

Ageing Under the Rainbow:
The Interrelations Between Age, Sense of Belonging, and Mental Health Among
Australian Gay Men

by

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Statement of Authorship

Except where overt reference is made in the text of this manuscript, this body of work does not include information that has been published elsewhere or been removed in full or part from a thesis by which I have been eligible for or been awarded another degree or diploma. No individual's work has been used without appropriate acknowledgement.

Signature: _____

Date: _____

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Abstract

The relationship between gay men's age, sense of belonging and mental health is not well understood. This research investigated the interrelations between gay men's age, sense of belonging (to the general community, the broader gay community, gay groups and with gay friends) and mental health by testing four models: direct, mediation, additive and moderation. Participants were a community sample of 177 Australian gay men, aged 18 to 79 years, recruited through a variety of sources including gay men's events and the Internet. Participants completed the Sense of Belonging Instrument-Psychological, the Centre for Epidemiological Studies-Depression Scale, the Suicide Subscale of the General Health Questionnaire, and the Sense of Belonging within Gay Communities Scale. Testing of direct relationships revealed that depressive symptoms and suicidal ideation were directly related to each of the four aspects of belonging. Age had a direct negative relationship with depressive symptoms. A path model revealed that a sense of belonging to the general community mediated the relationships between a sense of belonging to gay groups and gay friends, and mental health. Support for the additive models indicated that fewer depressive symptoms were independently associated with older age, and a higher sense of belonging to each of the four aspects of belonging. Age moderated the relation between a sense of belonging to the general community and suicidal ideation, such that younger gay men experienced a stronger protective value of a sense of belonging to the general community. Results highlighted the importance of a sense of belonging to the general community, as a sense of belonging to the three levels of the gay community did not predict any unique variance in mental health beyond that accounted for by the general community. Implications for directly improving gay men's mental health across the life span by enhancing their sense of belonging to the general community, and indirectly by enhancing their sense of belonging to gay groups and with gay friends, are discussed.

Chapter 1: Introduction

1.1. Gay Men's Mental Health

There is a paucity of research about age-related differences in gay men's mental health. Gay men of all ages have traditionally been classed together as a heterogeneous cohort in mental health research. This has resulted in few studies examining age-related effects on gay men's mental health. Research in the field has predominantly focussed upon broad comparisons between heterosexual and gay men's mental health. Barriers to achieving a representative sample of gay men have resulted in an overrepresentation of the experiences of younger gay men connected with gay communities. The experiences, needs and concerns of older gay men have been unrecognised and largely ignored from a policy, practice and research perspective (Price, 2005). Consequently, there is little known about the relationship between ageing and gay men's mental health and well-being.

1.1.1. Evidence for Diminished Gay Men's Mental Health

There is evidence to suggest that gay men experience an elevated presence of psychiatric morbidity compared with their heterosexual counterparts (Mays & Cochran, 2001). Gay men in the United States (US) are more likely to meet the criteria for major depressive disorder and panic disorder, and generally experience a greater degree of psychological distress than heterosexual men (Cochran & Mays, 2000b; Cochran, Sullivan, & Mays, 2003). Twin-based research reveals that middle-aged gay men in the US who are a twin have a significantly higher prevalence of suicidal ideation and suicide attempts compared with their heterosexual twin (Herrell et al., 1999). A 21-year longitudinal study in New Zealand found that gay men have an increased lifetime risk of major depressive disorder, suicidal ideation and suicide attempts compared to heterosexual men (Fergusson, Horwood, & Beautrais, 1999). A summary of sexual orientation-related trends in men's

psychopathology relating to suicidal ideation, completed suicide, and major depressive disorder follows.

1.1.1.1. Suicidal Ideation and Completed Suicide

Research has predominantly focussed upon the sexual orientation-related differences in suicidal ideation and suicide attempts among adolescents and younger males. A review of the literature of adjustment problems experienced by gay, lesbian and bisexual adolescents in the US and Canada revealed that the rate of past suicide attempts in this population ranges between 11% and 42% (Anhalt & Morris, 1998). This review also identified considerable variance in the research regarding repeated suicide attempts, ranging from 9% to 52%. These figures mainly reflect the variance in rates among younger men, as only two of the studies reviewed contained a female sample.

Methodological problems identified in this review includes the use of selective recruitment strategies (e.g., bars, support agencies), the diversity of the quality of instruments used to measure suicide attempts and suicidal ideation, and the absence of a heterosexual comparison group in many studies (Anhalt & Morris, 1998). This review of the literature identified that there is little controlled research regarding sexual orientation-related differences despite the range of studies that have investigated suicidal ideation and suicide attempts among adolescents and younger adults.

One population-based study in the US investigated sexual orientation and suicide risk in a sample of adolescents (Remafedi, French, Story, Resnick, & Blum, 1998). The sample consisted of 212 males and 182 females who described themselves as being gay male, lesbian or bisexual, and a gender-matched sample of 336 heterosexual respondents. All participants completed measures of their suicidal ideation, intent, and self-reported suicide attempts. Results revealed that suicide attempts were reported by 28% of the gay/bisexual males, 21% of the lesbian/bisexual females, 15% of the heterosexual females,

and 4% of the heterosexual males. Analysis revealed that suicidal intent and attempts were only associated with the gay/bisexual male sexual orientation. This research reveals evidence of an association between suicide risk and homosexuality/bisexuality among adolescent males. In this population-based study the results for the gay male and bisexual respondents were combined. This practice of combining results prevents further understanding of any differences between the gay and bisexual male adolescents. Relevant differences have been found in the adult literature, such as evidence that bisexual adults in the US have increased rates of self-injurious behaviour compared with gay and lesbian adults (Balsam, Beauchaine, & Mickey, 2005).

This finding of an increased risk of suicidal ideation and suicide attempts among gay male adolescents has been replicated in other research. A review of research in the US and in New Zealand found that gay male adolescents have a rate of suicidal behaviour that is between two and eight times greater than among heterosexual adolescents (Bagley & Tremblay, 2000). The sexual orientation difference was greatest for the suicidal behaviours requiring medical attention. In other research, a longitudinal study of 2,924 Norwegian youth found that same-sex sexual contact was associated with the increased probability of past suicide attempts (Wichstrom & Hegna, 2003). Same-sex sexual contact was associated with the increased probability of future suicide attempts among the male youth only. Recent research in the US also identified gay, lesbian and bisexual adolescents as having higher rates of suicidal ideation and suicide attempts than heterosexual adolescents (Silenzio, Pena, Duberstein, Cerel, & Knox, 2007).

Recent research recruited gay men, lesbians and bisexual participants and their siblings and compared their mental health and their use of mental health services (Balsam et al., 2005). The sample consisted of 533 heterosexual adults, 558 gay men and lesbians, and 163 bisexual participants living in the US. The age range of participants was not

reported, however the sample had an average age of 36 years. Participants completed ratings of suicidal ideation, suicide attempts, self-injurious behaviour, use of therapy, psychiatric hospitalisation, psychiatric medication, self-esteem and general satisfaction with life. A series of *t*-tests compared the gay, lesbian and bisexual participants with the sibling group. Analyses revealed no significant group differences on any of the dependent measures. Multilevel modelling analyses revealed that sexual orientation significantly predicted suicidal ideation, suicide attempts, self-injurious behaviour and use of mental health services. Although this research investigated suicidal ideation and suicide attempts among same-sex attracted adults, no age-related associations were investigated.

