as lesbian, gay, or bisexual. Such identities vary in the social and personal meanings that are attached to them and in the subjective stress they entail. Minority identity is linked to a variety of stress processes; some LGB people, for example, may be vigilant in interactions with others (expectations of rejection), hide their identity for fear of harm (concealment), or internalize stigma (internalized homophobia).

Stress-Ameliorating Factors

As early as 1954, Allport suggested that minority members respond to prejudice with coping and resilience. Modern writers have agreed that positive coping is common and beneficial to members of minority groups (Clark et al., 1999). Therefore, minority status is associated not only with stress but with important resources such as group solidarity and cohesiveness that protect minority members from the adverse mental health effects of minority stress (Branscombe, Schmitt, & Harvey, 1999; Clark et al., 1999; Crocker & Major, 1989; Kessler, Price, & Wortman, 1985; Miller & Major, 2000; Postmes & Branscombe, 2002; Shade, 1990). Empirical evidence supports these contentions. For example, in a study of Black participants Branscombe, Schmitt, and Harvey (1999) found that attributions of prejudice were directly related to negative well-being and hostility toward Whites but also, through the mediating role of enhanced in-group identity, to positive well-being. In a separate study, Postmes and Branscombe (2002) found that among Blacks, a racially segregated environment contributed to greater in-group acceptance and improved well-being and life satisfaction.

The importance of coping with stigma has also been asserted in LGB populations. Weinberg and Williams (1974) noted that “occupying a ‘deviant status’ need not necessarily intrude upon [gay men’s] day-to-day functioning” (p. 150) and urged scientists to “pay more attention to the human capacity for adaptation” (p. 151). Through coming out, LGB people learn to cope with and overcome the adverse effects of stress (Morris, Waldo, & Rothblum, 2001). Thus, stress and resilience interact in predicting mental disorder. LGB people counteract minority stress by establishing alternative structures and values that enhance their group (Crocker & Major, 1989; D’Emilio, 1983). In a similar vein, Garnets, Herek, and Levy (1990) suggested that although antigay violence creates a crisis with potential adverse mental health outcomes, it also presents “opportunities for subsequent growth” (p. 367). Among gay men, personal acceptance of one’s gay identity and talking to family members about AIDS showed the strongest positive associations with concurrent measures of support and changes in support satisfaction (Kertzner, 2001). Similarly, in a study of LGB adolescents, family support and self-acceptance ameliorated the negative effect of antigay abuse on mental health outcomes (Hershberger & D’Augelli, 1995).

A distinction between personal and group resources is often not addressed in the coping literature. It is important to distinguish between resources that operate on the individual level (e.g., personality), in which members of minority groups vary, and resources that operate on a group level and are available to all minority members (Branscombe & Ellemers, 1998). Like other individuals who cope with general stress, LGB people use a range of personal coping mechanisms, resilience, and hardiness to withstand stressful experiences (Antonovsky, 1987; Masten, 2001; Ouellette, 1993). But in addition to such personal coping, group-level social structural factors can have mental health benefits (Peterson, Folkman, & Bakeman, 1996). Jones et al. (1984) described two functions of coping achieved through minority group affiliations: to allow stigmatized persons to experience social environments in which they are not stigmatized by others and to provide support for negative evaluation of the stigmatized minority group. Social evaluation theory suggests another plausible mechanism for minority coping (Pettigrew, 1967). Members of stigmatized groups who have a strong sense of community cohesiveness evaluate themselves in comparison with others who are like them rather than with members of the dominant culture. The in-group may provide a reappraisal of the stressful condition, yielding it less injurious to psychological well-being. Through reappraisal, the in-group validates deviant experiences and feelings of minority persons (Thoits, 1985). Indeed, reappraisal is at the core of gay-affirmative, Black, and feminist psychotherapies that aim to empower the minority person (Garnets & Kimmel, 1991; hooks, 1993; Shade, 1990; Smith & Siegel, 1985).

The distinction between personal and group-level coping may be somewhat complicated because even group-level resources (e.g., services of a gay-affirmative church) need to be accessed and used by individuals. Whether individuals can access and use group-level resources depends on many factors, including personality variables. Nevertheless, it is important to distinguish between group-level and personal resources because when group-level resources are absent, even otherwise-resourceful individuals have deficient coping. Group-level resources may therefore define the boundaries of individual coping efforts. Thus, *minority coping* may be conceptualized as a group-level resource, related to the group's ability to mount self-enhancing structures to counteract stigma. This formulation highlights the degree to which minority members may be able to adopt some of the group's self-enhancing attitudes, values, and structures rather than the degree to which individuals vary in their personal coping abilities. Using this distinction, it is conceivable that an individual may have efficient personal coping resources but lack minority-coping resources. For example, a lesbian or gay member of the U.S. Armed Forces, where a "don't ask, don't tell" policy discourages affiliation and attachments with other LGB persons, may be unable to access and use group-level resources and therefore be vulnerable to adverse health outcomes, regardless of his or her personal coping abilities. Finally, it is important to note that coping can also have a stressful impact (Miller & Major, 2000). For example, concealing one's stigma is a common way of coping with stigma and avoiding negative regard, yet it takes a heavy toll on the person using this coping strategy (Smart & Wegner, 2000).

Stress and Identity

Characteristics of minority identity—for example, the prominence of minority identity in the person's sense of self—may also be related to minority stress and its impact on health outcomes. Group identities are essential for individual emotional functioning, as they address conflicting needs for individuation and affiliation (Brewer, 1991). Characteristics of identity may be related to mental health both directly and in interaction with stressors. A direct effect suggests that identity characteristics can cause distress. For example, Burke (1991) said that feedback from others that is incompatible with one's self-identity—a process he called *identity interruptions*—can cause distress. An interactive effect with stress suggests that characteristics of identity would modify the effect of stress on health outcomes. For example, Linville (1987) found that participants with more complex self-identities were less prone to depression in the face of stress. Thoits (1999) explained, "Since people's self conceptions are closely linked to their psychological states, stressors that damage or threaten self concepts are likely to predict emotional problems" (p. 346). On the other hand, as described above, minority identity may also lead to stronger affiliations with one's community, which may in turn aid in buffering the impact of stress (Branscombe, Schmitt, & Harvey, 1999; Brown, Sellers, Brown, & Jackson, 1999; Crocker & Major, 1989).

Prominence (or salience), valence, and level of integration with the individual's other identities may be relevant to stress (Deaux, 1993; Rosenberg & Gara, 1985; Thoits, 1991, 1999). Prominence of identity may exacerbate stress because "the more an individual identifies with, is committed to, or has highly developed self-schemas in a particular life domain, the greater will be the emotional impact of stressors that occur in that domain" (Thoits, 1999, p. 352). In coming out models, and in some models of racial identity, there has been a tendency to see minority identity as prominent and ignore other personal and social identities (Cross, 1995; de Monteflores & Schultz, 1978; Eliason, 1996). However minority identities, which may seem prominent to observers, are often not endorsed as prominent by minority group members themselves, leading to variability in identity hierarchies of minority persons (Massey & Ouellette, 1996). For example, Brooks (1981) noted that the stress process for lesbians is complex because it involves both sexual and gender identities. LGB members of racial/ethnic minorities also need to manage diverse identities. Research on Black and Latino LGB

individuals has shown that they often confront homophobia in their racial/ethnic communities and alienation from their racial/ethnic identity in the LGB community (Diaz, Ayala, Bein, Jenne, & Marin, 2001; Espin, 1993; Loiacano, 1993). Rather than view identity as stable, researchers now view identity structures as fluid, with prominence of identity often shifting with social context (Brewer, 1991; Crocker & Quinn, 2000; Deaux & Ethier, 1998).

Valence refers to the evaluative features of identity and is tied to self-validation. Negative valence has been described as a good predictor of mental health problems, with an inverse relationship to depression (Allen, Woolfolk, Gara, & Apter, 1999; Woolfolk, Novalany, Gara, Allen, & Polino, 1995). Identity valence is a central feature of coming out models, which commonly describe progress as improvement in self-acceptance and diminishment of internalized homophobia. Thus, overcoming negative self-evaluation is the primary aim of the LGB person's development in coming out and is a central theme of gay-affirmative therapies (Coleman, 1981–1982; Diaz et al., 2001; Loiacano, 1993; Malyon, 1981–1982; Meyer & Dean, 1998; Rotheram-Borus & Fernandez, 1995; Troiden, 1989).

Finally, more complex identity structures may be related to improved health outcomes. Distinct identities are interrelated through a hierarchal organization (Linville, 1987; Rosenberg & Gara, 1985). In coming out models, integration of the minority identity with the person's other identities is seen as the optimal stage related to self-acceptance. For example, Cass (1979) saw the last stage of coming out as an *identity synthesis*, wherein the gay identity becomes merely one part of this integrated total identity. In an optimal identity development, various aspects of the person's self, including but not limited to other minority identities such as those based on gender or race/ethnicity, are integrated (Eliason, 1996).

Summary: A Minority Stress Model

Using the distal–proximal distinction, I propose a minority stress model that incorporates the elements discussed above. In developing the model I have emulated Dohrenwend's (1998b, 2000) stress model to highlight minority stress processes. Dohrenwend (1998b, 2000) described the stress process within the context of strengths and vulnerabilities in the larger environment and within the individual. For the purpose of succinctness, I include in my discussion only those elements of the stress process unique to or necessary for the description of minority stress. It is important to note, however, that these omitted elements—including advantages and disadvantages in the wider environment, personal predispositions, biological background, ongoing situations, and appraisal and coping—are integral parts of the stress model and are essential for a comprehensive understanding of the stress process (Dohrenwend, 1998b, 2000).

The model (Figure 1) depicts stress and coping and their impact on mental health outcomes (box i). Minority stress is situated within general environmental circumstances (box a), which may include advantages and disadvantages related to factors such as socioeconomic status. An important aspect of these circumstances in the environment is the person's minority status, for example being gay or lesbian (box b). These are depicted as overlapping boxes in the figure to indicate close relationship to other circumstances in the person's environment. For example, minority stressors for a gay man who is poor would undoubtedly be related to his poverty; together these characteristics would determine his exposure to stress and coping resources (Diaz et al., 2001). Circumstances in the environment lead to exposure to stressors, including general stressors, such as a job loss or death of an intimate (box c), and minority stressors unique to minority group members, such as discrimination in employment (box d). Similar to their source circumstances, the stressors are depicted as overlapping as well, representing their interdependency (Pearlin, 1999b). For example, an experience of antigay violence (box d) is likely to increase vigilance and expectations of rejection (box f). Often, minority status leads to personal identification with one's minority status (box e). In turn, such minority identity

leads to additional stressors related to the individual's perception of the self as a stigmatized and devalued minority (Miller & Major, 2000). Because they involve self-perceptions and appraisals, these minority stress processes are more proximal to the individual, including, as described above for LGB individuals, expectations of rejection, concealment, and internalized homophobia (box f).

Of course, minority identity is not only a source of stress but also an important effect modifier in the stress process. First, characteristics of minority identity can augment or weaken the impact of stress (box g). For example, minority stressors may have a greater impact on health outcomes when the LGB identity is prominent than when it is secondary to the person's self-definition (Thoits, 1999). Second, LGB identity may also be a source of strength (box h) when it is associated with opportunities for affiliation, social support, and coping that can ameliorate the impact of stress (Branscombe, Schmitt, & Harvey, 1999; Crocker & Major, 1989; Miller & Major, 2000).

Empirical Evidence for Minority Stress in LGB Populations

In exploring evidence for minority stress two methodological approaches can be discerned: studies that examined within-group processes and their impact on mental health and studies that compared differences between minority and nonminority groups in prevalence of mental disorders. Studies of within-group processes shed light on stress processes, such as those depicted in Figure 1, by explicitly examining them and describing variability in their impact on mental health outcomes among minority group members. For example, such studies may describe whether LGB people who have experienced antigay discrimination suffer greater adverse mental health impact than LGB people who have not experienced such stress (Herek, Gillis, & Cogan, 1999). Studies of between-groups differences test whether minority individuals are at greater risk for disease than nonminority individuals; that is, whether LGB individuals have higher prevalences of disorders than heterosexual individuals. On the basis of minority stress formulations one can hypothesize that LGB people would have higher prevalences of disorders because the putative excess in exposure to stress would cause an increase in prevalence of any disorder that is affected by stress (Dohrenwend, 2000). Typically, in studying between-groups differences, only the exposure (minority status) and outcomes (prevalences of disorders) are assessed; minority stress processes that would have led to the elevation in prevalences of disorders are inferred but unexamined. Thus, within-group evidence illuminates the workings of minority stress processes; between-groups evidence shows the hypothesized resultant difference in prevalence of disorder. Ideally, evidence from both types of studies would converge.

Research Evidence: Within-Group Studies of Minority Stress Processes

Within-group studies have attempted to address questions about causes of mental distress and disorder by assessing variability in predictors of mental health outcomes among LGB people. These studies have identified minority stress processes and often demonstrated that the greater the level of such stress, the greater the impact on mental health problems. Such studies have shown, for example, that stigma leads LGB persons to experience alienation, lack of integration with the community, and problems with self-acceptance (Frable, Wortman, & Joseph, 1997; Greenberg, 1973; Grossman & Kerner, 1998; Malyon, 1981–1982; Massey & Ouellette, 1996; Stokes & Peterson, 1998). Within-group studies have typically measured mental health outcomes using psychological scales (e.g., depressive symptoms) rather than the criteria-based mental disorders (e.g., major depressive disorder). These studies have concluded that minority stress processes are related to an array of mental health problems including depressive symptoms, substance use, and suicide ideation (Cochran & Mays, 1994; D'Augelli & Hershberger, 1993; Diaz et al., 2001; Meyer, 1995; Rosario, Rotheram-Borus, & Reid, 1996; Waldo, 1999). In reviewing this evidence in greater detail I arrange the findings as they

relate to the stress processes introduced in the conceptual framework above. As has already been noted, this synthesis is not meant to suggest that the studies reviewed below stemmed from or referred to this conceptual model; most did not.

Prejudice events—Similar to research with African Americans and other ethnic minority groups (Kessler, Mickelson, & Williams, 1999), researchers have described antigay violence and discrimination as core stressors affecting gay and lesbian populations (Garnets et al., 1990; Herek & Berrill, 1992; Herek, Gillis, & Cogan, 1999; Kertzner, 1999). Antigay prejudice has been perpetrated throughout history: Institutionalized forms of prejudice, discrimination, and violence have ranged from Nazi extermination of homosexuals to enforcement of sodomy laws punishable by imprisonment, castration, torture, and death (Adam, 1987). With the formation of a gay community, as LGB individuals became more visible and more readily identifiable by potential perpetrators, they increasingly became targets of antigay violence and discrimination (Badgett, 1995; Herek & Berrill, 1992; Human Rights Watch, 2001; Safe Schools Coalition of Washington, 1999). In 2001, Amnesty International reported that lesbian, gay, bisexual, and transgender (LGBT) people are subject to widespread human rights abuses, torture, and ill treatment, ranging from loss of dignity to assault and murder. Many of these abuses are conducted with impunity and sanctioned by governments and societies through formal mechanisms such as discriminatory laws and informal mechanisms, including prejudice and religious traditions (Amnesty International, 2001).

Surveys have documented that lesbians and gay men are disproportionately exposed to prejudice events, including discrimination and violence. For example, in a probability study of U.S. adults, LGB people were twice as likely as heterosexual people to have experienced a life event related to prejudice, such as being fired from a job (Mays & Cochran, 2001). In a study of LGB adults in Sacramento, CA, approximately 1/5 of the women and 1/4 of the men experienced victimization (including sexual assault, physical assault, robbery, and property crime) related to their sexual orientation (Herek et al., 1999). Some research has suggested variation by ethnic background as well, although the direction of the findings is not clear. For instance, among urban adults aged 25 to 37 who reported having same-sex sexual partners, Krieger and Sidney (1997) found that 1/2 of Whites compared with 1/3 of Blacks reported discrimination based on sexual orientation. On the other hand, in a study of HIV-positive gay men in New York City, Siegel and Epstein (1996) found that African American and Puerto Rican men had significantly more gay-related minority stressors than Caucasian men.