Australian research investigated factors associated with suicidal ideation in a large sample of Australian men (Abelson, Lambevski, Crawford, Bartos, & Kippax, 2006). The sample consisted of 529 heterosexual men, 656 gay men and 115 bisexual men, aged 18 to 50 years. Participants were recruited through nightclubs, gyms, social and political organisations, political parties and other organisations. A large number of variables were found to be associated with increased suicidal ideation, including older age, low social class, depressive symptoms, unemployment, living alone and low levels of social interaction. Results also indicated that sexual orientation was related to suicidal ideation, such that the gay and bisexual men were more likely than the heterosexual men to have reported suicidal ideation. Multiple regression analysis revealed that sexual orientation, depressive symptoms, and their interaction were the most important predictors of suicidal ideation, with a large effect size ($R^2 = 0.32$, $f^2 = 0.47$). This research identified older age as a risk factor for increased suicidal ideation, however age-related effects for gay and bisexual men aged over 50 years cannot be determined from this research due to the limited sampling frame.

The pattern of under representing older people in this line of research was also evident in an Austrian study investigating sexual orientation-related risk factors associated with suicidality (Ploderl & Fartacek, 2005). Less than 6% of the gay, lesbian and bisexual sample was aged over 60 years, despite this age group representing 21% of the Austrian population. The sample consisted of 358 gay, lesbian and bisexual adults, who were compared with 267 heterosexual adults. Results indicated that the gay, lesbian and bisexual sample had a significantly elevated rate of current suicidal ideation and had a greater lifetime history of suicide attempts compared with the heterosexual sample. The research identified older age as a significant predictor of suicidal ideation, however no interpretation or discussion of this finding was provided.

Despite older gay men being largely absent from the body of suicide research, the rate of suicide among older men is a considerable public health issue. Australian men of all ages are nearly four times more likely to die from suicide than are women (Australian Bureau of Statistics, 2004). Australians aged 65 years or older have a 50% greater chance of completing suicide than the population as a whole (Australian Bureau of Statistics, 2000). The high rate of suicide among older Australians is consistent with international research revealing that in almost all countries, older adults have the highest completed suicide rate of any age group (Miller, Segal, & Coolidge, 2001). The highest age-specific rate of death by suicide among Australian men in 2004 was the 30-34 years age group and the lowest was in the 15-19 years age group (Australian Bureau of Statistics, 2006). Following this peak at age 30-34 years, the age-specific rate of suicide declines until the 50-59 year age range. However after the age of 60, the rate of suicide steadily increases again in every age range, reaching a second peak in the 75+ age range. Although the rate of suicide in men peaks in the 30-34 year age range, the factors associated with the high rate of suicide among older men are not well understood.

With research and preventative strategies being directed at youth suicide, it is not well known that in almost all industrialised nations, men aged 75 and over have the highest suicide rate among all age groups (Szanto et al., 2002). Although suicide attempts are more common among younger people, suicide attempts in older men are often well planned and involve more lethal methods (Szanto et al., 2002). There is evidence to suggest that the risk of suicide in older males is elevated by the presence of depression (Kraaij, Arensman, & Spinhoven, 2002). Older men who attempt or complete suicide commonly have an underlying major depressive disorder (Cornwell et al., 1996). Psychological autopsy studies in the US have found that depression is the most common psychiatric diagnosis in older men who suicide, compared with the most common diagnosis of alcohol dependence among younger men who suicide (Cornwell et al., 1996).

1.1.1.2. Depression and Other Psychopathology

A review of the literature reveals that the majority of psychological research on gay men's mental health has investigated psychological factors associated with the contraction and implications of HIV/AIDS. Consequently there is only limited research about gay men's mental health in terms of the prevalence of depression and other disorders. The majority of research is limited by small sample sizes, convenience sampling, and a lack of appropriate comparison groups. A brief review of the research available on the prevalence of depression and other psychopathology among gay men follows.

The relationship between sexual orientation and affective disorders was investigated in a large sample of men from the US (Cochran & Mays, 2000a). The sample consisted of 3,648 men aged 17 to 39 years who were assessed for their lifetime prevalence rates of symptoms associated with affective disorders, and provided a history of the genders of their sexual partners. Although the lifetime prevalence of affective disorders was not related to a history of same-sex sexual experiences, a trend emerged that there was

a greater prevalence of recurrent depression among the homosexually experienced men than among the exclusively heterosexually experienced men. In addition, the homosexually experienced men first experienced depressive symptoms at a younger age than the exclusively heterosexually experienced men. A significant limitation of this research was that sexual orientation was not directly assessed, only implied from the history of sexual partners. It is unclear from these findings if the increased prevalence of recurrent depression among men with a lifetime history of male sexual partners is related to sexual orientation itself, or the potential conflict associated with a lifetime history of male sexual partners.

In other research, a representative sample of 2,917 adults in the US aged between 25 and 74 years were assessed in terms of their psychiatric morbidity, distress and mental health service use (Cochran et al., 2003). The results for the homosexual and bisexual respondents were combined, representing 3% of the total sample. The gay and bisexual men were three times more likely to meet the diagnostic criteria for depression and were almost five times more likely to meet the criteria for panic disorder than the heterosexual men. The gay and bisexual men reported higher levels of current and past psychological concerns, and were more likely to have seen a mental health professional in the past twelve months. Overall, this population-based study suggests there are significant differences in psychiatric morbidity and service use between gay/bisexual men and heterosexual men in the US.

Research has also investigated the increased prevalence of psychopathology among sub-populations of younger gay men in the US. In a study investigating the mental health of homeless adolescents, 84 gay, lesbian, bisexual and transgender (GLBT) homeless adolescents were matched with 84 heterosexual homeless adolescents in terms of age and gender (Cochran, Stewart, Ginzler, & Cauce, 2002). The study found that the GLBT

adolescents were more likely to leave home, were victimised more often, used highly addictive substances more frequently, had higher rates of psychopathology, and had more sexual partners than the heterosexual participants. The gay and bisexual males were more likely to have experienced physical and sexual victimisation than the female participants. This research identified an increased prevalence of psychopathology and risk-taking behaviour among homeless gay male and bisexual adolescents.

A large study was conducted in the UK to establish a more comprehensive understanding of the mental health issues experienced by gay men and lesbians (King et al., 2003). Participants in the research were 656 gay men, 505 heterosexual men, 430 lesbians and 588 heterosexual women. Although a representative sample was sought, only 11% of the sample was aged 55 years or older. Participants participated in a structured clinical interview, which recorded information about their history of mental health symptoms, and participants completed measures of quality of life, general health, social support and alcohol use. The gay men scored significantly higher than the heterosexual men on the clinical interview schedule and on the health questionnaire, indicating poorer quality of life and greater psychological distress. The gay men were more likely to have used recreational drugs, and were more likely to have inflicted self-harm, with 65% citing their sexual orientation as wholly or partly the motive for their self-harm. Furthermore, the gay men were more likely than the heterosexual men to have consulted a mental health professional, or to have sought assistance from their general practitioner for mental health issues. The study provides strong evidence of elevated levels of general distress and psychopathology among gay men.