Research has suggested that LGB youth are even more likely than adults to be victimized by antigay prejudice events, and the psychological consequences of their victimization may be more severe. Surveys of schools in several regions of the United States showed that LGB youth are exposed to more discrimination and violence events than their heterosexual peers. Several such studies, conducted on population samples of high school students, converge in their findings and show that the social environment of sexual minority youth in U.S. high schools is characterized by discrimination, rejection, and violence (Faulkner & Cranston, 1998; Garofalo, Wolf, Kessel, Palfrey, & DuRant, 1998). Compared with heterosexual youth, LGB youth are at increased risk for being threatened and assaulted, are more fearful for their safety at school, and miss school days because of this fear (Safe Schools Coalition of Washington, 1999). For example, in a random sample of Massachusetts high schools students, LGB students more often than heterosexual students had property stolen or deliberately damaged (7% vs. 1%), were threatened or injured with a weapon (6% vs. 1%), and were in physical fight requiring medical treatment (6% vs. 2%; Safe Schools Coalition of Washington, 1999). A national survey of LGBT youth conducted by the advocacy organization Gay, Lesbian, and Straight Education Network (GLSEN; 1999) reported that those surveyed experienced verbal harassment (61%), sexual harassment (47%), physical harassment (28%), and physical assault (14%). The overwhelming majority of LGBT youth (90%) sometimes or

frequently heard homophobic remarks at their schools, with many (37%) reporting hearing these remarks from faculty or school staff (GLSEN, 1999).

Gay men and lesbians are also discriminated against in the workplace. Waldo (1999) demonstrated a relationship between employers' organizational climate and the experience of heterosexism in the workplace, which was subsequently related to adverse psychological, health, and job-related outcomes in LGB employees. Badgett's (1995) analysis of national data showed that gay and bisexual male workers earned from 11% to 27% less than heterosexual male workers with the same experience, education, occupation, marital status, and region of residence.

Garnets et al. (1990) described psychological mechanisms that could explain the association between victimization and psychological distress. The authors noted that victimization interferes with perception of the world as meaningful and orderly. In an attempt to restore order to their perception of the world, survivors ask "Why me?" and often respond with self-recrimination and self-devaluation. More generally, experiences of victimization take away the victim's sense of security and invulnerability. Health symptoms of victimization include "sleep disturbances and nightmares, headaches, diarrhea, uncontrollable crying, agitation and restlessness, increased use of drugs, and deterioration in personal relationship" (Garnets et al., 1990, p. 367). Antigay bias crimes had greater mental health impact on LGB persons than similar crime not related to bias, and bias-crime victimization may have short- or long-term consequences, including severe reactions such as posttraumatic stress disorder (Herek et al., 1999; McDevitt, Balboni, Garcia, & Gu, 2001).

Stigma: Expectations of rejection and discrimination Goffman (1963) discussed the anxiety with which the stigmatized individual approaches interactions in society. Such an individual "may perceive, usually quite correctly, that whatever others profess, they do not really 'accept' him and are not ready to make contact with him on 'equal grounds'" (Goffman, 1963, p. 7). Allport (1954) described vigilance as one of the traits that targets of prejudice develop in defensive coping. This concept helps to explain the stressful effect of stigma. Like other minority group members, LGB people learn to anticipate—indeed, expect—negative regard from members of the dominant culture. To ward off potential negative regard, discrimination, and violence they must maintain vigilance. The greater one's perceived stigma, the greater the need for vigilance in interactions with dominant group members. By definition such vigilance is chronic in that it is repeatedly and continually evoked in the everyday life of the minority person. Crocker et al. (1998) described this as the "need to be constantly 'on guard' ... alert, or mindful of the possibility that the other person is prejudiced" (p. 517). Jones et al. (1984) described the effect of societal stigma on the stigmatized individual as creating a conflict between self-perceptions and others-perceptions. As a result of this conflict, self-perception is likely to be at least somewhat unstable and vulnerable. Maintaining stability and coherence in self-concept is likely to require considerable energy and activity.

This exertion of energy in maintaining one's self-concept is stressful, and would increase as perceptions of others' stigmatization increase. Branscombe, Ellemers, Spears, and Doosje (1999) described four sources of threat relevant to the discussion of stress due to stigma. *Categorization threat* involves threat that a person will be categorized by others as a member of a group against his or her will, especially when group membership is irrelevant within the particular context (e.g., categorization as a woman when applying for a business loan). *Distinctiveness threat* is an opposite threat, relating to denial of distinct group membership when it is relevant or significant (also Brewer, 1991). *Threats to the value of social identity* involves undermining of the minority group's values, such as its competence and morality. A fourth threat, *threat to acceptance*, emerges from negative feedback from one's in-group and the consequent threat rejection by the group. For example, Ethier and Deaux (1994) found that

Hispanic American students at an Ivy League university were conflicted, divided between identification with White friends and culture and the desire to maintain an ethnic cultural identity.

Research evidence on the impact of stigma on health, psychological, and social functioning comes from a variety of sources. Link (1987; Link, Struening, Rahav, Phelan, & Nuttbrock, 1997) showed that in mentally ill individuals, perceived stigma was related to adverse effects in mental health and social functioning. In a cross-cultural study of gay men, Ross (1985) found that anticipated social rejection was more predictive of psychological distress outcomes than actual negative experiences. However, research on the impact of stigma on self-esteem, a main focus of social psychological research, has not consistently supported this theoretical perspective; such research often fails to show that members of stigmatized groups have lower self-esteem than others (Crocker & Major, 1989; Crocker et al., 1998; Crocker & Quinn, 2000). One explanation for this finding is that along with its negative impact, stigma has self-protective properties related to group affiliation and support that ameliorate the effect of stigma (Crocker & Major, 1989). This finding is not consistent across various ethnic groups: Although Blacks have scored higher than Whites on measures of self-esteem, other ethnic minorities have scored lower than Whites (Twenge & Crocker, 2002).

Experimental social psychological research has highlighted other processes that can lead to adverse outcomes. This research may be classified as somewhat different from that related to the vigilance concept discussed above. Vigilance is related to feared possible (even if imagined) negative events and may therefore be classified as more distal along the continuum ranging from the environment to the self. Stigma threat, as described below, relates to internal processes that are more proximal to the self. This research has shown that expectations of stigma can impair social and academic functioning of stigmatized persons by affecting their performance (Crocker et al., 1998; Farina, Allen, & Saul, 1968; Pinel, 2002; Steele, 1997; Steele & Aronson, 1995). For example, Steele (1997) described stereotype threat as the “social–psychological threat that arises when one is in a situation or doing something for which a negative stereotype about one’s group applies” (p. 614) and showed that the emotional reaction to this threat can interfere with intellectual performance. When situations of stereotype threat are prolonged they can lead to “disidentification,” whereby a member of a stigmatized group removes a domain that is negatively stereotyped (e.g., academic success) from his or her self-definition. Such disidentification with a goal undermines the person’s motivation—and therefore, effort—to achieve in this domain. Unlike the concept of life events, which holds that stress stems from some concrete offense (e.g., antigay violence), here it is not necessary that any prejudice event has actually occurred. As Crocker (1999) noted, because of the chronic exposure to a stigmatizing social environment, “the consequences of stigma do not require that a stigmatizer in the situation holds negative stereotypes or discriminates” (p. 103); as Steele (1997) described it, for the stigmatized person there is “a threat in the air” (p. 613).

Concealment versus disclosure—Another area of research on stigma, moving more proximally to the self, concerns the effect of concealing one’s stigmatizing attribute. Paradoxically, concealing one’s stigma is often used as a coping strategy, aimed at avoiding negative consequences of stigma, but it is a coping strategy that can backfire and become stressful (Miller & Major, 2000). In a study of women who felt stigmatized by abortion, Major and Gramzow (1999) demonstrated that concealment was related to suppressing thoughts about the abortion, which led to intrusive thoughts about it, and resulted in psychological distress. Smart and Wegner (2000) described the cost of hiding one’s stigma in terms of the resultant cognitive burden involved in the constant preoccupation with hiding. They described complex cognitive processes, both conscious and unconscious, that are necessary to maintain secrecy regarding one’s stigma, and called the inner experience of the person who is hiding a concealable stigma a “private hell” (p. 229).

LGB people may conceal their sexual orientation in an effort to either protect themselves from real harm (e.g., being attacked, getting fired from a job) or out of shame and guilt (D'Augelli & Grossman, 2001). Concealment of one's homosexuality is an important source of stress for gay men and lesbians (DiPlacido, 1998). Hetrick and Martin (1987) described learning to hide as the most common coping strategy of gay and lesbian adolescents, and noted that

individuals in such a position must constantly monitor their behavior in all circumstances: how one dresses, speaks, walks, and talks become constant sources of possible discovery. One must limit one's friends, one's interests, and one's expression, for fear that one might be found guilty by association. ... The individual who must hide of necessity learns to interact on the basis of deceit governed by fear of discovery. ... Each successive act of deception, each moment of monitoring which is unconscious and automatic for others, serves to reinforce the belief in one's difference and inferiority. (pp. 35–36)

Hiding and fear of being identified do not end with adolescence. For example, studies of the workplace experience of LGB people found that fear of discrimination and concealment of sexual orientation are prevalent (Croteau, 1996) and that they have adverse psychological, health, and job-related outcomes (Waldo, 1999). These studies showed that LGB people engage in identity disclosure and concealment strategies that address fear of discrimination on one hand and a need for self-integrity on the other. These strategies range from passing, which involves lying to be seen as heterosexual; covering, which involves censoring clues about one's self so that LGB identity is concealed; being implicitly out, which involves telling the truth without using explicit language that discloses one's sexual identity; and being explicitly out (Griffin, 1992, as cited in Croteau, 1996).

Another source of evidence comes from psychological research that has shown that expressing emotions and sharing important aspects of one's self with others—through confessions and disclosures involved in interpersonal or therapeutic relationships, for example—are important factors in maintaining physical and mental health (Pennebaker, 1995). Studies have shown that suppression, such as hiding secrets, is related to adverse health outcomes and that expressing and disclosing traumatic events or characteristics of the self improve health by reducing anxiety and promoting assimilation of the revealed characteristics (Bucci, 1995; Stiles, 1995). In one class of studies, investigators have shown that repression and inhibition affect immune functions and health outcomes, whereas expression of emotions, such as writing about traumatic experiences, produces improvement in immune functions, decreases in physician visits, and reduced symptoms for diseases such as asthma and arthritis (Petrie, Booth, & Davison, 1995; Smyth, Stone, Hurewitz, & Kaell, 1999). Research evidence in gay men supports these formulations. Cole and colleagues found that HIV infection advanced more rapidly among gay men who concealed their sexual orientation than those who were open about their sexual orientation (Cole et al., 1996a). In another study among HIV-negative gay men, those who concealed their sexual orientation were more likely to have health problems than those who were open about their sexual orientation (Cole et al., 1996b).

In addition to suppressed emotions, concealment prevents LGB people from identifying and affiliating with others who are gay. Psychological literature has demonstrated the positive impact of affiliation with other similarly stigmatized persons on self-esteem (Crocker & Major, 1989; Jones et al., 1984; Postmes & Branscombe, 2002). This effect has been demonstrated by Frable, Platt, and Hoey (1998) in day-to-day interactions. The researchers assessed self-perceptions and well-being in the context of the immediate social environment. College students with concealable stigmas, such as homosexuality, felt better about themselves when they were in an environment with others who were like them than when they were with others who are not similarly stigmatized. In addition, if LGB people conceal their sexual orientation, they are not likely to access formal and informal support resources in the LGB community.

Thus, in concealing their sexual orientation LGB people suffer from the health-impairing properties of concealment and lose the ameliorative self-protective effects of being “out.”

Internalized homophobia—In the most proximal position along the continuum from the environment to the self, internalized homophobia represents a form of stress that is internal and insidious. In the absence of overt negative events, and even if one’s minority status is successfully concealed, lesbians and gay men may be harmed by directing negative social values toward the self. Thoits (1985, p. 222) described such a process of self-stigmatization, explaining that “role-taking abilities enable individuals to view themselves from the imagined perspective of others. One can anticipate and respond in advance to others’ reactions regarding a contemplated course of action.”

Clinicians use the term *internalized homophobia* to refer to the internalization of societal antigay attitudes in lesbians and gay men (e.g., Malyon, 1981–1982). Meyer and Dean (1998) defined internalized homophobia as “the gay person’s direction of negative social attitudes toward the self, leading to a devaluation of the self and resultant internal conflicts and poor self-regard” (p. 161). After they accept their stigmatized sexual orientation, LGB people begin a process of coming out. Optimally, through this process they come to terms with their homosexuality and develop a healthy identity that incorporates their sexuality (Cass, 1979, 1984; Coleman, 1981–1982; Troiden, 1989). Internalized homophobia signifies the failure of the coming out process to ward off stigma and thoroughly overcome negative self-perceptions and attitudes (Morris et al., 2001). Although it is most acute early in the coming out process, it is unlikely that internalized homophobia completely abates even when the person has accepted his or her homosexuality. Because of the strength of early socialization experiences, and because of continued exposure to antigay attitudes, internalized homophobia remains an important factor in the gay person’s psychological adjustment throughout life. Gay people maintain varying degrees of residual antigay attitudes that are integrated into their self-perception that can lead to mental health problems (Cabaj, 1988; Hetrick & Martin, 1984; Malyon, 1981–1982; Nungesser, 1983). Gonsiorek (1988) called such residual internalized homophobia “covert,” and said, “Covert forms of internalized homophobia are the most common. Affected individuals appear to accept themselves, yet sabotage their own efforts in a variety of ways” (p. 117).

Williamson (2000) reviewed the literature on internalized homophobia and described the wide use of the term in gay and lesbian studies and gay-affirmative psychotherapeutic models. He noted the intuitive appeal of internalized homophobia to “almost all gay men and lesbians” (Williamson, 2000, p. 98). Much of the literature on internalized homophobia has come from theoretical writings and clinical observations, but some research has been published. Despite significant challenges to measuring internalized homophobia and lack of consistency in its conceptualization and measurement (Mayfield, 2001; Ross & Rosser, 1996; Shidlo, 1994; Szymanski & Chung, 2001), research has shown that internalized homophobia is a significant correlate of mental health including depression and anxiety symptoms, substance use disorders, and suicide ideation (DiPlacido, 1998; Meyer & Dean, 1998; Williamson, 2000). Research has also suggested a relationship between internalized homophobia and various forms of self-harm, including eating disorders (Williamson, 2000) and HIV-risk-taking behaviors (Meyer & Dean, 1998), although Shidlo (1994) failed to show this relationship. Nicholson and Long (1990) showed that internalized homophobia was related to self-blame and poor coping in the face of HIV infection/AIDS. Other research showed that internalized homophobia was related to difficulties with intimate relationships and sexual functioning (Dupras, 1994; Meyer & Dean, 1998; Rosser, Metz, Bockting, & Buroker, 1997).

Research Evidence: Between-Groups Studies of Prevalence of Mental Disorder

Despite a long history of interest in the prevalence of mental disorders among gay men and lesbians, methodologically sound epidemiological studies are rare. The interest in mental health of lesbians and gay men has been clouded by shifts in the social environment within which it was embedded. Before the 1973 declassification of homosexuality as a mental disorder, gay-affirmative psychologists and psychiatrists sought to refute arguments that homosexuality should remain a classified disorder by showing that homosexuals were not more likely to be mentally ill than heterosexuals (Bayer, 1981). At the time, some writers insisted that homosexuals were more likely than heterosexuals to be ill and that this demonstrated that homosexuality should be classified as a mental disorder, but many of these studies were based on biased samples, for example of prison populations or clinical (primarily psychoanalytic) observations (Marmor, 1980). An exception to authors of earlier studies is Evelyn Hooker, who in several studies that became influential during the debate on the status of homosexuality, found that homosexual and heterosexual subjects were indistinguishable in psychological projective testing (e.g., Hooker, 1957).

Most of the early studies used symptom scales that assessed psychiatric symptoms rather than prevalence of classified disorders. An exception was a study by Saghir, Robins, Welbran, and Gentry (1970a, 1970b), which assessed criteria-defined prevalences of mental disorders among gay men and lesbians as compared with heterosexual men and women. The authors found “surprisingly few differences in manifest psychopathology” between homosexuals and heterosexuals (Saghir et al., 1970a, p. 1084). In the social atmosphere of the time, research findings were interpreted by gay-affirmative researchers conservatively, so as to not erroneously suggest that lesbians and gay men had high prevalences of disorder. Thus, although Saghir and colleagues (1970a) were careful not to claim that gay men had higher prevalences of mental disorders than heterosexual men, they noted that they did find “that whenever differences existed they showed the homosexual men having more difficulties than the heterosexual controls,” including, “a slightly greater overall prevalence of psychiatric disorder” (p. 1084). Among studies that assessed symptomatology, several showed slight elevation of psychiatric symptoms among LGB people, although these levels were typically within a normal range (see Gonsiorek, 1991; Marmor, 1980). Thus, most reviewers have concluded that research evidence has conclusively shown that homosexuals did not have abnormally elevated psychiatric symptomatology compared with heterosexuals (see Marmor, 1980). This conclusion has been widely accepted and has been often restated in most current psychological and psychiatric literature (Cabaj & Stein, 1996; Gonsiorek, 1991).

More recently, there has been a shift in the popular and scientific discourse on the mental health of lesbians and gay men. Gay-affirmative advocates have begun to advance a minority stress hypothesis, claiming that discriminatory social conditions lead to poor health outcomes (Dean et al., 2000; Krieger & Sidney, 1997; Mays & Cochran, 2001; Meyer, 2001; Rosario et al., 1996). In 1999, the journal *Archives of General Psychiatry* published two articles (Fergusson, Horwood, & Beautrais, 1999; Herrell et al., 1999) that showed that as compared with heterosexual people, LGB people had higher prevalences of mental disorders and suicide. The articles were accompanied by three editorials (Bailey, 1999; Friedman, 1999; Remafedi, 1999). One editorial heralded the studies as containing “the best published data on the association between homosexuality and psychopathology,” and concluded that “homosexual people are at a substantially higher risk for some forms of emotional problems, including suicidality, major depression, and anxiety disorder” (Bailey, 1999, p. 883). All three editorials suggested that homophobia and adverse social conditions are a primary risk for mental health problems of LGB people. This shift in discourse is also reflected in the gay-affirmative popular media. For example, in an article titled “The Hidden Plague” published in *Out*, a gay and lesbian lifestyle magazine, Andrew Solomon (2001) claimed that compared with heterosexuals “gay

people experience depression in hugely disproportionate numbers” (p. 38) and suggested that the most probable cause is societal homophobia and the prejudice and discrimination associated with it.

To assess evidence for the minority stress hypothesis from between-groups studies, I examined data on prevalences of mental disorders in LGB versus heterosexual populations. The minority stress hypothesis leads to the prediction that LGB individuals would have higher prevalences of mental disorder because they are exposed to greater social stress. To the extent that social stress causes psychiatric disorder, the excess in risk exposure would lead to excess in morbidity (Dohrenwend, 2000).

I identified relevant studies using electronic searches of the PsycINFO and MEDLINE databases. I included studies if they were published in an English-language peer-reviewed journal, reported prevalences of diagnosed psychiatric disorders that were based on research diagnostic criteria (e.g., *DSM*), and compared lesbians, gay men, and/or bisexuals (variably defined) with heterosexual comparison groups. Studies that reported scores on scales of psychiatric symptoms (e.g., Beck Depression Inventory) and studies that provided diagnostic criteria on LGB populations with no comparison heterosexual groups were excluded. Selecting studies for review can present problems—studies reporting statistically significant results are typically more likely to be published than studies with nonsignificant results. This can result in publication bias, which overestimates the effects in the research synthesis (Begg, 1994). There are some reasons to suspect that publication bias is not a great threat to the present analysis. First, Begg (1994) noted that publication bias is more of a concern in instances in which numerous small studies are being conducted. This is clearly not the case with regard to population surveys of LGB individuals and the mental health outcomes as defined here—the studies I rely on are few and large. This is, in part, because of the great costs involved in sampling LGB people and, in part, because the area has not been extensively studied since the declassification of homosexuality as a mental disorder. Second, publication is typically guided by an “advocacy style,” where statistical significance is used as ““proof” of a theory” (Begg, 1994, p. 400). In the area of LGB mental health, showing nonsignificant results—that LGBs do not have higher prevalences of mental disorders—would have provided as much a proof of a theory as showing significant results; therefore, bias toward publication of positive results is unlikely.

In reviewing the data I consider classes of mental disorders that are commonly discussed in the psychiatric epidemiology literature (Kessler et al., 1994; Robins & Regier, 1991). Consistent with this literature, I consider separately prevalence of lifetime disorders, those occurring at any time over the lifetime, and prevalence of current disorders, typically those occurring in 1-year period. I examine the prevalence of any mental disorder and the prevalences of general subclasses of disorders, including mood disorders, anxiety disorders, and substance use disorders. The inclusion of only major classes of disorders allows for greater parsimony in interpreting the results than would be allowed by an examination of each individual disorder. It is a sufficient test of the minority stress hypothesis because minority stress predictions are general and uniform across types of disorders. The included disorders are those that are most prevalent in population samples and that are most often the subject of psychiatric epidemiological studies. Excluded disorders were rarely if ever studied in population samples of LGB individuals, so their exclusion does not lead to bias in selection of available literature. The classes of disorders excluded were disorders usually first diagnosed in infancy, childhood, or adolescence; delirium, dementia, and amnesic and other cognitive disorders; mental disorders due to a general medical condition; schizophrenia and other psychotic disorders; somatoform disorders; factitious disorders; dissociative disorders; sexual and gender identity disorders; eating disorders; sleep disorders; impulse-control disorders; adjustment disorders; and personality disorders.

The studies (Atkinson et al., 1988; Cochran & Mays, 2000a, 2000b; Fergusson et al., 1999; Gilman et al., 2001; Mays & Cochran, 2001; Pillard, 1988; Saghir et al., 1970a, 1970b; Sandfort et al., 2001) and their results are reported in Table 1. In drawing a conclusion about whether LGB groups have higher prevalences of mental disorders one should proceed with caution. The studies are few, methodologies and measurements are inconsistent, and trends in the findings are not always easy to interpret. Although several studies show significant elevation in prevalences of disorders in LGB people, some do not. Yet, an overall trend appears clear. This pattern must lead us to conclude similarly to Saghir et al. (1970a, 1970b) that whenever significant differences in prevalences of disorders between LGB and heterosexual groups were reported, LGB groups had a higher prevalence than heterosexual groups.

To evaluate this general impression I conducted a meta-analysis using the Mantel-Haenszel (M-H) procedure for synthesis of categorical data (Fleiss, 1981; Shadish, Cook, & Campbell, 2002; Shadish & Haddock, 1994) using the statistical software Epi Info (Version 1.12, Statcalc procedure; Centers for Disease Control and Prevention, 2001). This procedure provides a M-H weighted odds ratio (OR) and confidence intervals (CIs) on aggregates of individual studies. For each class of disorder I calculated the M-H weighted OR from studies that provided relevant data. In addition, I conducted stratified analyses that combined results for (a) men versus women and (b) studies that used nonrandom versus random sampling techniques. The analyses provided M-H weighted ORs for each stratum. The results of this meta-analysis for prevalences of lifetime and current disorders are shown in Figure 2; they affirm the impression given by an examination of Table 1. The results are compelling for all disorders, for each of the subclasses of disorders examined, and for lifetime and current disorders. For example, for the five studies providing data on any lifetime mental disorders, the combined M-H weighted OR was 2.41, with a 95% CI of 1.91 to 3.02. This indicates that compared with heterosexual men and women, gay men and lesbians are about 2.5 times more likely to have had a mental disorder at any point over their lifetime. The analyses that stratified the observations by gender showed no divergence from the results of the unstratified analyses. The M-H weighted OR (95% CI) for a lifetime occurrence of any disorder was 2.07 (1.57, 2.74) for men and 3.31 (2.19, 5.06) for women; for mood disorders, 2.66 (2.07, 3.64) for men, 2.46 (1.71, 3.69) for women; for anxiety disorders, 2.43 (1.78, 3.30) for men, 1.63 (1.09, 2.47) for women; and for substance use disorders, 1.45 (1.10, 1.91) for men and 3.47 (2.22, 5.50) for women. The results on prevalences of current disorders were similar, but they showed that for substance use disorders, the combined M-H weighted OR for men (1.37, 95% CI = 0.96, 1.95) was not significant and lower than that for women (OR = 3.50, 95% CI = 2.23, 5.81).

Results of the analyses that stratified the observations on lifetime prevalences of disorders by randomization in sampling design are presented in Figure 3. They show that for mood disorders, anxiety disorders, and substance use disorders, an increase in risk to the LGB group is evident in the randomized studies only. As the figure shows, for each of these subgroups of disorders, the M-H weighted OR was significant in the analysis of studies that used random samples, but not in the analysis of studies that used nonrandom samples (an OR is not significant when the 95% CI includes 1.00). These analyses could not be conducted for current prevalences of disorder because an insufficient number of nonrandomized studies provided such data.

Suicide

Whether gay men have higher prevalence of suicidal behavior has also been debated in recent years. Some reviewers have contended that suicide is highly prevalent among LGB populations, especially youth (Gibson, 1989). In support of this, several studies found elevated lifetime prevalences of suicide ideation and attempts in LGB populations (Bell & Weinberg, 1978; D'Augelli & Hershberger, 1993; Kruks, 1990; Noell & Ochs, 2001; Pillard, 1988; Remafedi, Farrow, & Deisher, 1991; Rotheram-Borus, Hunter, & Rosario, 1994; Saghir

et al., 1970a,1970b;Schneider, Farberow, & Kruks, 1989;Schneider, Taylor, Hammen, Kemeny, & Dudley, 1991). However, such studies have been criticized for severe methodological limitations including selection bias and measurement issues (Muehrer, 1995;Savin-Williams, 2001). For example, many studies used samples of youth recruited from social service organizations, who may be more vulnerable than the general population of LGB youth to mental health problems (Muehrer, 1995).

More recently, studies that used improved methodologies, such as random probability sampling, clearer definitions, and improved measurements of suicidality, also found strong evidence for elevation in suicide-related problems among LGB persons. A higher risk for suicide ideation and attempts among LGB groups seems to start at least as early as high school. For example, in a representative sample of Massachusetts high school students, Garofalo et al. (1998) found that LGB youth (including other youths who were not sure of their sexual orientation) were three times more likely than their heterosexual peers to report a suicide attempt in the year prior to the survey. When stratified by gender, sexual orientation was an independent predictor of suicide attempts among boys but not girls. Other probability surveys support the conclusion that LGB youth are at increased risk for suicide attempts (Bagley & Tremblay, 1997;Faulkner & Cranston, 1998;Remafedi, French, Story, Resnick, & Blum, 1998;Safren & Heimberg, 1999). A cohort study in New Zealand found that LGB youth were five to six times more likely than heterosexual youth to report suicide ideation and attempts over their lifetime (Fergusson et al., 1999). Similar findings have been reported among adults in the United States, where gay men were more than twice as likely as heterosexual men to report lifetime suicide attempts (Cochran & Mays, 2000a;Gilman et al., 2001;Paul et al., 2002). A 1999 study of the Vietnam Era Twin Registry used particularly convincing methodology to study differences in suicidality between twins (Herrell et al., 1999); it found that gay or bisexual men were six times more likely than their heterosexual twins to have attempted suicide.

Taken together, the evidence from these studies supports the minority stress hypothesis that LGB populations are vulnerable to suicide ideation and attempt—although the evidence on adult lesbian and bisexual women is not as clear. Also not clear from studies of suicide ideation and attempt is whether LGB persons are at higher risk for suicide-related mortality. Suicide attempts and ideation are alarming in their own right, but their relationship to completed suicide is not straightforward; for example, not all attempters do so with the intent to die or injure themselves severely enough to cause death (Moscicki, 1994). Nevertheless, regardless of its relationship to completed suicide, suicide ideation and attempt is a serious personal and public health concern that need to be studied for its own merit (Moscicki, 1994;Moscicki et al., 1988).

Two studies assessed the risk for completed suicides among gay men (Rich, Fowler, Young, & Blenkush, 1986;Shaffer, Fisher, Hicks, Parides, & Gould, 1995). These studies assessed the prevalence of homosexuality among completed suicides and found no overrepresentation of gay and bisexual men, concluding that LGB populations are not at increased risk for suicide. Thus, findings from studies of completed suicides are inconsistent with studies finding that LGB groups are at higher risk of suicide ideation and attempts than heterosexuals. However, there are many challenges to interpreting these data (McDaniel, Purcell, & D'Augelli, 2001;Muehrer, 1995). Among these difficulties are that (a) these studies attempt to answer whether gay individuals are overrepresented in suicide deaths by comparing it against an expected population prevalence of homosexuality, but with no proper population data on LGB individuals, it is a matter of some conjunction to arrive at any such estimate and (b) because these studies rely on postmortem classification of sexual orientation, their reliability in assessing prevalence of gay individuals among suicide deaths is questionable. Even if the deceased person was gay, postmortem autopsies are likely to underestimate his or her

homosexuality because homosexuality is easily concealable and often is concealed. Considering the scarcity of studies, the methodological challenges, and the greater potential for bias in studies of completed suicide, it is difficult to draw firm conclusions from their apparent refutation of minority stress theory.

Discussion

Do LGB People Have Higher Prevalences of Mental Disorders?

As described above, the preponderance of the evidence suggests that the answer to the question, “Do LGB people have higher prevalences of mental disorders?” is yes. The evidence is compelling. However, the answer is complicated because of methodological limitations in the available studies. The studies whose evidence I have relied on (discussed as between-groups studies) fall into two categories: studies that targeted LGB groups using non-probability samples and studies that used probability samples of the general populations that allowed identification of LGB versus heterosexual groups. In the first type, the potential for error is great because researchers relied on volunteers who may be very different than the general LGB population to which one wants to generalize (Committee on Lesbian Health Research Priorities, 1999; Harry, 1986; Meyer & Colten, 1999; Meyer, Rossano, Ellis, & Bradford, 2002). It is plausible that interest in the study topic attracts volunteers who are more likely to have had—or at least, to disclose—more mental health problems than nonvolunteers. This may be particularly problematic in studies of LGB youth (e.g., Fergusson et al., 1999). As a group, LGB youth respondents in studies may represent only a portion of the total underlying population of LGB youth—those who are “the out, visible, and early identifiers” (Savin-Williams, 2001, p. 983)—therefore biasing estimates of characteristics of the elusive target population. Also, the studies I reviewed compared the LGB group with a nonrandom sample of heterosexuals, introducing further bias, because the methods they used to sample heterosexuals often differed from those used to sample than the LGB groups. The potential for bias is particularly glaring in studies that compared a healthy heterosexual group with a group of gay men with HIV infection and AIDS (e.g., Atkinson et al., 1988).