The findings of King et al. (2003) are limited due to a number of methodological constraints. Due to the small sample size of men aged over 55 years, the results generally reflect the mental health issues of younger gay men. It cannot be established from these

results if older gay men's mental health follows a similar pattern to the younger gay men's, or if there are other relevant age-related factors impacting upon gay male mental health. The emphasis upon younger gay men's mental health in this research is consistent with a broader trend of not representing older gay men and consequently not investigating ageing itself in mental health research.

A small body of research has focussed upon older gay men's mental health. In a widely referenced study, 416 gay, lesbian and bisexual adults from the US and Canada aged 60 to 91 years participated in research evaluating their current mental health, and reflecting upon how it had changed in the previous five years (D'Augelli, Grossman, Hershberger, & O'Connell, 2001). Participants were predominantly recruited through agencies and groups providing social and recreational services to older gay, lesbian and bisexual adults. They were asked about their internalised homophobia, self-esteem, loneliness, alcohol abuse, drug abuse, and suicidal ideation. When compared with the older lesbians and bisexuals, the older gay men experienced greater personal discomfort about their sexual orientation, and were more likely to think about suicide because of it. Participants who had been physically assaulted reported lower self-esteem, more loneliness, and poorer mental health. Nearly three quarters of the older gay men had experienced some kind of sexual orientation-related victimisation. Those who had been physically attacked were more likely to have attempted suicide. This research identifies significant mental health risks for older gay men that are associated with their social isolation and experiences of sexual orientation victimisation.

Although this research was ground-breaking by specifically investigating older gay men's mental health, a number of methodological problems do not allow a full understanding of their mental health to emerge. The absence of heterosexual and younger comparison groups eliminated the possibility of making these important comparisons. The

recruitment strategy for this research was predominantly through established services for older gay men, therefore the results do not represent the experiences and mental health of older gay men disconnected from gay services. It is also unlikely to represent older gay men who live in places where such services are unavailable. The absence of a younger comparison group did not allow the exploration of generational effects, which was the very question the researchers aimed to explore.

Research has investigated whether increasing age has a greater negative impact upon the self-concept of gay men when compared with heterosexual men (Carlson & Steuer, 1985). Participants were 165 gay men and 72 heterosexual men in the US aged 17 to 78 years. Correlational analysis on the relationship between age and self-esteem revealed no differences between the heterosexual and gay men. A significant but weak negative correlation was found between age and depression for the gay men, such that there was some evidence that the gay men became less depressed as they aged. This research is one of the few studies that has specifically investigated age-related effects upon gay men's mental health.

The finding from the Carlson and Steuer (1985) study is consistent with a wide body of research finding older men to be less depressed than younger men (Goldberg, Breckenridge, & Sheikh, 2003; Weissman, Leaf, & Bruce, 1988). The Australian National Mental Health and Wellbeing survey, released in 1997, found that affective disorders increase through the middle years in men, and peaks in the 35-44 year age range (Australian Bureau of Statistics, 1997). A study of a community sample of 8,580 participants in the UK suggested a similar trend (Melzer, Buxton, & Villamil, 2004). The study revealed a decline in the prevalence of all common mental disorders in men after age 65, around the conventional age of retirement (Melzer et al., 2004). In particular, the rate of depression dropped significantly from 3% in the 50-64 year-old sample to 0.3% in the

65-74 year-old sample. The available evidence from the general population suggests that the prevalence of depression in men decreases with age.

Research in Finland suggests that the decreased rate of depression in older men may be a direct consequence of inadequate detection and diagnosis in older men (Suominen, Isometsa, & Lonnqvist, 2004). Depression and other indicators of suicide are often not diagnosed in older patients until after a suicide attempt (Suominen et al., 2004). The identification of depression can also be complicated by co-existent physical illness and the tendency for men to complain less about emotional distress and psychological difficulties (Murray et al., 2006). Psychological autopsy studies in the US reveal a clear link between depression and completed suicide: 76% of elderly adults who completed suicide had diagnosable psychopathology, including 54% with major depression and 11% with minor depression (Cornwell et al., 1996). Given this clear relationship between depression and suicide in older men, the reported low prevalence of depression among older men is inconsistent with elevated rates of suicide.

Research investigating pathways to the development of depression in older men reveals that loneliness is strongly associated with the development of depression. Research conducted on a non-clinical sample of 217 men from New Zealand, aged 65 years and older, investigated the relationship between loneliness, health and depression (Alpass & Neville, 2003). Hierarchical multiple regression revealed that the most significant predictor of depression was the measure of loneliness, with a large effect size ($R^2 = 0.44$, $f^2 = 0.63$). Other research into older adults living independently in retirement villages in the US found that loneliness uniquely contributed to the prediction of depression in the older adults, after the demographic, social and health-related variables were controlled for in the regression model (Adams, Sanders, & Auth, 2004). Although little research has been conducted, increased loneliness among older gay men is thought to be associated with

lower self-esteem, increased internalised homophobia and increased suicidal ideation related to sexual orientation (D'Augelli et al., 2001).

1.1.2. Summary of Gay Men's Mental Health

There are significant gaps in the research regarding gay men's mental health. The research that has been conducted reports higher rates of suicidal ideation and depression among gay men compared with heterosexual men. A review of the literature reveals that there is almost no research investigating age-related differences in gay men's mental health or age-related factors that may account for the increased psychopathology among gay men. The limited research that has been conducted provides some evidence that older age among gay men is associated with a reduced risk of depression, however other evidence suggests that older age is associated with an increased risk of suicidal ideation.

Research upon older heterosexual men suggests that loneliness is a key causal factor in the development of depression. It is currently unknown if the increased prevalence of depression and suicidal ideation among gay men is related to their increased risk of experiencing loneliness due to a poor sense of belonging. A review of the literature follows, suggesting that the link between loneliness and depression is due to an important and enduring relationship between a sense of belonging, depression and suicidal ideation.

1.2. Sense of Belonging and Mental Health

The psychological literature has only relatively recently moved from a theoretical interest in a sense of belonging, to a demonstration of its important relationship with mental health. Interest in a sense of belonging dates back to some of the earliest writing in psychology and is clearly linked to many of the key learning principles that are now widely accepted. Many contemporary schools of psychology have incorporated an

understanding about the critical role of belonging in the development of positive mental health.

1.2.1. Theoretical Origins of Sense of Belonging

In some of the earliest writings in psychology, a sense of belonging was identified as a core component of mental health and psychological well-being. Early writings discussed the notion of abulia, meaning a weakened mind associated with a lack of will or initiative (Janet, 1901). It was suggested that belonging to certain groups was associated with increased abulia due to the development of pervasive doubt about oneself in comparison to others. Interest in the psychological concept of belonging continued through the 1930s. Thorndike wrote about the influence of belonging between the stimulus and the response in the human learning process (Thorndike & Lorge, 1935). Thorndike believed that a key element of the law of effect was that a sense of belonging had to exist between the stimulus and the response. The law of effect suggests that responses that are closely followed with satisfaction become firmly attached to the situation, and are more likely to recur when the situation is repeated (Thorndike, 1898). The law of effect laid the groundwork for the development of the well known psychological laws of operant and classical conditioning (Mowrer, 1960).