The second group of studies used population-based surveys. Such studies greatly improve on the methodology of the first type of studies because they used random sampling techniques, but they too suffer from methodological deficiencies. This is because none of these studies was a priori designed to assess mental health of LGB groups; as a result, they were not sophisticated in the measurement of sexual orientation. The studies classified respondents as homosexual or heterosexual only on the basis of past sexual behavior—in 1 year (Sandfort et al., 2001), in 5 years (Gilman et al., 2001), or over the lifetime (Cochran & Mays, 2000a)—rather than using a more complex matrix that assessed identity and attraction in addition to sexual behavior (Laumann et al., 1994). The problem of measurement could have increased potential error due to misclassification, which in turn could have led to selection bias. The direction of bias due to selection is unclear, but it is plausible that individuals who were more troubled by their sexuality would be overrepresented—especially as discussed above for youth—leading to bias in reported estimates of mental disorder. However, the reverse result, that people who were more secure and healthy were overrepresented, is also plausible.

The studies also suffer because they included a very small number of LGB people. The small sample sizes resulted in little power to detect differences between the LGB and heterosexual groups, which led to lack of precision in calculating group differences in prevalences of disorders. This means that only differences of high magnitude would be detected as statistically significant, which might explain the inconsistencies in the research evidence. It should be noted, however, that if inconsistencies were the result of random error, one would expect that in some studies the heterosexual group would appear to have higher prevalences of disorders. This was not evident in the studies reviewed. The small number of LGB respondents in these

studies also resulted in low power to detect (or statistically control for) patterns related to race/ethnicity, education, age, socioeconomic status, and, sometimes, gender. My use of a meta-analytic technique to estimate combined ORs somewhat corrects this deficiency, but it is important to remember that a meta-analysis cannot overcome problems in the studies on which it is based. It is important, therefore, to interpret results of meta-analyses with caution and a critical perspective (Shapiro, 1994).

One problem, which can provide a plausible alternative explanation for the findings about prevalences of mental disorders in LGB individuals, is that bias related to cultural differences between LGB and heterosexual persons inflates reports about history of mental health symptoms (cf. Dohrenwend, 1966; Rogler, Mroczek, Fellows, & Loftus, 2001). It is plausible that cultural differences between LGB and heterosexual individuals cause a response bias that led to overestimation of mental disorders among LGB individuals. This would happen if, for example, LGB individuals were more likely to report mental health problems than heterosexual individuals. There are several reasons why this may be the case: In recognizing their own homosexuality and coming out, most LGB people have gone through an important self-defining period when increased introspection is likely. This could lead to greater ease in disclosing mental health problems. In addition, a coming out period provides a focal point for recall that could lead to recall bias that exaggerates past difficulties. Related to this, studies have suggested that LGB people are more likely than heterosexual people to have received professional mental health services (Cochran & Mays, 2000b). This too could have led LGB people to be less defensive and more ready than heterosexual people to disclose mental health problems in research. Of course, increased use of mental health services could also reflect a true elevation in prevalences of mental disorders in LGB people, though the association between mental health treatment and presence of diagnosed mental disorders is not strong (Link & Dohrenwend, 1980). To the extent that such response biases existed, they would have led researchers to overestimate the prevalence of mental disorders in LGB groups. Research is needed to test these propositions.

Over the past 2 decades, significant advances in psychiatric epidemiology have made earlier research on prevalence of mental disorders almost obsolete. Among these advances are the recognition of the importance of population-based surveys (rather than clinical studies) of mental disorders, the introduction of an improved psychiatric classification system, and the development of more accurate measurement tools and techniques for epidemiological research. Two large-scale psychiatric epidemiological surveys have already been conducted in the United States: the Epidemiological Catchment Area Study (Robins & Regier, 1991) and the National Comorbidity Survey (Kessler et al., 1994). Similar studies need to address questions about patterns of stress and disorder in LGB populations (Committee on Lesbian Health Research Priorities, 1999; Dean et al., 2000).

Using random sampling methodologies for large-scale studies of LGB populations is challenging and costly, but it is not impossible. Recent research has demonstrated the utility of innovative methodologies for population studies of LGB individuals (Binson et al., 1995; Binson, Moskowitz, Anderson, Paul, & Catania, 1996; Meyer & Colten, 1999; Meyer et al., 2002). New research must therefore continue to use random sampling to study LGB groups, combined with sophisticated measurements of sexual orientation, a larger number of respondents, and a direct test of hypotheses about patterns in prevalences of disorders and their causes. An ideal study design would combine evidence from the investigation of within- and between-groups differences. Such a study would assess both the differences in prevalences of disorders and the causal role of stress processes in explaining excess risk for disorder in the LGB group. If in a random population sample the prevalence of disorders would be found to be higher among LGB respondents than among their heterosexual peers and if stress

mechanisms explained the excess in this prevalence of disorder, then minority stress predictions would be strongly supported.

To understand causal relations, research also needs to explain the mechanisms through which stressors related to prejudice and discrimination affect mental health. Krieger (2001) called for an ecosocial perspective in social epidemiology, which would explain how social factors are embodied and lead to disease. Discussing racism, she explained,

Biological expressions of racial discrimination ... refer to how people literally embody and biologically express experiences of racial oppression and resistance, from conception to death, thereby producing racial/ethnic disparities in morbidity and mortality across a wide spectrum of outcomes. (Krieger, 2000, p. 63)

Limitations and Challenges

The conclusion I propose—that LGB individuals are exposed to excess stress due to their minority position and that this stress causes an excess in mental disorders—is inconsistent with research and theoretical writings that can be described as a *minority resilience hypothesis*, which claims that stigma does not negatively affect self-esteem (Crocker et al., 1998; Gray-Little & Hafdahl, 2000; Twenge & Crocker, 2002). As such, my conclusion is also inconsistent with studies that showed that Blacks do not have higher prevalences of mental disorders than Whites, as is expected by minority stress formulations (Kessler et al., 1994; Robins & Regier, 1991). Further research must address this apparent contradiction. One area for the study of differences between minority stress in LGB and Black individuals concerns the socialization of minority group members. LGB individuals are distinct from Blacks in that they are not born into their minority identity but acquire it later in life. Because of this, LGB individuals do not have the benefit of growing up in a self-enhancing social environment similar to that provided to Blacks in the process of socialization. Experiences with positive racial identity may be protective to Blacks both directly, by contributing to high self-esteem, and indirectly, by facilitating self-protective mechanisms associated with stigma (Crocker & Major, 1989; Gray-Little & Hafdahl, 2000; Twenge & Crocker, 2002). This distinction may lead to a greater impact of minority stress among LGB individuals as compared with race/ethnic minorities. Studying this distinction between LGB individuals and Blacks may reveal important aspects of the effect of stigma on mental health.

There are several important limitations to my review. First, throughout the article I discuss LGB individuals as if they were a homogenous group. That is clearly not the case. In ignoring the heterogeneity of the group I may have glossed over some important distinctions relevant to the discussion of minority stress. Perhaps one of the most important is a distinction between a single minority identity of White gay and bisexual men and multiple minority identities of gay and bisexual men who are also members of race/ethnic minorities and therefore subject to stigma related to their race/ethnicity (Eliason, 1996). Some studies found ethnicity/race differences in stress and social support among LGB populations, with members of ethnic minorities confronting racism in a White LGB community and homophobia in their ethnic communities of origin (Chan, 1995; Espin, 1993; Fullilove & Fullilove, 1999). Similarly, lesbians and bisexual women confront stigma and prejudice related to gender in addition to sexual orientation. Just as racial/ethnic identity and gender provide additional sources of stress, they provide additional resources for coping with stigma. For example, Brooks (1981) described affiliation with feminist organizations as a significant source of support and coping for lesbians. Finally, the review, and the studies I cite, fails to distinguish bisexual individuals from lesbian and gay individuals. Recent evidence suggests that this distinction is important and that bisexuals may be exposed to more stressors and may have greater mental health problems than lesbians or gay men (Jorm, Korten, Rodgers, Jacomb, & Christensen, 2002).

Another limitation is that the review ignores generational and cohort effects in minority stress and the prevalence of mental disorder. Cohler and Galatzer-Levy (2000) critiqued analyses that ignore important generational and cohort effects. They noted great variability among generations of lesbians and gay men. They described an older generation, which matured prior to the gay liberation movement, as the one that has been most affected by stigma and prejudice, a middle-aged generation, which brought about the gay liberation movement, as the one that benefited from advances in civil rights of and social attitudes toward LGB individuals, and a younger generation, including the present generation of young adults, as having an unparalleled “ease about sexuality” (p. 40). An analysis that accounts for these generational and cohort changes would greatly illuminate the discussion of minority stress. Clearly, the social environment of LGB people has undergone remarkable changes over the past few decades. Still, even Cohler and Galatzer-Levy (2000) limited their description of the new gay and lesbian generation to a primarily liberal urban and suburban environment. Evidence from current studies of youth has confirmed that the purported shifts in the social environment have so far failed to protect LGB youth from prejudice and discrimination and its harmful impact (Safe Schools Coalition of Washington, 1999).

The Objective Versus Subjective Approaches to the Definition of Stress

In reviewing the literature I described minority stressors along a continuum from the objective (prejudice events) to the subjective (internalized homophobia), but this presentation may have obscured important conceptual distinctions. Two general approaches underlie stress discourse: One views stress as objective, the other as subjective, phenomena. The objective view defines stress, in particular life events, as real and observable phenomena that are experienced as stressful because of the adaptational demands they impose on most individuals under similar circumstances (Dohrenwend, Raphael, Schwartz, Stueve, & Skodol, 1993). The subjective view defines stress as an experience that depends on the relationship between the individual and his or her environment. This relationship depends on properties of the external event but also, significantly, on appraisal processes applied by the individual (Lazarus, 1991; Lazarus & Folkman, 1984).

The distinction between objective and subjective conceptualization of stress is often ignored in stress literature, but it has important implications for the discussion of minority stress (Meyer, 2003). Link and Phelan (2001) distinguished between individual discrimination and structural discrimination. Individual discrimination refers to personal perceived experiences with discrimination, whereas structural discrimination refers to a wide range of “institutional practices that work to the disadvantage of . . . minority groups even in the absence of individual prejudice or discrimination” (Link & Phelan, 2001, p. 372). Most research on social stress has been concerned with individual prejudice. When I discussed the objective end of the continuum of minority stress, I implied that it is less dependent on individual perception and appraisal, but clearly, individual reports of discrimination depend on individual perception, which is associated with the person’s perspective and opportunity to perceive prejudice. For example, individuals who are not hired for a job are unlikely to be aware of discrimination (especially in cases in which it is illegal). In addition, there are strong motivations to perceive and report discrimination events that vary with individual psychological and demographic characteristics (Kobrynowicz & Branscombe, 1997; Operario & Fiske, 2001). Contrada et al. (2000) suggested that members of minority groups have contradictory motivations with regard to perceiving discrimination events: They are motivated by self-protection to detect discrimination but also by the wish to avoid false alarms that can disrupt social relations and undermine life satisfaction. Contrada et al. also suggested that in ambiguous situations people tend to maximize perceptions of personal control and minimize recognition of discrimination. Thus, structural discrimination, which characterizes differences between minority and nonminority groups, are not always evident in the within-group assessments reviewed above (Rose,

1985;Schwartz & Carpenter, 1999). For all these reasons, structural discrimination may be best documented by differential group statistics including health and economic statistics rather than by studying individual perceptions alone (Adams, 1990).

The distinction between objective and subjective approaches to stress is important because each perspective has different philosophical and political implications (Hobfoll, 1998). The subjective view of stress highlights individual differences in appraisal and, at least implicitly, places more responsibility on the individual to withstand stress. It highlights, for example, processes that lead resilient individuals to see potentially stressful circumstances as less (or not at all) stressful, implying that less resilient individuals are somewhat responsible for their stress experience. Because, according to Lazarus and Folkman (1984), coping capacities are part of the appraisal process, potentially stressful exposures to situations for which individuals possess coping capabilities would not be appraised as stressful. (Both views of the stress process allow that personality, coping, and other factors are important in moderating the impact of stress; the distinction here is in their conceptualization of what is meant by the term *stress*.) Thus, the subjective view implies that by developing better coping strategies individuals can and should inoculate themselves from exposure to stress. An objective view of social stress highlights the properties of the stressful event or condition—it is stressful regardless of the individual’s personality characteristics (e.g., resilience) or his or her ability to cope with it. Arising from the objective–subjective distinction are questions related to the conceptualization of the minority person in the stress model as a victim versus a resilient actor.

The Minority Person as Victim Versus Resilient Actor

As they discuss minority stress, researchers inevitably describe members of minority groups as victims of oppressive social conditions, and they have been criticized for this characterization. More than 3 decades ago, the novelist Ralph Ellison articulated this critique in his discussion of sociological accounts of the “deforming marks of oppression” (as cited in Thomas & Sillen, 1972/1991, p. 46) on the life of African Americans in Harlem:

I don’t deny that these sociological formulas are drawn from life. But I do deny that they define the complexity of Harlem. ... [T]here is something else in Harlem, something subjective, willful, and complexly and compellingly human. It is that “something else” which makes for our strength, which makes for our endurance and our promise. (Ellison, as cited in Thomas & Sillen, 1972/1991, p. 46)

Current observers continue to call for researchers to move from viewing minority group members as passive victims of prejudice to viewing them as actors who interact effectively with society (Clark et al., 1999;Crocker & Major, 1989). With this shift, it has been argued, researchers would acknowledge “the power minority groups have with respect to prejudice” (Shelton, 2000). The benefits of this perspective are clear: It reflects real and important coping processes that have been described above and affirms the strengths of minority group members and their institutions—institutions that have been resiliently, sometimes heroically, fought for and won (D’Emilio, 1983).

The tension between the view of the minority person as a victim versus a resilient actor is important to note. Viewing the minority person as a resilient actor is consistent with values of American society: It reflects and preserves “a Western view of the world that emphasizes control, freedom, and individualized determination” (Hobfoll, 1998, p. 21). However, holding such a view of minority persons can be perilous. The peril lies in that the weight of responsibility for social oppression can shift from society to the individual. Viewing the minority person as a resilient actor may come to imply that effective coping is to be expected from most, if not all, of those who are in stressful or adverse social conditions. Failure to cope, failure of resilience, can therefore be judged as a personal, rather than societal, failing.

This is especially likely when one considers the distinction described above between subjective and objective conceptualization of stress. When the concept of stress is conceptualized, following Lazarus and Folkman (1984), as dependent on—indeed, determined by—coping abilities, then by definition, stress for which there is effective coping would not be appraised as stressful. As researchers are urged to represent the minority person as a resilient actor rather than a victim of oppression, they are at risk of shifting their view of prejudice, seeing it as a subjective stressor—an adversity to cope with and overcome—rather than as an objective evil to be abolished. This peril should be heeded by psychologists who by profession study individuals rather than social structures and are therefore at risk of slipping from a focus on objective societal stressors to a focus on individual deficiencies in coping and resiliency (Masten, 2001).

Summary

I proposed a minority stress model that explains the higher prevalence of mental disorders as caused by excess in social stressors related to stigma and prejudice. Studies demonstrated that social stressors are associated with mental health outcomes in LGB people, supporting formulations of minority stress. Evidence from between-groups studies clearly demonstrates that LGB populations have higher prevalences of psychiatric disorders than heterosexuals. Nevertheless, methodological challenges persist. To date, no epidemiological study has been conducted that planned to a priori study the mental health of LGB populations. To advance the field, it is necessary that researchers and funding agencies develop research that uses improved epidemiological methodologies, including random sampling, to study mental health within the context of the minority stress model.