Thorndike later revised the law of effect by emphasising the importance of the perception of a sense of belonging between the stimulus and the response (Thorndike & Lorge, 1935). For example, if a mother praises a child every time the child puts on their own clothes, the reinforcing value of the praise is dependent upon the extent to which the child believes the praise is connected to their own behaviour. In this case, the ‘connectionism’ or sense of belonging between the events mediates the reinforcing value of the praise (Tolman, 1936). Thorndike’s theory emphasised that belonging is critical for learning due to a shared understanding about the intentionality of events.

Thorndike's ideas undoubtedly had a strong influence upon Abraham Maslow, with whom he had worked at Columbia University in the 1930s (Kimble, Wertheimer, Boneau, & White, 1991). Maslow had previously obtained his PhD at the University of Wisconsin, where he worked and published with Harlow on animal learning (Maslow, Harlow, & Uehling, 1932). Harlow is best known for his experimentation on rhesus monkeys, finding that the satisfaction of the need for affection created a stronger bond between mother and infant than did the mother meeting the infant's physical needs (Harlow, 1964). Maslow's earlier training with Thorndike and his collaborative work with Harlow undoubtedly influenced his subsequent ideas about the critical role of belonging and attachment in his theory of human motivation.

Maslow believed there is a prioritisation of human needs, which is now famously known as the hierarchy of needs (Maslow, 1943). He proposed that human needs are arranged in hierarchies of pre-potency, such that the appearance of one need usually rests upon the satisfaction of another more pre-potent need. Maslow believed that once the basic physiological needs are met, humans are motivated by the need for love, affection and belonging (Maslow, 1943). He believed that people are driven to develop relationships with other individuals, and are driven to belong to groups and the general community. Maslow's theory stressed that a sense of belonging was the essential and only foundation upon which a positive sense of self can develop. This theory was among the first to draw a clear connection between mental health and a sense of belonging.

The advent of the cognitive model in the 1960s marked a shift away from the drive theory proposed by Maslow. At the core of the cognitive model is the belief that it is not situations themselves that determine how people feel, rather it is determined by the way a person construes or interprets a situation (Beck, 1964). Cognitive theory proposes that during childhood people develop enduring core beliefs or schemas about themselves, other

people and the world (Beck, 1995; Young, Klosko, & Weishaar, 2003). These core beliefs are at the most fundamental level of the personality and a sense of self. It follows that the development of maladaptive schemas relating to a sense of disconnection and rejection are the most powerful and destructive schemas, due to the pervasive sense of alienation from others that develops from these schemas (Young et al., 2003). Within contemporary cognitive-behavioural theory, a failure to develop a sense of belonging is considered to be critically linked to pathological mental health (Young et al., 2003).

In the early 1990s, Hagerty and associates began to specifically address the theoretical shortcomings in the psychological literature about the importance of human relatedness and belonging (Hagerty, Lynch-Sauer, Patusky, & Bouwsema, 1993). The theory of human relatedness was derived from the established literature, and incorporates understandings about factors related to attachment, alienation, loneliness, and social support. Human relatedness is thought to be a function of the perceived quality of the interface between an individual and their relationships with persons, objects, groups and natural environments (Hagerty et al., 1993). It also relates to the level of comfort associated with this involvement with others and the environment. Poor human relatedness is theorised to be associated with poor mental health due to the discomfort experienced when relating to others.

Sense of belonging is identified as a key competency that relates to an individual's capacity for achieving human relatedness (Hagerty, Lynch-Sauer, Patusky, Bouwsema, & Collier, 1992). It relates to the extent to which an individual experiences that they are an integral part, and have a valued role, in a system or environment (Hagerty et al., 1993; Hagerty et al., 1992). This definition acknowledges that individuals can be part of many different communities, and it has two distinct attributes. First, sense of belonging relates to the desire for meaningful involvement (Hagerty et al., 1992; Hagerty & Patusky, 1995).

These antecedents of a sense of belonging need to exist before there is sufficient motivation to seek meaningful involvement. Second, a psychological sense of belonging relates to the actual feelings of being valued, needed, or accepted by others (Hagerty et al., 1993). A psychological sense of belonging is also determined by the extent to which an individual perceives that they fit, and that they are in harmony with the system or the environment (Hagerty & Patusky, 1995). A positive sense of self, and consequently good mental health, is thought to be a consequence of a sense of belonging achieved through feeling valued, needed and accepted within a system or environment.

1.2.2. Sense of Belonging and the Biopsychosocial Model

The biopsychosocial model, first proposed by Engel (1977), has become the dominant paradigm in a range of disciplines including medicine, psychology and social work (Garland & Howard, 2009). The biopsychosocial model proposes that health can only be adequately understood by considering all levels of an individual's functioning: biological, psychological and social (Sperry, 2008). The biopsychosocial model is broader and more integrated than the biomedical or psychosocial models and can accommodate the growing evidence for the neuroplasticity of the brain (Garland & Howard, 2009). From this paradigm, physical and emotional health is best understood as a combination of biological, psychological and social factors. The longstanding interest in the relationship between a sense of belonging and mental health is consistent with the biopsychosocial model, with a sense of belonging relating to individual psychological factors and the social context in which mental health disorders develop.

Experiences such as being gay male or lesbian in a predominantly heterosexual society highlight the interplay between biological, psychological and social factors influencing physical and mental health. Homosexuality itself is commonly understood as a complex biopsychosocial phenomenon. The American Psychological Association

promotes that the biopsychosocial model is the best fit of current knowledge about the cause of sexual orientation, with the view that sexual orientation is shaped at an early age through complex interactions of biological, psychological and social factors (American Psychological Association, 2007).

The biopsychosocial model has been applied to understanding the disenfranchised grief experienced by some gay men following the death of a partner (Walter & McCoyd, 2009). It has been suggested that when a gay man loses his partner, his grief can be intensified by the lack of mainstream recognition of his relationship and the lack of a valid transitional role as a gay male widower. Even if a gay man openly discloses his sexual orientation among family and friends, the grieving process can be inhibited in contexts such as the workplace where there may be less open disclosure of sexual orientation. It has been suggested that losing a gay male partner through AIDS particularly complicates the grieving process due to the associated stigma and the lack of compassion which may be received or anticipated from others (Walter & McCoyd, 2009).

The biopsychosocial model has provided a framework for understanding the complex care needs of gay men with HIV/AIDS. Although some gay men grow up in small towns and rural areas but move to large cities, it is not uncommon for gay men to return to the communities they grew up in when they become symptomatic with AIDS (Shernoff, 1996). Gay men living in rural areas face different obstacles in terms of gaining access to medical and social services compared with those living in large urban centres. It is also not uncommon for gay men return to a family or a community that negatively judges their lifestyle and their illness (Shernoff, 1996). The poor sense of belonging experienced by these men due to the marked psychosocial issues are thought to significantly impact upon medical outcomes and quality of life.