I discussed two conceptual views of stress; each implies different points for public health and public policy interventions. The subjective view, which highlights individual processes, suggests that interventions should aim to change the appraisal process, the person's way of evaluating their condition and coping with stress and adversity. The objective view, which highlights the objective properties of the stressors, points to remedies that would aim to alter the stress-inducing environment and reduce exposure to stress. If the stress model is correct, both types of remedies can lead to a reduction in mental health problems, but they have different ethical implications. The former places greater burden on the individual, the latter, on society. Kitzinger (1997) warned psychologists that a subjective, individualistic focus could lead to ignoring the need for important political and structural changes:

If [psychologists'] aim is to decrease "stress" and to increase the "ego strength" of the victim, do they risk forgetting that it is the perpetrator, not the victim, who is the real problem? What political choices are they making in focusing on the problems of the oppressed rather than on the problem of the oppressor? (p. 213)

I endorsed this perspective in illuminating distinctions between viewing the minority person as victim or resilient actor.

However, denying individual agency and resilience would ignore an impressive body of social psychological research that demonstrates the importance and utility of coping with stigma (Branscombe & Ellemers, 1998; Crocker & Major, 1989; Miller & Major, 2000; Miller & Myers, 1998). My discussion of objective versus subjective stress processes is not meant to suggest that there must be a choice of only one of the two classes of intervention options. Researchers and policymakers should use the stress model to attend to the full spectrum of interventions it suggests (Ouellette, 1998). The stress model can point to both distal and proximal causes of distress and to directing relevant interventions at both the individual and structural levels.

Acknowledgements

Work on this article was funded by Grant G13LM007660 from the National Library of Medicine. I thank Drs. Karestan Koenen, Bruce Link, Gerald Oppenheimer, and Sharon Schwartz for their insightful comments on an earlier version of this article and Dr. Ken Cheung for statistical consultation.

References

- Adam, BD. The rise of a gay and lesbian movement. Boston: Twayne; 1987.
- Adams, PL. Prejudice and exclusion as social traumata. In: Noshpitz, JD.; Coddington, RD., editors. *Stressors and the adjustment disorders*. New York: Wiley; 1990. p. 362-391.
- Allen LA, Woolfolk RL, Gara M, Apter JT. Possible selves in major depression. *Journal of Nervous and Mental Disease* 1999;184:739–745. [PubMed: 8994457]
- Allison, KW. Stress and oppressed social category membership. In: Swim, JK.; Stangor, C., editors. *Prejudice: The target's perspective*. San Diego, CA: Academic Press; 1998. p. 145-170.
- Allport, GW. *The nature of prejudice*. Reading, MA: Addison-Wesley; 1954.
- American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 2. Washington, DC: Author; 1973.
- American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 4. Washington, DC: Author; 1994.
- Amnesty International. *Torture and ill-treatment based on sexual identity*. London: Author; 2001. Crimes of hate, conspiracy of silence.
- Antonovsky, A. *Unraveling the mystery of health: How people manage stress and stay well*. San Francisco: Jossey-Bass; 1987.
- Atkinson JH, Grant I, Kennedy CJ, Richman DD, Spector SA, McCutchan A. Prevalence of psychiatric disorders among men infected with human immunodeficiency virus: A controlled study. *Archives of General Psychiatry* 1988;45:859–864. [PubMed: 3415427]
- Badgett LMV. The wage effects of sexual orientation discrimination. *Industrial and Labor Relations Review* 1995;48:726–739.
- Bagley C, Tremblay P. Suicidal behaviors in homosexual and bisexual males. *Crisis* 1997;18:24–34. [PubMed: 9141776]
- Bailey JM. Homosexuality and mental illness. *Archives of General Psychiatry* 1999;56:883–884. [PubMed: 10530627]
- Barnett, RC.; Baruch, GK. Social roles, gender, and psychological distress. In: Barnett, RC.; Biener, L.; Baruch, GK., editors. *Gender and stress*. New York: Free Press; 1987. p. 122-143.
- Barnett, RC.; Biener, L.; Baruch, GK., editors. *Gender and stress*. New York: Free Press; 1987.
- Bayer, R. *Homosexuality and American psychiatry: The politics of diagnosis*. New York: Basic Books; 1981.
- Begg, CB. Publication bias. In: Cooper, H.; Hedges, LV., editors. *The handbook of research synthesis*. New York: Russell Sage Foundation; 1994. p. 399-409.
- Bell, AP.; Weinberg, MS. *Homosexualities*. New York: Simon & Schuster; 1978.
- Binson D, Michaels S, Stall R, Coates TJ, Gagnon JH, Catania JA. Prevalence and social distribution of men who have sex with men: United States and its urban centers. *Journal of Sex Research* 1995;32:245–254.
- Binson, D.; Moskowitz, JMT.; Anderson, K.; Paul, J.; Catania, JA. Proceedings of the American Statistical Association: Section on survey research methods. Alexandria, VA: American Statistical Association; 1996. Sampling men who have sex with men: Strategies for a telephone survey in urban areas in the United States; p. 68-72.
- Branscombe, NR.; Ellemers, N. Coping with group-based discrimination: Individualistic versus group-level strategies. In: Swim, JK.; Stangor, C., editors. *Prejudice: The target's perspective*. New York: Academic Press; 1998. p. 243-266.
- Branscombe, NR.; Ellemers, N.; Spears, R.; Doosje, B. The context and content of social identity threat. In: Ellemers, N.; Spears, R.; Doosje, B., editors. *Social identity: Context, commitment, content*. Oxford, England: Blackwell; 1999. p. 35-58.

- Branscombe NR, Schmitt MT, Harvey R. Perceiving pervasive discrimination among African Americans: Implications for group identification and well-being. *Journal of Personality and Social Psychology* 1999;77:135–149.
- Brewer MB. The social self: On being the same and different at the same time. *Personality and Social Psychology Bulletin* 1991;17:475–482.
- Brooks, VR. *Minority stress and lesbian women*. Lexington, MA: Lexington Books; 1981.
- Brown, TN.; Sellers, SL.; Brown, KT.; Jackson, J. Race, ethnicity, and culture in the sociology of mental health. In: Aneshensel, CS.; Phelan, JC., editors. *Handbook of the sociology of mental health*. New York: Kluwer Academic/Plenum; 1999. p. 167-182.
- Bucci, W. The power of the narrative: A multiple code account. In: Pennebaker, JW., editor. *Emotion, disclosure, & health*. Washington, DC: American Psychological Association; 1995. p. 93-122.
- Burke P. Identity processes and social stress. *American Sociological Review* 1991;56:836–849.
- Cabaj, RP. Homosexuality and neurosis: Considerations for psychotherapy. In: Ross, MW., editor. *The treatment of homosexuals with mental health disorders*. New York: Harrington Park Press; 1988. p. 13-23.
- Cabaj, RP.; Stein, TS. *Textbook of homosexuality and mental health*. Washington, DC: American Psychiatric Press; 1996.
- Cass VC. Homosexual identity formation: A theoretical model. *Journal of Homosexuality* 1979;4(3): 219–235. [PubMed: 264126]
- Cass VC. Homosexual identity formation: Testing a theoretical model. *Journal of Sex Research* 1984;20:143–167.
- Centers for Disease Control and Prevention. *Epi Info (Version 1.12) [Computer software]*. Atlanta, GA: Author; 2001.
- Chan, CS. Issues of sexual identity in an ethnic minority: The case of Chinese American lesbians, gay men, and bisexual people. In: D'Augelli, AR.; Petterson, CJ., editors. *Lesbian, gay, and bisexual identities over the lifespan*. New York: Oxford University Press; 1995. p. 87-101.
- Clark R, Anderson NB, Clark VR, Williams DR. Racism as a stressor for African Americans: A biopsychosocial model. *American Psychologist* 1999;54:805–816. [PubMed: 10540593]
- Cochran SD. Emerging issues in research on lesbians' and gay men's mental health: Does sexual orientation really matter? *American Psychologist* 2001;56:931–947. [PubMed: 11785169]
- Cochran SD, Mays VM. Depressive distress among homosexually active African American men and women. *American Journal of Psychiatry* 1994;151:524–529. [PubMed: 8147449]
- Cochran SD, Mays VM. Lifetime prevalence of suicide symptoms and affective disorders among men reporting same-sex sexual partners: Results from NHANES III. *American Journal of Public Health* 2000a;90:573–578. [PubMed: 10754972]
- Cochran SD, Mays VM. Relation between psychiatric syndromes and behaviorally defined sexual orientation in a sample of the US population. *American Journal of Epidemiology* 2000b;151:516–523. [PubMed: 10707921]
- Cohler, BJ.; Galatzer-Levy, RM. *The course of gay and lesbian lives: Social and psychoanalytic perspectives*. Chicago: University of Chicago Press; 2000.
- Cole SW, Kemeny ME, Taylor SE, Visscher BR. Accelerated course of human immunodeficiency virus infection in gay men who conceal their homosexual identity. *Psychosomatic Medicine* 1996a; 58:219–231. [PubMed: 8771621]
- Cole SW, Kemeny ME, Taylor SE, Visscher BR. Elevated physical health risk among gay men who conceal their homosexual identity. *Health Psychology* 1996b;15:243–251. [PubMed: 8818670]
- Coleman E. The developmental stages of the coming out process. *Journal of Homosexuality* 1981–1982;7 (2–3):31–43. [PubMed: 7346546]
- Committee on Lesbian Health Research Priorities. *Lesbian health: Current assessment and direction for the future*. Washington, DC: National Academy Press; 1999.
- Contrada RJ, Ashmore RD, Gary ML, Coups E, Egeth JD, Sewell A, et al. Ethnicity-related sources of stress and their effects on well-being. *Current Directions in Psychological Science* 2000;9:137–139.
- Cooley, CH. *Human nature and the social order*. New York: Scribner; 1922. Original work published 1902

- Crocker J. Social stigma and self-esteem: Situational construction of self-worth. *Journal of Experimental Social Psychology* 1999;35:89–107.
- Crocker J, Major B. Social stigma and self-esteem: The self-protective properties of stigma. *Psychological Review* 1989;96:608–630.
- Crocker, J.; Major, B.; Steele, C. Social stigma. In: Gilbert, D.; Fiske, ST.; Lindzey, G., editors. *The handbook of social psychology*. 4. Boston: McGraw-Hill; 1998. p. 504-553.
- Crocker, J.; Quinn, DM. Social stigma and the self: Meanings, situations, and self-esteem. In: Heatherton, TF.; Kleck, RE.; Hebl, MR.; Hull, JG., editors. *The social psychology of stigma*. New York: Guilford Press; 2000. p. 153-183.
- Cross, W. Oppositional identity and African American youth: Issues and prospects. In: Hawley, W.; Jackson, A., editors. *Toward a common destiny: Improving race and ethnic relations in America*. New York: Jossey-Bass; 1995. p. 185-204.
- Croteau JM. Research on the work experience of lesbian, gay, and bisexual people: An integrative review of methodology and findings. *Journal of Vocational Behavior* 1996;48:195–209.
- D’Augelli AR, Grossman AH. Disclosure of sexual orientation, victimization, and mental health among lesbian, gay, and bisexual older adults. *Journal of Interpersonal Violence* 2001;16:1008–1027.
- D’Augelli AR, Hershberger SL. Lesbian, gay, and bisexual youth in community settings: Personal challenges and mental health problems. *American Journal of Community Psychology* 1993;21:1–28.
- Dean L, Meyer IH, Sell RL, Sember R, Silenzio V, Bowen DJ, et al. Lesbian, gay, bisexual, and transgender health: Findings and concerns. *Journal of the Gay and Lesbian Medical Association* 2000;4:101–151.
- Deaux K. Reconstructing social identity. *Personality and Social Psychology Bulletin* 1993;19:4–12.
- Deaux, K.; Ethier, K. Negotiating social identity. In: Swim, JK.; Stangor, C., editors. *Prejudice: The target’s perspective*. New York: Academic Press; 1998. p. 301-323.
- D’Emilio, J. *Sexual politics, sexual communities: The making of a homosexual minority in the United States, 1940–1970*. Chicago: University of Chicago Press; 1983.
- de Monteflores C, Schultz SJ. Coming out: Similarities and differences for lesbians and gay men. *Journal of Social Issues* 1978;34:59–72.
- Diamond LM. Sexual identity, attractions, and behavior among young sexual minority women over a 2-year period. *Developmental Psychology* 2000;36:241–250. [PubMed: 10749081]
- Diaz RM, Ayala G, Bein E, Jenne J, Marin BV. The impact of homophobia, poverty, and racism on the mental health of Latino gay men. *American Journal of Public Health* 2001;91:927–932. [PubMed: 11392936]
- DiPlacido, J. Minority stress among lesbians, gay men, and bisexuals: A consequence of heterosexism, homophobia, and stigmatization. In: Herek, GM., editor. *Stigma and sexual orientation: Vol. 4. Understanding prejudice against lesbians, gay men, and bisexuals*. Thousand Oaks, CA: Sage; 1998. p. 138-159.
- Dohrenwend B. Social status and psychological disorders: An issue of substance and an issue of method. *American Sociological Review* 1966;31:14–34. [PubMed: 5903385]
- Dohrenwend, BP. *Adversity, stress, and psychopathology*. New York: Oxford University Press; 1998a.
- Dohrenwend, BP. Theoretical integration. In: Dohrenwend, BP., editor. *Adversity, stress, and psychopathology*. New York: Oxford University Press; 1998b. p. 539-555.
- Dohrenwend BP. The role of adversity and stress in psychopathology: Some evidence and its implications for theory and research. *Journal of Health and Social Behavior* 2000;41:1–19. [PubMed: 10750319]
- Dohrenwend, BP.; Raphael, K.; Schwartz, S.; Stueve, A.; Skodol, A. The structured event probe and narrative rating method for measuring stressful life events. In: Goldberger, L.; Breznitz, S., editors. *Handbook of stress: Theoretical and clinical aspects*. 2. New York: Free Press; 1993. p. 174-199.
- Dupras A. Internalized homophobia and psychosexual adjustment among gay men. *Psychological Reports* 1994;75:23–28. [PubMed: 7984730]
- Durkheim, E. *Suicide: A study in sociology*. New York: Free Press; 1951.
- Eliason MJ. Identity formation for lesbian, bisexual, and gay persons: Beyond a “minoritizing” view. *Journal of Homosexuality* 1996;30(3):31–58. [PubMed: 8743116]

- Espin, OM. Issues of identity in the psychology of Latina lesbians. In: Garnets, LD.; Kimmel, DC., editors. *Psychological perspectives on lesbian and gay male experiences*. New York: Columbia University Press; 1993. p. 348-363.
- Ethier KA, Deaux K. Negotiating social identity when contexts change: Maintaining identification and responding to threat. *Journal of Personality and Social Psychology* 1994;67:243–251.
- Farina A, Allen JG, Saul BB. The role of the stigmatized person in affecting social relationships. *Journal of Personality* 1968;36:169–182. [PubMed: 4232450]
- Faulkner AH, Cranston K. Correlates of same-sex sexual behavior in a random sample of Massachusetts high school students. *American Journal of Public Health* 1998;88:262–266. [PubMed: 9491018]
- Fergusson DM, Horwood JL, Beautrais AL. Is sexual orientation related to mental health problems and suicidality in young people? *Archives of General Psychiatry* 1999;56:876–880. [PubMed: 10530626]
- Fife BL, Wright ER. The dimensionality of stigma: A comparison of its impact on the self of persons with HIV/AIDS and cancer. *Journal of Health and Social Behavior* 2000;41:50–67. [PubMed: 10750322]
- Fleiss, JL. *Statistical methods for rates and proportions*. 2. New York: Wiley; 1981.
- Frible DE, Platt L, Hoey S. Concealable stigmas and positive self-perceptions: Feeling better around similar others. *Journal of Personality and Social Psychology* 1998;74:909–922. [PubMed: 9569651]
- Frible DE, Wortman C, Joseph J. Predicting self-esteem, well-being, and distress in a cohort of gay men: The importance of cultural stigma, personal visibility, community networks, and positive identity. *Journal of Personality* 1997;65:599–624. [PubMed: 9327589]
- Friedman RC. Homosexuality, psychopathology, and suicidality. *Archives of General Psychiatry* 1999;56:887–888. [PubMed: 10530629]
- Fullilove MT, Fullilove RE. Stigma as an obstacle to AIDS action. *American Behavioral Scientist* 1999;42:1117–1129.
- Garnets LD, Herek GM, Levy B. Violence and victimization of lesbians and gay men: Mental health consequences. *Journal of Interpersonal Violence* 1990;5:366–383.
- Garnets, LD.; Kimmel, DC. Lesbian and gay male dimensions in the psychological study of human diversity. In: Garnets, LD.; Jones, JM.; Kimmel, DC.; Sue, S.; Tarvis, C., editors. *Psychological perspectives on human diversity in America*. Washington, DC: American Psychological Association; 1991. p. 137-192.
- Garofalo R, Wolf RC, Kessel S, Palfrey J, DuRant RH. The association between health risk behaviors and sexual orientation among a school-based sample of adolescents. *Pediatrics* 1998;101:895–902. [PubMed: 9565422]
- Gay, Lesbian, and Straight Education Network. *GLSEN's national school climate survey: Lesbian, gay, bisexual and transgender students and their experiences in school*. New York: Author; 1999.
- Gergen KJ. The social constructionist movement in modern psychology. *American Psychologist* 1985;40:266–275.
- Gergen KJ. Psychological science in a postmodern context. *American Psychologist* 2001;56:803–813. [PubMed: 11675987]
- Gibson P. Gay men and lesbian youth suicide. Report of the Secretary's Task Force on Youth Suicide 1989;3:110–142.
- Gilman SE, Cochran SD, Mays VM, Hughes M, Ostrow D, Kessler RC. Risks of psychiatric disorders among individuals reporting same-sex sexual partners in the National Comorbidity Survey. *American Journal of Public Health* 2001;91:933–939. [PubMed: 11392937]
- Goffman, E. *Stigma: Notes on the management of spoiled identity*. New York: Touchstone; 1963.
- Gonsiorek JC. Mental health issues of gay and lesbian adolescents. *Journal of Adolescent Health Care* 1988;9:114–122. [PubMed: 3283088]
- Gonsiorek, JC. The empirical basis for the demise of the illness model of homosexuality. In: Gonsiorek, JC.; Weinrich, JD., editors. *Homosexuality: Research implications for public policy*. Thousand Oaks, CA: Sage; 1991. p. 115-136.
- Gray-Little B, Hafdahl AR. Factors influencing racial comparisons of self-esteem: A quantitative review. *Psychological Bulletin* 2000;126:26–54. [PubMed: 10668349]

- Greenberg JS. A study of the self-esteem and alienation of male homosexuals. *Journal of Psychology* 1973;83:137–143. [PubMed: 4688193]
- Grossman AH, Kerner MS. Self-esteem and supportiveness as predictors of emotional distress in gay male and lesbian youth. *Journal of Homosexuality* 1998;35(2):25–39. [PubMed: 9524920]
- Harry J. Sampling gay men. *Journal of Sex Research* 1986;22:21–34.
- Herek GM. The psychology of sexual prejudice. *Current Directions in Psychological Sciences* 2000;9:19–22.
- Herek, GM.; Berrill, KT. *Hate crimes: Confronting violence against lesbians and gay men*. Thousand Oaks, CA: Sage; 1992.
- Herek GM, Gillis JR, Cogan JC. Psychological sequelae of hate-crime victimization among lesbian, gay, and bisexual adults. *Journal of Consulting and Clinical Psychology* 1999;67:945–951. [PubMed: 10596515]
- Herrell R, Goldberg J, True WR, Ramakrishnam V, Lyons M, Eisen S, Tsuang MT. Sexual orientation and suicidality: A co-twin control study in adult men. *Archives of General Psychiatry* 1999;56:867–874. [PubMed: 10530625]
- Hershberger SL, D’Augelli AR. The impact of victimization on the mental health and suicidality of lesbian, gay, and bisexual youth. *Developmental Psychology* 1995;31:65–74.
- Hetrick, ES.; Martin, AD. Ego-dystonic homosexuality: A developmental view. In: Hetrick, ES.; Stein, TS., editors. *Innovations in psychotherapy with homosexuals*. Washington, DC: American Psychiatric Press; 1984. p. 2-21.
- Hetrick ES, Martin AD. Developmental issues and their resolution for gay and lesbian adolescents. *Journal of Homosexuality* 1987;14(1–2):25–43. [PubMed: 3655346]
- Hobfoll, SE. *Stress, culture, and community: The psychology and philosophy of stress*. New York: Plenum Press; 1998. The social and historical context of stress; p. 1-23.
- Hooker E. The adjustment of the male overt homosexual. *Journal of Projective Techniques* 1957;21:18–31. [PubMed: 13417147]
- hooks, b. *Sisters of the yam: Black women and self-recovery*. Boston: South End Press; 1993.
- Human Rights Watch. *Hatred in the hallways: Violence and discrimination against lesbian, gay, bisexual, and transgender students in U.S. Schools*. New York: Author; 2001.
- Jetten K, Branscombe NR, Schmitt MT, Spears R. Rebels with a cause: Group identification as a response to perceived discrimination from the mainstream. *Personality and Social Psychology Bulletin* 2001;27:1204–1213.
- Jones, EE.; Farina, A.; Hestrof, AH.; Markus, H.; Miller, DT.; Scott, RA. *Social stigma: The psychology of marked relationships*. New York: Freeman; 1984.
- Jorm AF, Korten AE, Rodgers B, Jacomb PA, Christensen H. Sexual orientation and mental health: Results from a community survey of young and middle-aged adults. *British Journal of Psychiatry* 2002;180:423–427. [PubMed: 11983639]
- Jourard, SM. *The transparent self*. New York: Van Nostrand Reinhold; 1971.
- Kertzner RM. Self-appraisal of life experience and psychological adjustment in midlife gay men. *Journal of Psychology and Human Sexuality* 1999;11:43–64.
- Kertzner RM. The adult life course and homosexual identity in midlife gay men. *Annual Review of Sex Research* 2001;XII:75–92.
- Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eshleman S, et al. Lifetime and 12-month prevalence of *DSM-III-R* psychiatric disorders in the United States. Results from the National Comorbidity Survey. *Archives of General Psychiatry* 1994;51:8–19. [PubMed: 8279933]
- Kessler RC, Mickelson KD, Williams DR. The prevalence, distribution, and mental health correlates of perceived discrimination in the United States. *Journal of Health and Social Behavior* 1999;40:208–230. [PubMed: 10513145]
- Kessler RC, Price RH, Wortman CB. Social factors in psychopathology: Stress, social support, and coping processes. *Annual Review of Psychology* 1985;36:572.
- Kitzinger, C. Lesbian and gay psychology: A critical analysis. In: Fox, D.; Prilleltensky, I., editors. *Critical psychology: An introduction*. Thousand Oaks, CA: Sage; 1997. p. 202-216.

- Kobrynowicz D, Branscombe NR. Who considers themselves victims of discrimination? Individual difference predictors of perceived gender discrimination in women and men. *Psychology of Women Quarterly* 1997;21:347–363.
- Krieger, N. Discrimination and health. In: Berkman, LF.; Kawachi, IO., editors. *Social epidemiology*. New York: Oxford University Press; 2000. p. 36-75.
- Krieger N. Theories for social epidemiology in the 21st century: An ecosocial perspective. *International Journal of Epidemiology* 2001;30:677.
- Krieger N, Sidney S. Prevalence and health implication of anti-gay discrimination: A study of Black and White women and men in the CARDIA cohort. *International Journal of Health Services* 1997;27:157–176. [PubMed: 9031018]
- Kruks G. Gay and lesbian homeless/street youth: Special issues and concerns. *Journal of Adolescent Health* 1990;12:515–518. [PubMed: 1772888]
- Laumann, EO.; Gagnon, JH.; Michael, RT.; Michaels, S. *The social organization of sexuality: Sexual practices in the United States*. Chicago: University of Chicago Press; 1994.
- Lazarus, RS. *Emotion & adaptation*. New York: Oxford University Press; 1991.
- Lazarus, RS.; Folkman, S. *Stress, appraisal, and coping*. New York: Springer; 1984.
- Link BG. Understanding labeling effects in the area of mental disorders: An assessment of the effects of expectations of rejection. *American Sociological Review* 1987;52:96–112.
- Link, BG.; Dohrenwend, BP. Formulation of hypotheses about the ratio of untreated cases in the true prevalence studies of functional psychiatric disorders in adults in the United States. In: Dohrenwend, BP.; Dohrenwend, BS.; Gould, M.; Link, BG.; Neugebauer, R.; Hitzig, R., editors. *Mental illness in the United States: Epidemiological estimates*. New York: Praeger; 1980. p. 133-149.
- Link BG, Phelan JC. Conceptualizing stigma. *Annual Review of Sociology* 2001;27:363–385.
- Link BG, Struening EL, Rahav M, Phelan JC, Nuttbrock L. On stigma and its consequences: Evidence from a longitudinal study of men with dual diagnoses of mental illness and substance abuse. *Journal of Health and Social Behavior* 1997;38:177–190. [PubMed: 9212538]
- Linville P. Self-complexity as a cognitive buffer against stress-related illness and depression. *Journal of Personality and Social Psychology* 1987;52:663–676. [PubMed: 3572732]
- Loiacoano, DK. Gay identity among Black Americans: Racism, homophobia, and the need for validation. In: Garnets, LD.; Kimmel, DC., editors. *Psychological perspectives on lesbian and gay male experiences*. New York: Columbia University Press; 1993. p. 364-375.
- Major B, Gramzow RH. Abortion as stigma: Cognitive and emotional implications of concealment. *Journal of Personality and Social Psychology* 1999;77:735–745. [PubMed: 10531670]
- Malyon AK. Psychotherapeutic implications of internalized homophobia in gay men. *Journal of Homosexuality* 1981–1982;7(2–3):59–69. [PubMed: 7346549]
- Marmor, J. Epilogue: Homosexuality and the issue of mental illness. In: Marmor, J., editor. *Homosexual behavior: A modern reappraisal*. New York: Basic Books; 1980. p. 391-401.
- Massey S, Ouellette SC. Heterosexual bias in the identity self-portraits of gay men, lesbians, and bisexuals. *Journal of Homosexuality* 1996;32(1):57–76. [PubMed: 8972399]
- Masten AS. Ordinary magic: Resilience processes in development. *American Psychologist* 2001;56:227–238. [PubMed: 11315249]
- Mayfield W. The development of an internalized homonegativity inventory for gay men. *Journal of Homosexuality* 2001;41(2):53–76. [PubMed: 11482428]
- Mays VM, Cochran SD. Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States. *American Journal of Public Health* 2001;91:1869–1876. [PubMed: 11684618]
- McDaniel JS, Purcell D, D’Augelli AR. The relationship between sexual orientation and risk for suicide: Research findings and future directions for research and prevention. *Suicide and Life-Threatening Behavior* 2001;31(Suppl):84–105. [PubMed: 11326762]
- McDevitt J, Balboni J, Garcia L, Gu J. Consequences for victims: A comparison of bias- and non-bias-motivated assaults. *American Behavioral Scientist* 2001;45:697–713.
- Merton, RK. *Social theory and social structure*. New York: Free Press; 1968. Original work published 1957

- Meyer IH. Minority stress and mental health in gay men. *Journal of Health and Social Behavior* 1995;36:38–56. [PubMed: 7738327]
- Meyer IH. Why lesbian, gay, bisexual, and transgender public health? *American Journal of Public Health* 2001;91:856–859. [PubMed: 11392921]
- Meyer IH. Prejudice as stress: Conceptual and measurement problems. *American Journal of Public Health* 2003;93:262–265. [PubMed: 12554580]
- Meyer IH, Colten ME. Sampling gay men: Random digit dialing versus sources in the gay community. *Journal of Homosexuality* 1999;37(4):99–110. [PubMed: 10482333]
- Meyer, IH.; Dean, L. Internalized homophobia, intimacy, and sexual behavior among gay and bisexual men. In: Herek, GM., editor. *Stigma and sexual orientation: Understanding prejudice against lesbians, gay men, and bisexuals*. Thousand Oaks, CA: Sage; 1998. p. 160-186.
- Meyer IH, Rossano L, Ellis J, Bradford J. A brief telephone interview to identify lesbian and bisexual women in random digit dialing sampling. *Journal of Sex Research* 2002;39:139–144. [PubMed: 12476246]
- Miller, CT.; Major, B. Coping with stigma and prejudice. In: Heatherton, TF.; Kleck, RE.; Hebl, MR.; Hull, JG., editors. *The social psychology of stigma*. New York: Guilford Press; 2000. p. 243-272.
- Miller, CT.; Myers, AM. Compensating for prejudice: How heavyweight people (and others) control outcomes despite prejudice. In: Swim, JK.; Stangor, C., editors. *Prejudice: The target's perspective*. New York: Academic Press; 1998. p. 191-218.
- Mirowsky, J.; Ross, CE. *Social causes of psychological distress*. Hawthorne, NY: Aldine De Gruyter; 1989.
- Morris JF, Waldo CR, Rothblum ED. A model of predictors and outcomes of outness among lesbian and bisexual women. *Journal of Orthopsychiatry* 2001;71:61–71.
- Moscicki EK. Gender differences in completed and attempted suicides. *Annals of Epidemiology* 1994;4:152–158. [PubMed: 8205283]
- Moscicki EK, O'Carroll P, Rae DS, Locke BZ, Roy A, Regier DA. Suicide attempts in the Epidemiologic Catchment Area Study. *Yale Journal of Biology and Medicine* 1988;61:259–268. [PubMed: 3262956]
- Moss, GE. *Illness, immunity, and social interaction*. New York: Wiley; 1973.
- Muehrer P. Suicide and sexual orientation: A critical summary of recent research and directions for future research. *Suicide and Life-Threatening Behavior* 1995;25:72–81. [PubMed: 8553431]
- Nicholson WD, Long BC. Self-esteem, social support, internalized homophobia, and coping strategies of HIV+ gay men. *Journal of Consulting and Clinical Psychology* 1990;58:873–876. [PubMed: 2292639]
- Noell JW, Ochs LM. Relationship of sexual orientation to substance use, suicidal ideation, suicide attempts, and other factors in a population of homeless adolescents. *Journal of Adolescent Health* 2001;29:31–36. [PubMed: 11429303]
- Nungesser, LG. *Homosexual acts, actors, and identities*. New York: Praeger; 1983.
- Operario D, Fiske ST. Ethnic identity moderates perceptions of prejudice: Judgments of personal versus group discrimination and subtle versus blatant bias. *Personality and Social Psychology Bulletin* 2001;27:550–561.
- Ouellette, SC. Inquiries into hardiness. In: Goldberger, L.; Breznitz, S., editors. *Handbook of stress: Theoretical and clinical aspects*. 2. New York: Free Press; 1993. p. 77-100.
- Ouellette, SC. The value and limitations of stress models in HIV/AIDS. In: Dohrenwend, BP., editor. *Adversity, stress, and psychopathology*. New York: Oxford University Press; 1998. p. 142-160.
- Paul JP, Catania J, Pollack L, Moskowitz J, Cachola J, Mills T, et al. Suicide attempts among gay and bisexual men: Lifetime prevalence and antecedents. *American Journal of Public Health* 2002;92:1338–1345. [PubMed: 12144994]
- Pearlin, LI. The social context of stress. In: Goldberger, L.; Breznitz, S., editors. *Handbook of stress: Theoretical and clinical aspects*. New York: Academic Press; 1982. p. 367-379.
- Pearlin, LI. Stress and mental health: A conceptual overview. In: Horwitz, AV.; Scheid, TL., editors. *A handbook for the study of mental health*. New York: Cambridge University Press; 1999a. p. 161-175.