The psychosocial stressors experienced by gay men are thought to begin early in life and have an ongoing impact throughout the lifespan. The development of a same-sex attraction during childhood and adolescence is thought to be often associated with a distressing sense of being different (Egan & Perry, 2001). Same-sex attraction and gender non-conformity during childhood and adolescence can create a target for maltreatment from families and peers (Cochran & Mays, 2000a). The impact of these experiences in later life is not well understood, however there is a considerable body of literature suggesting that early experiences make a lasting impression upon adult functioning.

Cognitive theory proposes that during childhood people develop enduring core beliefs or schematic representations about themselves, other people and the world (Beck, 1995; Young et al., 2003). Schemas are at the most fundamental level of the personality and a sense of self. The development of maladaptive schemas relating to a sense of disconnection and rejection are the most powerful and destructive schemas, due to the pervasive sense of alienation from others that develops (Young et al., 2003).

The cognitive-analytic model suggests that normal and pathological development results from the internalisation of reciprocal role procedures by the developing child between the self and others (Ryle & Fawkes, 2007). Procedures are considered to be sequences combining perception, knowledge, affect, and aim-directed action (Ryle & Fawkes, 2007). They are reciprocal due to the expected or desired reciprocations of others due to the established patterns in early key relationships. As a result, psychopathology is associated with experiencing situations through a narrow repertoire of interpretations and responses. For example, if a child experiences others to be rejecting towards them, they internalise both the role of feeling rejected and the role of being rejecting. The adult personality is sensitised to enact both the rejected and the rejecting roles in their relationships with others and in relation to themselves.

From this perspective, the manner in which adults experience relationships and interpret social events is significantly influenced by their early experiences. For example, an adult with experiences of rejection in their early life is more likely to be sensitised to later experiences of rejection in their social world, such as feeling rejected by a romantic partner. Such experiences may provoke a profound and persistent change in mood leading to development of depressive symptoms (Ryle & Kerr, 2002). The self-critical and negative style of thinking typically experienced when people are depressed can be understood as an enactment of early relationship patterns (Ryle & Kerr, 2002). Depressive symptoms such as social isolation, excessive guilt and existential isolation can be understood as the activation of this rejecting style towards the self and towards others.

Although it is not well understood, gay men's early experiences are likely to be related to their adult mental health. Consequently, gay men's mental health is likely to be related to biological predispositions, the patterns set in early relationships and the current social context. Early experiences of rejection or alienation from others when young may sensitise gay men to similar experiences later in life, increasing their vulnerability to mental health disorders. The biopsychosocial model provides a coherent way of understanding how differences between the experiences of heterosexual men and gay men may at least in part account for the increased rates of psychiatric morbidity among gay men. It provides a framework for understanding the impact of gay men's early experiences across the lifespan, including the relationship between gay men's sense of belonging and their mental health. A review of the empirical research into the relationship between sense of belonging and mental health follows.

1.2.3. Research into Sense of Belonging and Mental Health

To better understand the relationship between mental health and sense of belonging, Hagerty and Patusky (1995) developed an instrument to measure sense of

belonging. The content validity for the instrument was established by using a panel of experts who had clinical and research expertise in fields related to sense of belonging (Hagerty & Patusky, 1995). The Sense of Belonging Instrument (SOBI) was contrasted with measures of loneliness, reciprocity, and social support, as no other measure of sense of belonging was available for comparison (Hagerty & Patusky, 1995). Initial research in the US using the SOBI found that sense of belonging was unrelated to age, gender, marital status, education or ethnicity (Hagerty, Williams, Coyne, & Early, 1996). This provided the first empirical evidence that sense of belonging is a unique element of interpersonal relatedness, unrelated to common demographic characteristics (Hagerty et al., 1996).

The establishment of a measure of sense of belonging enabled the first empirical testing of the relationship between mental health and sense of belonging. In this research, 379 university students aged 18 to 72 years in the US completed the SOBI and measures of their social support, conflict, involvement in community activities, attendance at religious services, loneliness, depression, anxiety, history of psychiatric treatment, and suicidality (Hagerty et al., 1996). Results indicated that sense of belonging was closely related to measures of psychological and social functioning. Sense of belonging was related to measures of loneliness, depression, anxiety, history of psychiatric treatment, and suicidal thinking and attempts. Overall, positive mental health and greater social functioning was associated with higher levels of sense of belonging.

Subsequent research investigated the role of sense of belonging to the general community in the development and maintenance of depression (Hagerty & Williams, 1999). A clinical sample of 31 patients with depression and a sample of 379 university students in the US completed questionnaires on sense of belonging, social support, loneliness, conflict and depression. Path analysis revealed that 64% of variance in depression was explained by the variables in the model. Sense of belonging was directly

related to depression, and was the best psychological predictor of depression, followed by loneliness. Conflict was found to have the strongest relationship with sense of belonging, such that participants with higher conflict in their relationships typically had a lower sense of belonging.

Following the initial evidence of the relationship between sense of belonging and mental health, further research focussed upon understanding the historical events and psychological characteristics associated with sense of belonging. Using a correlational design, a subsequent study investigated the childhood antecedents of adult sense of belonging in a sample of 362 university students in the US (Hagerty, Williams, & Oe, 2002). Using multiple linear regression, 12 variables were found to significantly account for 25% of the variance in psychological sense of belonging, with a large effect size ($f^2 = 0.33$). Childhood relationships with parents were the most significantly correlated factors associated with adult sense of belonging. The childhood history variables found to predict adult sense of belonging included financial problems, incest and homosexuality. The association between these childhood history variables and diminished adult sense of belonging support the argument that early childhood experiences, such as same-sex attraction, are associated with adult sense of belonging.

Research interest in the relationship between sense of belonging and mental health has grown steadily in recent years. Research in the US suggests that people who report a reduced sense of belonging are more likely to report lower levels of self-esteem, self-worth and self-sufficiency (Lee & Robbins, 1998). A diminished sense of belonging has also been found to be associated with higher levels of anxiety disorders (Herbert, 1997; Lee & Robbins, 1998), depression (Hagerty & Williams, 1999; Hagerty et al., 1996; McLaren, Jude, Hopes, & Sherritt, 2001; Williams, Hagerty, & Yousha, 2002), suicidal ideation (Bailey & McLaren, 2005), and fewer reasons for living (Kissane & McLaren, 2006). The

relationship between sense of belonging and many aspects of mental health has been demonstrated in numerous studies in the past decade.

Research on the relationship between sense of belonging and mental health has also been examined among different populations. A cross-cultural study of 142 women in Thailand found that their sense of belonging had a greater direct effect upon ratings of depression than did their perceived social support or the number of stressful life events (Sangon, 2001). A study of 443 US Navy recruits revealed that the depressed recruits were more likely to have diminished sense of belonging, and they experienced higher levels of loneliness and life-changing events (Williams et al., 2002). Other research in the US revealed that people experiencing a traumatic brain injury are less likely to report depressive symptoms if they have a higher sense of belonging (Bay, Hagerty, & Williams, 2002). In addition, a study of 101 homeless men in the US found that sense of belonging was associated with stronger attachment, and was negatively related to symptoms of depression and anxiety (Ron, 2004). This body of correlational research on a range of populations provides further evidence of the relationship between sense of belonging and mental health. The limitation of these correlational studies should be noted. These studies are unable to determine if a diminished sense of belonging causes poor mental health, or if a diminished sense of belonging is merely a consequence of poor mental health. These correlational studies can only contribute to the broader understanding about the relationship between sense of belonging and mental health, not determine causation.

The relationship between a sense of belonging to the general community and the mental health of older adults was explored in a series of studies (Bailey & McLaren, 2005; Kissane & McLaren, 2006; McLaren, Gomez, Bailey, & Vanderhorst, 2007; Vanderhorst & McLaren, 2005). The first study investigated sense of belonging, marital status and social support as predictors of depression and suicidal ideation in a community sample of

110 Australian adults aged 65 years and older (Vanderhorst & McLaren, 2005). The results indicated that fewer social support resources were associated with higher levels of depression and suicidal ideation. Sense of belonging was not a significant predictor of mental health beyond that accounted for by social support.

Further research investigated how sense of belonging and physical activity were associated with mental health in older people. A community sample of 194 retired Australian adults completed measures of their physical activity, sense of belonging, depression and suicidal ideation (Bailey & McLaren, 2005). Higher levels of sense of belonging were associated with lower levels of depressive symptoms, which were related to lower levels of suicidal ideation. Results indicated that depression partially mediated the relationship between sense of belonging and suicidal ideation. Participating in physical activity with others was not associated with depression or an improved sense of belonging. This research suggests that sense of belonging is more closely associated with mental health in retired adults than is their level of shared physical activity.

Sense of belonging was also investigated as a predictor of reasons for living in older adults. A community sample of 104 Australian adults aged 61 to 95 years completed the Sense of Belonging Instrument and an inventory of reasons for living (Kissane & McLaren, 2006). Results of the hierarchical multiple regression indicated that a higher sense of belonging was associated with greater reasons for living overall, approaching a large effect size ($R^2 = 0.18$, $f^2 = 0.30$). Sense of belonging was associated with more child-related concerns, greater responsibility for the family, and more survival and coping beliefs. This research indicates that sense of belonging in older adults is associated with reasons for living, and is likely to be a protective factor against suicide in older adults.

The final research in this series tested a number of resiliency models to better understand the relationship between psychological sense of belonging (the protective

factor), depression (the risk factor) and suicidal ideation in older adults (McLaren et al., 2007). The sample of 351 retired men and women from Australia completed measures of their depression, suicidal ideation and sense of belonging. When psychological sense of belonging was the protective factor, results indicated support for a moderation model for men and women. Results indicate that high levels of feeling valued and integrated into the community is associated with a reduction in the effect of depression on suicidal ideation in aging men and women. Overall, this series of studies provides strong evidence for the close relationship between sense of belonging, depression and suicidal ideation in older adults. The limitations of these correlational designs using regression analysis should be again be noted. Although a strong relationship between sense of belonging and mental health is consistently identified in these older populations, the consistency of this relationship does not imply causation.

1.2.4. Summary of Sense of Belonging and Mental Health

The theoretical and empirical literature identifies an important relationship between a sense of belonging and mental health. The development of an instrument to measure a sense of belonging to the general community has provided empirical evidence of this important relationship with mental health. Sense of belonging to the general community has been found to be associated with decreased anxiety, depression and suicidal ideation, and is positively associated with greater reasons for living. Although the relationship between sense of belonging and mental health has been investigated in ageing populations, age-related effects upon this relationship have not been investigated specifically. Furthermore, there has only been limited research on the relationship between a sense of belonging to the general community and the mental health of gay men.

1.3. Gay Men's Sense of Belonging and Mental Health

A small number of studies have investigated the relationship between sexual orientation, sense of belonging and men's mental health. Recent research investigated whether a sense of belonging to the general community and sexual orientation were associated with depression in Australian men (McLaren, Jude, & McLachlan, 2007). Participants were 273 gay male and heterosexual men, recruited through a variety of sources including newspapers, radio, and directly at public events. Participants were measured on their level of depression and sense of belonging to the general community. This research found that compared with the heterosexual men, the gay men reported higher levels of depression and lower levels of sense of belonging to the general community.

The research also tested a number of models investigating the relationship between sexual orientation, sense of belonging and depression. The results did not support the additive model, indicating that sense of belonging and sexual orientation were not independently related to depression. Sexual orientation itself was not associated with depression after the impact of sense of belonging had been taken into account. Further results indicated that sense of belonging mediated the relation between sexual orientation and depression. Self-identifying as a gay man was associated with a diminished sense of belonging, which, in turn, was associated with higher levels of depression. These results indicate that higher levels of depression associated with being gay male are largely attributable to the decreased sense of belonging experienced by gay men (McLaren et al., 2007).

Further results from that study did not support the moderation model predicting that sexual orientation moderated the sense of belonging-depression relation. This finding suggests that the relationship between sense of belonging and depression does not vary between gay men and heterosexual men. This finding emphasises the importance of a

sense of belonging to the general community when predicting men's depression, rather than emphasising sexual orientation.

These findings have significant implications for past research revealing elevated rates of depression among gay men. They suggest that the increased prevalence of depression among gay men is likely to be associated with gay men's poor sense of belonging to the general community, rather than their sexual orientation itself. In addition to the early childhood experiences discussed previously, the diminished sense of belonging and higher rates of depression among gay men may be associated with homophobia within the wider community. Homophobia is a substantial barrier to gay men achieving a sense of belonging within the general community.

1.3.1. Homophobia

'Externalised' homophobia is a form of sexual prejudice referring to the negative views, reactions and behaviours directed by members of society towards gay men, lesbians and bisexuals (Gullotta & Bloom, 2003). Gay men commonly experience externalised homophobia, and it is consequently a substantial barrier to achieving a sense of belonging. Researchers asked a sample of 73 gay male, lesbian and bisexual adults in the US about their lifetime and day-to-day experiences of discrimination, and compared these with the experiences of 2,844 heterosexual adults (Mays & Cochran, 2001). One-year prevalence of depressive, anxiety, and substance dependence disorders were also recorded, in addition to current psychological distress and self-rated mental health. Same-sex attracted respondents more frequently reported lifetime and day-to-day experiences of discrimination. In addition, 42% of this sample attributed their experiences of discrimination to their sexual orientation in whole or in part. For the entire sample, experiences of discrimination were associated with 'poor' or 'fair' mental health, and a high degree of current psychological distress. This research provides evidence that the greater prevalence of psychiatric

morbidity among same-sex attracted people is associated with discriminatory practices and attitudes towards same-sex attracted people.

Similar results have been found in research focussing specifically upon young gay and bisexual men's experiences of physical violence, harassment and discrimination (Huebner, Rebchook, & Keggeles, 2004). A total of 1,248 participants ranging in age from 18 to 27 years were recruited through gay and bisexual bars, organisations and social networks across three US states. Participants completed a self-report questionnaire that measured experiences of mistreatment, verbal harassment, discrimination and physical violence in the previous six months. They also completed measures of their current suicidal ideation and their self-esteem. Results revealed that during the preceding six months, 37% of the participants had experienced verbal harassment because of their sexual orientation. In addition, 11% reported discrimination and 5% reported physical violence because of their sexual orientation. This research found that young gay men's experiences of mistreatment are associated with lower self-esteem and a two-fold increase in the likelihood of reporting current suicidal ideation. The limited sampling frame of only including men up to age 27 in the study does not allow an investigation as to whether these trends occur across the gay male lifespan. In addition, the recruitment of gay and bisexual men only through gay bars and associations does not allow an understanding of the experiences of homophobia by men less visible or readily identifiable as gay male or bisexual.