- Pearlin, LI. The stress process revisited: Reflections on concepts and their interrelationships. In: Aneshensel, CS.; Phelan, JC., editors. *Handbook of the sociology of mental health*. New York: Kluwer Academic/Plenum; 1999b. p. 395-415.
- Pennebaker, JW. *Emotion, disclosure, and health*. Washington, DC: American Psychological Association; 1995.
- Peterson JL, Folkman S, Bakeman R. Stress, coping, HIV status, psychosocial resources, and depressive mood in African American gay, bisexual, and heterosexual men. *American Journal of Community Psychology* 1996;24:461-487. [PubMed: 8969447]
- Petrie, KJ.; Booth, RJ.; Davison, KP. Repression, disclosure, and immune function: Recent findings and methodological issues. In: Pennebaker, JW., editor. *Emotion, disclosure, & health*. Washington, DC: American Psychological Association; 1995. p. 223-237.
- Pettigrew, TF. Social evaluation theory: Convergences and applications. In: Levine, D., editor. *Nebraska Symposium on Motivation*. 15. Lincoln: University of Nebraska Press; 1967. p. 241-304.
- Pillard RC. Sexual orientation and mental disorder. *Psychiatric Annals* 1988;18:52-56.
- Pinel E. Stigma consciousness in intergroup contexts: The power of conviction. *Journal of Experimental Social Psychology* 2002;38:178-185.
- Postmes T, Branscombe NR. Influence of long-term racial environmental composition on subjective well-being in African Americans. *Journal of Personality and Social Psychology* 2002;83:735-751. [PubMed: 12219866]
- Random House Webster's Dictionary. New York: Random House; 1992.
- Remafedi G. Suicide and sexual orientation: Nearing the end of controversy? *Archives of General Psychiatry* 1999;56:885-886. [PubMed: 10530628]
- Remafedi G, Farrow JA, Deisher RW. Risk factors for attempted suicide in gay and bisexual youth. *Pediatrics* 1991;87:869-875. [PubMed: 2034492]
- Remafedi G, French S, Story M, Resnick MD, Blum R. The relationship between suicide risk and sexual orientation: Results of a population-based study. *American Journal of Public Health* 1998;88:57-60. [PubMed: 9584034]
- Rich GL, Fowler RC, Young D, Blenkush M. San Diego suicide study: Comparison of gay to straight males. *Suicide and Life-Threatening Behavior* 1986;16:448-457. [PubMed: 3798521]
- Robins, LN.; Regier, DA. *Psychiatric disorders in America: The Epidemiologic Catchment Area Study*. New York: Free Press; 1991.
- Rogler LH, Mroczek DK, Fellows M, Loftus ST. The neglect of response bias in mental health research. *Journal of Nervous and Mental Disease* 2001;189:182-187. [PubMed: 11277355]
- Rosario M, Rotheram-Borus MJ, Reid H. Gay-related stress and its correlates among gay and bisexual male adolescents of predominantly Black and Hispanic background. *Journal of Community Psychology* 1996;24:136-159.
- Rose G. Sick individuals and sick populations. *International Journal of Epidemiology* 1985;14:32-38. [PubMed: 3872850]
- Rosenberg, S.; Gara, M. The multiplicity of personal identity. Self, situations, and social behavior. In: Shaver, PR., editor. *Review of "Personality and Social Psychology"*. Beverly Hills, CA: Sage; 1985. p. 87-113.
- Ross MW. Actual and anticipated societal reaction to homosexuality and adjustment in two societies. *Journal of Sex Research* 1985;21:40-55.
- Ross MW, Rosser SBR. Measurement and correlates of internalized homophobia: A factor analytic study. *Journal of Clinical Psychology* 1996;52:15-21. [PubMed: 8682906]
- Rosser B, Metz M, Bockting W, Buroker T. Sexual difficulties, concerns and satisfaction in homosexual men: An empirical study with implications for HIV prevention. *Journal of Sex and Marital Therapy* 1997;23:61-73. [PubMed: 9094037]
- Rotheram-Borus MJ, Fernandez MI. Sexual orientation and developmental challenges experienced by gay and lesbian youths. *Suicide and Life-Threatening Behavior* 1995;25:26-34. [PubMed: 8553426]
- Rotheram-Borus MJ, Hunter J, Rosario M. Suicidal behavior and gay-related stress among gay and bisexual male adolescents. *Journal of Adolescent Research* 1994;9:498-508.

- Safe Schools Coalition of Washington. Eighty-three thousand youth: Selected findings of eight population-based studies as they pertain to anti-gay harassment and the safety and well-being of sexual minority students. Seattle, WA: Author; 1999.
- Safren SA, Heimberg RG. Depression, hopelessness, suicidality, and related factors in sexual minority and heterosexual adolescents. *Journal of Consulting and Clinical Psychology* 1999;67:859–866. [PubMed: 10596508]
- Saghir MT, Robins E, Walbran B, Gentry KA. Homosexuality: III. Psychiatric disorders and disability in the male homosexual. *American Journal of Psychiatry* 1970a;126:1079–1086. [PubMed: 5411361]
- Saghir MT, Robins E, Walbran B, Gentry KA. Homosexuality: IV. Psychiatric disorders and disability in the female homosexual. *American Journal of Psychiatry* 1970b;127:147–154. [PubMed: 5473144]
- Sandfort TG, de Graaf R, Bijl RV, Schnabel P. Same-sex sexual behavior and psychiatric disorders: Findings from the Netherlands Mental Health Survey and Incidence Study (NEMESIS). *Archives of General Psychiatry* 2001;58:85–91. [PubMed: 11146762]
- Savin-Williams RC. Suicide attempts among sexual-minority youths: Population and measurement issues. *Journal of Consulting and Clinical Psychology* 2001;69:983–991. [PubMed: 11777125]
- Schneider SG, Farberow NL, Kruks GN. Suicidal behavior in adolescent and young adult gay men. *Suicide and Life-Threatening Behavior* 1989;19:381–394. [PubMed: 2609366]
- Schneider SG, Taylor SE, Hammen C, Kemeny ME, Dudley J. Factors influencing suicide intent in gay and bisexual suicide ideators: Differing models for men with and without human immunodeficiency virus. *Journal of Personality and Social Psychology* 1991;61:776–788. [PubMed: 1753332]
- Schwartz S, Carpenter KM. The right answer for the wrong question: Consequences of type III error for public health research. *American Journal of Public Health* 1999;89:1175–1180. [PubMed: 10432902]
- Selye, H. Stress and holistic medicine. In: Sutterley, DS.; Donnelly, GF., editors. *Coping with stress: A nursing perspective*. Rockville, MD: Aspen Systems; 1982. p. 69-72.
- Shade, BJ. Coping with color: The anatomy of positive mental health. In: Ruiz, DS., editor. *Handbook of mental health and mental disorders among Black Americans*. New York: Greenwood Press; 1990. p. 273-289.
- Shadish, WR.; Cook, TD.; Campbell, DT. *Experimental and quasi-experimental designs for generalized causal inference*. New York: Houghton Mifflin; 2002.
- Shadish, WR.; Haddock, CK. Combining estimates of effect size. In: Cooper, H.; Hedges, LV., editors. *The handbook of research synthesis*. New York: Russell Sage Foundation; 1994. p. 261-281.
- Shaffer D, Fisher P, Hicks RH, Parides M, Gould M. Sexual orientation in adolescents who commit suicide. *Suicide and Life-Threatening Behavior* 1995;25:64–71. [PubMed: 8553430]
- Shapiro S. Meta-analysis/shmeta-analysis. *American Journal of Epidemiology* 1994;140:771–778. [PubMed: 7977286]
- Shelton JN. A reconceptualization of how we study issues of racial prejudice. *Personality and Social Psychology Review* 2000;4:374–390.
- Shidlo, A. Internalized homophobia: Conceptual and empirical issues in measurement. In: Greene, B.; Herek, GM., editors. *Lesbian and gay psychology: Vol. 1. Theory, research and clinical applications*. Thousand Oaks, CA: Sage; 1994. p. 176-205.
- Siegel K, Epstein JA. Ethnic-racial differences in psychological stress related to gay lifestyle among HIV-positive men. *Psychological Reports* 1996;79:303–312. [PubMed: 8873819]
- Smart, L.; Wegner, DM. The hidden costs of stigma. In: Heatherton, TF.; Kleck, RE.; Hebl, MR.; Hull, JG., editors. *The social psychology of stigma*. New York: Guilford Press; 2000. p. 220-242.
- Smith, AJ.; Siegel, RF. Feminist therapy: Redefining power for the powerless. In: Rosewater, LR.; Walker, LEA., editors. *Handbook of feminist therapy: Women's issues in psychotherapy*. New York: Springer; 1985. p. 13-21.
- Smyth JM, Stone AA, Hurewitz A, Kaell A. Effects of writing about stressful experiences on symptom reduction in patients with asthma or rheumatoid arthritis. *Journal of the American Medical Association* 1999;281:1304–1309. [PubMed: 10208146]
- Solomon A. The hidden plague. *Out* 2001 July;:38–46.

- Steele CM. A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist* 1997;52:613–629. [PubMed: 9174398]
- Steele CM, Aronson J. Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology* 1995;69:797–811. [PubMed: 7473032]
- Stiles, WB. Disclosure as a speech act: Is it psychotherapeutic to disclose?. In: Pennebaker, JW., editor. *Emotion, disclosure, & health*. Washington, DC: American Psychological Association; 1995. p. 71-91.
- Stokes JP, Peterson JL. Homophobia, self-esteem, and risk for HIV among African American men who have sex with men. *AIDS Education & Prevention* 1998;10:278–292. [PubMed: 9642425]
- Stryker, S.; Statham, A. Symbolic interaction and role theory. In: Lindzey, G.; Aronson, E., editors. *Handbook of social psychology*. New York: Random House; 1985. p. 311-378.
- Swim JK, Hyers LL, Cohen LL, Ferguson MJ. Everyday sexism: Evidence for its incidence, nature, and psychological impact from three daily diary studies. *Journal of Social Issues* 2001;57:31–53.
- Szymanski DM, Chung YB. The lesbian internalized homophobia scale: A rational/theoretical approach. *Journal of Homosexuality* 2001;41(2):37–52. [PubMed: 11482427]
- Tajfel, H.; Turner, JC. The social identity theory of intergroup behaviors. In: Worchel, S.; Austin, WG., editors. *Psychology of intergroup relations*. 2. Chicago: Nelson-Hall; 1986. p. 7-24.
- Thoits P. Self-labeling processes in mental illness: The role of emotional deviance. *American Journal of Sociology* 1985;91:221–249.
- Thoits P. On merging identity theory and stress research. *Social Psychology Quarterly* 1991;54:101–112.
- Thoits, P. Self, identity, stress, and mental health. In: Aneshensel, CS.; Phelan, JC., editors. *Handbook of the sociology of mental health*. New York: Kluwer Academic/Plenum; 1999. p. 345-368.
- Thomas, A.; Sillen, S. *Racism and psychiatry*. New York: Citadel Press; 1991. Original work published 1972
- Troiden RR. The formation of homosexual identities. *Journal of Homosexuality* 1989;17(1–2):45–73.
- Turner, JC. Some current issues in research on social identity and self-categorization theories. In: Ellemers, N.; Spears, R.; Doosje, B., editors. *Social identity: Context, commitment, content*. Oxford, England: Blackwell; 1999. p. 6-34.
- Twenge JM, Crocker J. Race and self-esteem: Meta-analyses comparing Whites, Blacks, Hispanics, Asians, and American Indians and comment on Gray-Little and Hafdahl (2000). *Psychological Bulletin* 2002;128:371–408. [PubMed: 12002695]
- Waldo CR. Working in a majority context: A structural model of heterosexism as minority stress in the workplace. *Journal of Counseling Psychology* 1999;46:218–232.
- Weinberg, MS.; Williams, CJ. *Male homosexuals: Their problems and adaptations*. New York: Oxford University Press; 1974.
- Wheaton, B. The nature of stressors. In: Horwitz, AF.; Scheid, TL., editors. *A handbook for the study of mental health: Social contexts, theories, and systems*. Cambridge, England: Cambridge University Press; 1999. p. 176-197.
- Williamson I. Internalized homophobia and health issues affecting lesbians and gay men. *Health Education Research* 2000;15:97–107. [PubMed: 10788206]
- Woolfolk RL, Novalany J, Gara M, Allen LA, Polino M. Self-complexity, self-evaluation, and depression: An examination of form and content within the self-schema. *Journal of Personality and Social Psychology* 1995;68:1108–1120. [PubMed: 7608857]

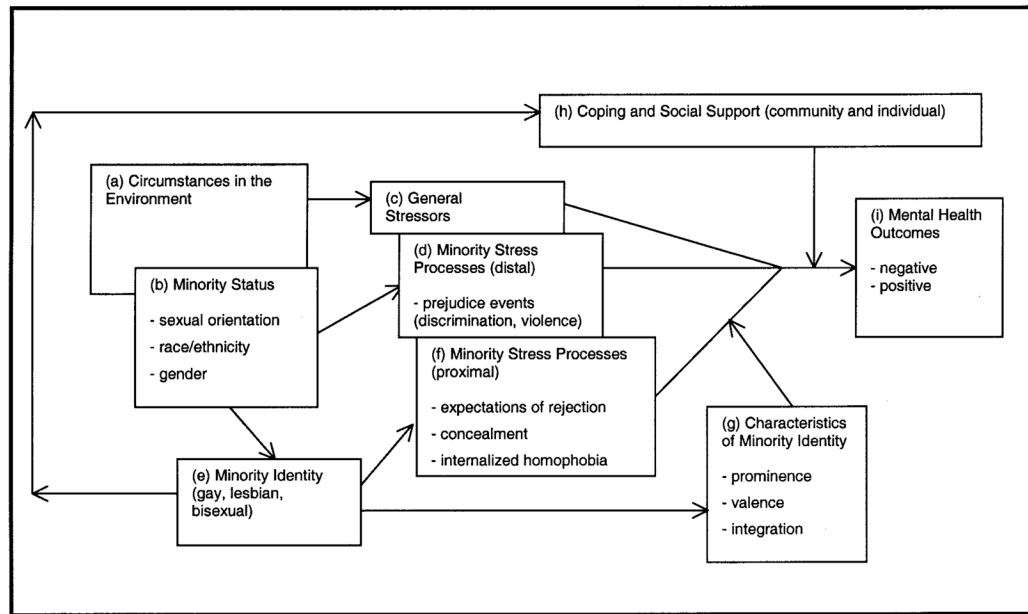


Figure 1. Minority stress processes in lesbian, gay, and bisexual populations.

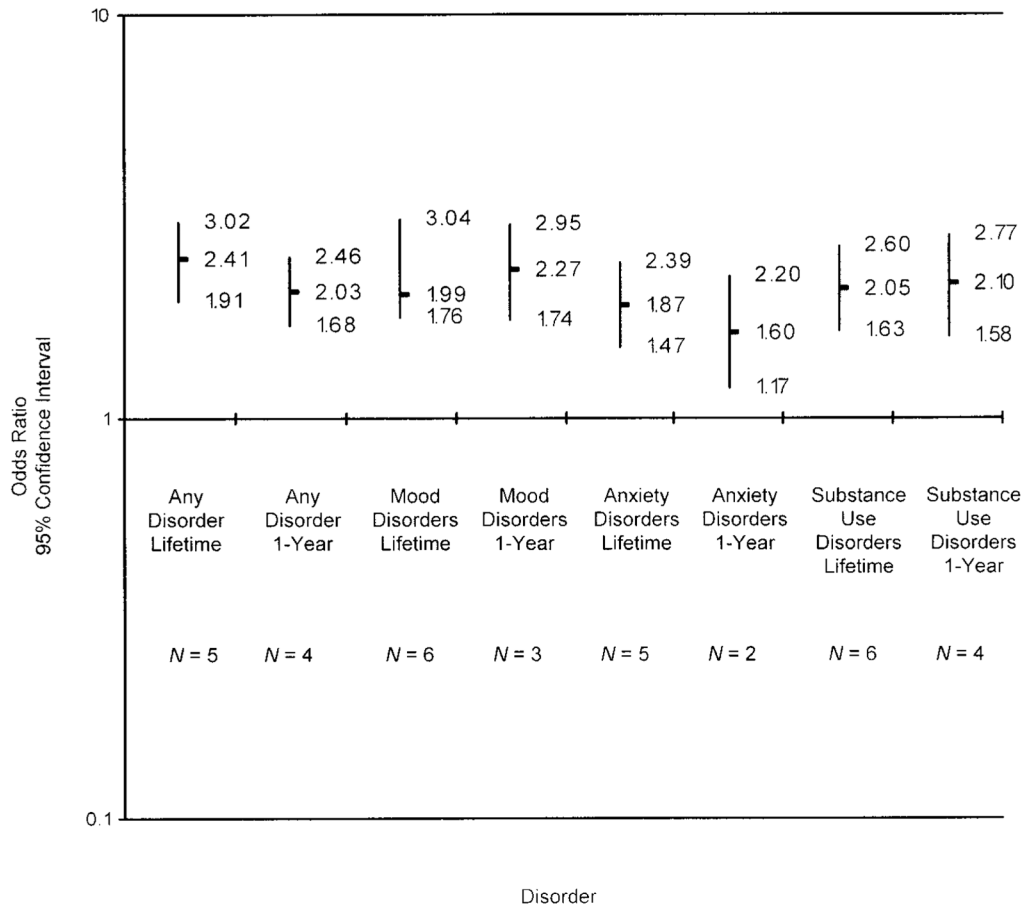


Figure 2. Combined Mantel–Haenszel weighted odds ratios and 95% confidence intervals for lifetime and 1-year prevalence of mental disorders in lesbian, gay, and bisexual versus heterosexual populations. Each calculated combined Mantel–Haenszel weighted odds ratio is displayed between the upper and lower bounds of its respective 95% confidence interval. Odds ratios were recalculated from aggregated data using the Statcalc procedure of the statistical software Epi Info (Centers for Disease Control and Prevention, 2001). This procedure does not adjust for demographics characteristics or any other control variables (e.g., sampling weights) that may be necessary to arrive at unbiased population estimates. These statistics are provided to allow synthesis of the risk for lesbian, gay, and bisexual versus heterosexual respondents in the studies, but they cannot be used as accurate estimates of adjusted population odds ratios.

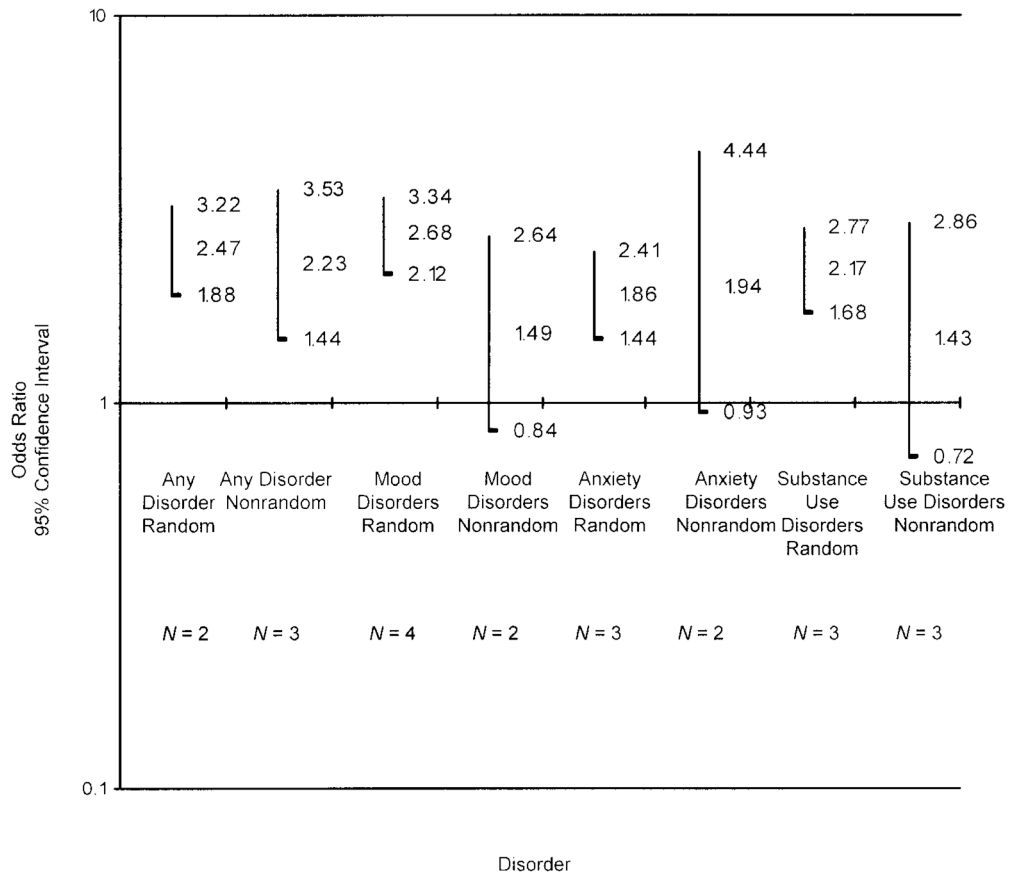


Figure 3. Combined Mantel–Haenszel weighted odds ratios and 95% confidence intervals for lifetime prevalence of mental disorders in studies of lesbian, gay, and bisexual versus heterosexual populations that used random and nonrandom samples. Each calculated combined Mantel–Haenszel weighted odds ratio is displayed between the upper and lower bounds of its respective 95% confidence interval. Odds ratios were recalculated from aggregated data using the Statcalc procedure of the statistical software Epi Info (Centers for Disease Control and Prevention, 2001). This procedure does not adjust for demographics characteristics or any other control variables (e.g., sampling weights) that may be necessary to arrive at unbiased population estimates. These statistics are provided to allow synthesis of the risk for lesbian, gay, and bisexual versus heterosexual respondents in the studies, but they cannot be used as accurate estimates of adjusted population odds ratios.

Prevalence of Mental Disorders: Summary of Findings From Studies That Compared Lesbian, Gay, and Bisexual Populations With Heterosexual Peers

Table 1

| Study | Sample | Subgroup | Prevalence | Disorder | | |
|--------------------------------------|--|---|---------------------------------------|--|--|-----------------------------|
| | | | | Mood and anxiety | Substance use | |
| | | | | | Any | |
| Saghir et al. (1970a) ^d | Homosexuals primarily from three Chicago and San Francisco "homophile" organizations (N = 89 men, 35 women) and never-married heterosexuals (N = 35 men, 43 women) primarily from an apartment complex in Chicago | Men | Lifetime | Mood: 1.2 (0.4, 3.2); anxiety and phobic neurosis: 1.2 (0.3, 6.0) | Alcohol dependence: 1.4 (0.3, 6.7) | 1.5 (0.6, 3.5) |
| Saghir et al. (1970b) ^d | Homosexuals primarily from three Chicago and San Francisco "homophile" organizations (N = 89 men, 57 women) and never-married heterosexuals (N = 35 men, 43 women) primarily from an apartment complex in Chicago | Women | Lifetime | Mood: 1.5 (0.6, 3.6); anxiety and phobic neurosis: 0.96 (0.3, 3.2) | Alcohol dependence: 5.9 (0.7, 133.1) | 3.9 (1.5, 10) |
| Pillard (1988) ^b | Predominantly homosexual men (N = 51) and predominantly heterosexual men (N = 50) aged 25–35, recruited through advertisement ^d | Men | Lifetime | No significant difference for either ^e | Drug use: 1.2 (0.3, 5.0) | 1.7 (0.7, 4.0) |
| Atkinson et al. (1988) ^d | Homosexual men (N = 56) recruited from cohort followed for an AIDS study in San Diego, CA and healthy heterosexual men (N = 22) | Men | Lifetime | MDD: 4.4 (0.8, 30.3); GAD: 15.1 (1.9, 321.0) | Alcohol abuse and dependence: 0.8 (0.3, 2.6) | 4.8 (1.3, 18.2) |
| Fergusson et al. (1999) ^e | New Zealand cohort of youth age 21 who said they were homosexual, gay, lesbian, or bisexual (N = 28; 11 men, 17 women) and heterosexual males and females (N = 979) | Men and women combined | Lifetime | MDD: 4.0 (1.8, 9.3) ; GAD: 2.8 (1.2, 6.5) | Substance abuse and dependence: 1.9 (0.9, 4.2) | |
| Cochran & Mays (2000a) | NHANES-III men age 17–39 who reported any lifetime same-sex sexual partners (weighted N = 78); and those who reported opposite-sex sexual partners (weighted N = 3,214) | Men | Lifetime | Mood: 2.5 (0.9, 7.2) | | |
| Cochran & Mays (2000b) | NHSDA men (N = 98) and women (N = 96) age 18 or older who reported same-sex sexual partners in the year prior to interview and those who reported opposite-sex sexual partners (N = 3,922 men, 5,792 women) | Men | 1-year | MDD: 2.9 (1.4, 6.3) ; GAD: 2.3 (0.5, 9.7) | Alcohol dependence: 1.3 (0.5, 3.2); drug dependence: 2.0 (0.9, 4.9) | 2.3 (1.3, 3.9) |
| Gilman et al. (2001) | NCS men (N = 74) and women (N = 51) aged 15–54 who reported same-sex sexual partners and those who reported opposite-sex partners (N = 2,310 men, 2,475 women) in 5 years prior to interview | Women | 1-year | MDD: 1.8 (0.7, 4.3); GAD: 1.5 (0.5, 4.9) | Alcohol dependence: 2.8 (1.2, 7.0) ; drug dependence: 3.3 (1.2, 8.7) | 1.6 (0.8, 3.5) |
| | | Men | Lifetime ^f | Mood: 1.7 (0.9, 3.0); anxiety: 1.3 (0.8, 2.4) | Substance use: 1.5 (0.8, 2.8) | 1.4 (0.8, 2.4) |
| | | Women | Lifetime ^f | Mood: 2.0 (1.1, 3.5) ; anxiety: 1.8 (1.2, 2.8) | Substance use: 2.4 (1.3, 4.4) | 1.8 (1.1, 2.9) |
| | | Men | 1-year ^b | Mood: 1.6 (0.7, 3.4); anxiety: 1.3 (0.6, 2.6) | Substance use: 1.2 (0.7, 2.2) | 1.5 (0.9, 2.4) |
| Sandfort et al. (2001) | NEMESIS Dutch population survey of adults 18–64 years old who reported same-sex sexual behavior (N = 82 men, 43 women) and those who reported opposite-sex sexual behavior (N = 2,796 men, 3,077 women) in the year prior to interview | Women | 1-year ^g | Mood: 3.4 (1.8, 6.3) ; anxiety: 2.2 (1.2, 4.1) | Substance use: 3.1 (1.4, 6.6) ^g | 2.6 (1.4, 4.7) |
| | | Men | Lifetime | Mood: 3.1 (1.9, 5.0) ; anxiety: 2.7 (1.6, 4.4) | Substance use: 0.8 (0.5, 1.3) | 1.3 (0.8, 2.1) |
| | | Women | Lifetime | Mood: 2.4 (1.3, 4.6) ; anxiety: 1.0 (0.5, 2.0) | Substance use: 3.4 (1.6, 7.3) | 2.6 (1.3, 5.2) |
| | | Men | 1-year | Mood: 2.9 (1.5, 5.6) ; anxiety: 2.6 (1.4, 4.7) | Substance use: 0.9 (0.5, 1.7) | 1.5 (0.9, 2.5) ^b |
| Women | 1-year | Mood: 1.0 (0.4, 2.6); anxiety: 1.0 (0.4, 2.3) | Substance use: 4.0 (1.6, 10.5) | | 1.7 (0.8, 3.3) | |

| Study | Sample | Subgroup | Prevalence | Disorder | |
|-----------------------|---|----------|------------|------------------|----------------|
| | | | | Mood and anxiety | Substance use |
| Mays & Cochran (2001) | U.S.-representative adults, aged 25–74 in the MIDUS study who identified as homosexual or bisexual ($N = 41$ men, 32 women) and heterosexual ($N = 1,382$ men, 1,462 women) | | 1-year | | 2.2 (1.2, 3.8) |

Note. Findings are presented as odds ratios (ORs; with 95% confidence intervals) in reference to the heterosexual comparison group. ORs are adjusted for various control variables when provided in the original article. Significant results, marked in bold, are defined as $\alpha < .95\%$ confidence interval $\neq 1.00$. MDD = major depressive disorder; CA = California; GAD = generalized anxiety disorder; NHANES = National Health and Nutrition Examination Survey; NHSDA = National Household Survey of Drug Abuse; NCS = National Comorbidity Survey; NEMESIS = Netherlands Mental Health Survey and Incidence Study; MIDUS = Midlife Development in the United States.

^aThe study used diagnostic definitions from the Research Diagnostic Criteria.

^bORs were recalculated from published data using the statistical software Epi Info (Centers for Disease Control and Prevention, 2001).

^cIn the case of MDD, Pillard (1988) did not provide data to allow recalculation of ORs, but the author reported that “there were no significant differences between the HT [heterosexual] and HM [homosexual] men” (p. 54).

^dORs were recalculated from published data using the statistical software Epi Info (Centers for Disease Control and Prevention, 2001). Original results and tests of significance were calculated for four subgroups of gay men, including men with AIDS ($n = 15$), men with AIDS-related complex (ARC; $n = 13$), HIV-seropositive men with no AIDS or ARC ($n = 17$), and HIV-seronegative men ($n = 11$). In recalculating the ORs, I combined these four subgroups and compared their prevalence of disorders with that of the heterosexual men ($n = 22$). Using this analysis, I report that the authors found a significant increase in any disorder among gay men, but this finding is not reported in the original article.

^eIn the original article prevalences of disorders were reported for male and female respondents combined because the small number of respondents did not allow stratification by gender. Lifetime prevalence for any disorder was not reported, but the gay group had a higher prevalence of comorbid disorders (two or more diagnoses; OR = 5.9 [2.4, 14.8]).

^fORs were calculated using the statistical software Epi Info (Centers for Disease Control and Prevention, 2001). Data for lifetime prevalences, which were not reported in the original article, were provided by S. E. Gilman (personal communication, October 16, 2002).

^gThere is a discrepancy between the level of significance reported here for the calculated OR and the level of significance reported in the original article. In the original, the authors reported that 19.5% ($SE = 7.8$) of women with same-sex sexual partners and 7.2% ($SE = 0.5$) of women with opposite-sex sexual partners had any substance use disorder, but this difference is not indicated as reaching significance at the .05 level.