Externalised homophobia can be observed in almost all aspects of contemporary society. Negative attitudes towards homosexuality are commonly reflected in gay and lesbian people's struggle to find a sense of belonging within their family of origin. The disclosure of sexual orientation can be accompanied by conflict, with these difficulties commonly coming into focus during family rituals, such as a birthdays, weddings,

holidays and annual events (Oswald, 2002). Family attitudes towards homosexuality are often explicit in the preparation for such rituals through invitation and acceptance practices. Same-sex attracted adults commonly experience externalised homophobia within their family of origin once their sexual orientation has been disclosed (Oswald, 2002).

Within the US school system, there is little evidence of action to reduce the externalised homophobia experienced by gay, lesbian and bisexual students (Illingsworth & Murphy, 2004). The Abstinence Education Program offered throughout public schooling in the US is an example of a policy that directly and indirectly discourages the development of a same-sex attracted identity (Illingsworth & Murphy, 2004). Furthermore, most schools have no articulated plan to meet the needs of same-sex attracted students, even when these needs are obvious (Illingsworth & Murphy, 2004). Students are exposed to the popular idea that gay men and lesbians do not become parents, despite the growing evidence of the proliferation of these types of families (Patterson, 1994; Rainbow Families Council, 2008).

Discriminatory practices within the workplace are further examples of externalised homophobia that impact upon gay men and lesbian's sense of belonging. A sample of 534 gay male and lesbian employees in the US were asked about the factors that affect the degree of their disclosure of their sexual orientation at work (Ragins, Singh, & Cornwell, 2007). It was found that employees who had experienced workplace sexual-orientation discrimination in the past were more fearful, and consequently limited their disclosure. Employees with a greater fear of the negative consequences of their disclosure had less positive job and career attitudes, received fewer promotions, and reported more physical stress-related symptoms than those who reported less fear. This research suggests that externalised homophobia continues to be a significant barrier to achieving a sense of belonging within the workplace and impacts upon job satisfaction and promotion.

Sexual prejudice can also be experienced as ‘internalised’ homophobia, referring to the negative reactions and behaviours directed towards the self (Gullotta & Bloom, 2003). Internalised homophobia relates to the sense of self, and consequently is likely to be related to the internalisation and maintenance of early relationships patterns as previously discussed under the cognitive-analytic model. Psychological characteristics associated with internalised homophobia include lower self-acceptance, lower ability to self-disclose to heterosexuals and other homosexual people (Kahn, 1991), lower self-esteem, belief in one’s inferiority and beliefs that others will be rejecting on the basis of one’s sexual orientation (Cabaj, 1988).

Research suggests that there is a relationship between internalised homophobia and depression in gay men. Internalised homophobia accounted for 18% of variance in depression among a sample of gay men and lesbians living in Canada (Igartua, 2003). Research in the US found that internalised homophobia was also associated with less disclosure of sexual orientation, shorter and less satisfaction with relationships, lower degree of sexual attraction to men, and less social time with gay men (Ross & Rosser, 1996). These interpersonal correlates with internalised homophobia suggest that it impacts upon gay men’s capacity to achieve a sense of belonging with other gay men and the quality of their relationships. Internalised homophobia provides a further example of the relevance of the biopsychosocial model to gay men’s mental health. It is likely that the internalisation of early experiences interact with the social climate, including externalised homophobia, to result in a range of detrimental effects upon gay men’s emotional well-being and life satisfaction.

The sexual prejudice experienced by gay men can also be conceptualised as a form of stress, common to minority groups. The concept of minority stress is based upon several social and psychological theories. With respect to gay men, it is based upon the premise

that gay people in a heterosexist society are subjected to chronic stress related to their stigmatisation (Meyer, 1995). Minority stress experienced by gay men relates to the incorporation of negative societal attitudes towards the self, stigma, which relates to expectations of rejection and discrimination, and actual experiences of discrimination and violence (Meyer, 1995).

The relationship between these minority stressors and mental health was investigated in a sample of 741 gay men, aged between 21 and to 76 in the US (Meyer, 1995). Results indicated that the internalisation of negative societal attitudes, stigma and actual experiences of discrimination and violence independently predicted psychological distress among gay men. The gay men who experienced high levels of minority stress related to stigmatisation were two to three times more likely to experience high levels of psychological distress. Although this research had a large sample of gay men with a diverse age range, relationships with age were not investigated. This research suggests that the degree of minority stress experienced by gay men is associated with an increased likelihood of experiencing psychological distress.

In summary, there are a number of significant barriers to gay men experiencing a sense of belonging within the general community. Minority stress, externalised homophobia and internalised homophobia have been found to have a detrimental impact upon gay men's self-esteem, and are associated with increased rates of depression and reduced contact with other gay men. There is a need for further research to investigate the interrelations between gay men's age, sense of belonging to the general community, their depression and their suicidal ideation.

1.3.2. Sense of Belonging Within Gay Communities

Due to externalised homophobia and a lack of belonging within the general community, gay men often seek a sense of belonging within gay communities. Before

considering gay communities in any depth, it is necessary to first reflect on what is meant by the term 'community' in general. There is considerable diversity between and within different disciplines in terms of the definition of 'community'. Disciplines including anthropology, sociology, psychology and philosophy have all contributed from their perspectives to what constitutes a community; however there is little agreement on what the term 'community' means. After reviewing 94 definitions of community, Hillery (1955) concluded that there is no complete agreement on the nature of community. This sociological research found that 69 of the 94 definitions included four common components: people, common ties, social interaction and place. In an attempt to establish an operational definition of community, Freilich (1963) proposed that the core ingredients of a definition of community are: people in relatively high frequency interaction, exchanging information at a set of related locations (centres), and practising and developing local interaction culture based upon past information shared.

In more recent times the debate about the definition and meaning of community has continued in a range of contexts. There is generally a common understanding about the importance of community, however there are a variety of opinions about where a community begins and ends (Howarth, 2001). Within the field of social psychology, community can be viewed as a basis for common identity (Howarth, 2001). To this extent, community refers to a common perspective of the world based upon shared social representations. This common perspective provides a basis to define identity and difference. Being a part of a community means identifying with others and distinguishing oneself from those who are perceived as different. Communities can be considered to serve a purpose of identifying and stigmatising those who are perceived as different and consequently a threat to the shared social representation (Howarth, 2001).

Communities can develop out of contesting this stigma and developing more positive social representations of the stigmatised group (Howarth, 2001). This can be seen in cultural movements such as feminism and the gay rights movement, both emerging in the 1970s. The Stonewall riots in New York in 1969 are commonly viewed as the beginning of the gay liberation movement in the US (Armstrong & Cragg, 2006). The raid of the Stonewall Inn resulted in an all-night riot and spawned commemorative gay pride parades around the world (D'Emilio, 2002). Historians continue to debate the significance of the Stonewall riots, however few deny it highlights the clear emergence of a visible and politically active 'gay community'.

Throughout the literature it is commonly assumed that there is a heterogeneous gay community, often referred to as "the gay community". It has been argued that the term "the gay community" is ambiguous and problematic for a number of reasons (Moon, 1995). The term can mask inequalities among gay people and assumes there is a unified political interest with others who have a shared sexual orientation (Moon, 1995). Herek and Glunt (1995) argue that the behaviour of gay men can be better understood if the gay community is explained as a collection of subcultures with varying constructions of personal identity and community.

Research explored descriptions of subgroups of gay men living in the San Francisco area (Peakcock, Eyre, Quinn, & Kegeles, 2001). The qualitative research interviewed 26 gay men about their knowledge of the gay community and the groups they could identify within it. The informants identified an average of 15 groups they felt existed within gay community. Five groups were chosen for the analysis as they met the criteria of being identified by at least one respondent within the subgroup and at least one respondent outside of the subgroup. The five group categories were labelled "leather", "men of colour", "activists", "men who go to clubs" and "younger". The researchers argued that

these sub-communities develop around culturally charged areas of difference among gay men. They argue that the sum of a gay man's attachments to a number of sub-communities constitutes their relationship with a larger gay community.

There has been relatively little research conducted from a psychological perspective on how individual gay men perceive 'the gay community' and how they relate to this concept. Recent qualitative research in the US on 129 gay and bisexual men asked them to respond to seven questions asking them about their definition of 'the gay community' (LeBeau & Jellison, 2009). The results revealed a diverse range of responses in how the gay community was defined. The majority of participants (65%) saw the gay community as global, relating to an international community of gay and bisexual men and their allies. Gay community was also defined as informal and friendship oriented (14%) (e.g., my group of friends who I go out with) and as formal and institution based (23%) (e.g., gay sports teams and gay-owned businesses). When asked about reasons discouraging their involvement in the gay community, the majority of participants (48%) cited the community's reliance upon the bar scene, the overemphasis upon youth and beauty, and a tendency to engage in baseless conflict (e.g., "drama" or "being bitchy"). This perceived 'shallowness' of the gay community as a whole was seen as a major disadvantage by many participants (29%).

This research about perceptions of the gay community is generally consistent with the idea that gay men experience 'gay community' in three major ways (Woolwine, 2000). First, the 'imagined gay community' is most commonly referred to for territorial purposes, defining urban gay and lesbian defined areas, or the 'scene'. These areas are considered to be 'life style enclaves' rather than a true community (Woolwine, 2000). This level of the gay community is experienced in imagination as a united community, and can include images of commonality at a national or global level (Woolwine, 2000). This level of the

gay community will be referred to as the broader gay community. Research suggests that many gay men imagine and experience this community, however it is commonly experienced as being divided and provides a weak source of meaning and identity (Woolwine, 2000).

The second experience of the gay community is found through gay groups and organisations. Gay men meet individuals who are 'like oneself' through membership of local gay organisations and groups (Woolwine, 2000). Through a sense of belonging to this level of the gay community, gay men can connect with and directly experience a sense of belonging to the gay community. It is thought that face-to-face contact through this level of community can bring about a deeper emotional identification with the group and with the individuals within it. It has been suggested that positive attitudes towards this level of the gay community may have a particularly beneficial effect upon a sense of belonging outside of the gay community. It has also been suggested that gay men attempt to ameliorate the effects of minority stress by joining groups of other gay men (Meyer, 2003). A sense of belonging to these groups allows gay men to experience a social environment in which they are not stigmatised by others, and to experience a positive sense of identity at a group level (Meyer, 2003).

The third experience of the gay community is through gay men's relationships with their gay friends, both individually and as a network of friends. It is within this level of community that many 'family' functions are performed, especially the exchanging of goods, support, love and advice (Woolwine, 2000).

A review of the literature reveals that the majority of research investigating the benefits of gay male friendships is related to providing support to people with HIV/AIDS. There is a paucity of research investigating the experiences and benefits of gay male friendship across the lifespan. The limited research suggests that having gay friends assists

young men in coming out and facilitates entry into the socialisation process of the gay community (Kocet, 2002). This includes learning about gay culture, language, history and dynamics within gay relationships. It has been suggested that gay friendships are the central organising element of gay men's lives (Nardi, 1999).

Research in the US has investigated how acculturation into gay subculture may have health promoting benefits. This research examined data from 282 men with a mean age of 32 years, who had had sex with men but were not in monogamous relationships (Seibt, Ross, Freeman, & Krepcho, 1995). Participants completed an instrument measuring acculturation into gay subculture, including the reading of gay newspapers and belonging to organisations for gay men. They also completed a measure of their regularity of condom usage when having anal sex. Regression analysis revealed that acculturation into gay subculture was a significant predictor of condom usage. The relationship suggests that increased acculturation in gay subculture may be associated with safer sexual behaviour among men who have sex with men.

There is no research to date investigating the mental health benefits of a sense of belonging to the three levels of the gay community. The only research that has been conducted investigated how a sense of belonging to a singular concept of 'the gay community' was related to gay men's depression (McLaren, Jude, & McLachlan, 2008). Participants in the research were 137 Australian gay men aged 19 to 69 years. The research investigated a series of models of the relationship between a sense of belonging to the general community, a sense of belonging to the gay community, and depression. The additive model predicted that a sense of belonging to the general community and a sense of belonging to the gay community would be independently related to lower levels of depression. Mediating models were tested to examine if sense of belonging to the general community mediated the relation between a sense of belonging to the gay community and

depression, and if sense of belonging to the gay community mediated the relation between a sense of belonging to the general community and depression. A moderation model was also tested to establish if the interaction between sense of belonging to the general community and a sense of belonging to the gay community was related to depression.

Results indicated support for the additive model, suggesting that a sense of belonging to the general community and a sense of belonging to the gay community independently predicted depression. Sense of belonging to the general community and sense of belonging to the gay community did not interact in the prediction of depression. Support was also found for the two mediating models. In the prediction of depression, a sense of belonging to the gay community was related to a sense of belonging to the general community, and, conversely, a sense of belonging to the general was related to a sense of belonging to the gay community. Overall, these results suggest that a sense of belonging to the general community and a sense of belonging to the gay community are both related to depression directly, and indirectly, among gay men.

There is a need for further research to investigate the direct and indirect relationships between gay men's sense of belonging to the three levels of the gay community and their mental health. In addition, it is currently unknown how a sense of belonging to the three levels of the gay community is related to gay men's sense of belonging to the general community. The relationship between all four aspects of belonging and gay men's mental health has not been empirically investigated. Given the strong association between a sense of belonging to the general community and depression, it is likely that a sense of belonging to each of the three levels of the gay community is associated with gay men's mental health.

Despite the demonstrable connection between a sense of belonging and mental health, there has been almost no research investigating the relationships between gay

men's sense of belonging to gay communities and their mental health. Researchers have recently attempted to develop a measure of 'psychological sense of community' as it relates to the gay male community (Proescholdbell, Roosa, & Nemeroff, 2006).

Psychological sense of community is defined as a feeling of belonging to and being able to depend upon a larger supportive community (Proescholdbell et al., 2006). Although this research makes significant advances by developing this measure, unfortunately it replicates the invalid assumption made in other research that there is a singular gay community to which gay men can belong. The research also did not take into account age-related barriers to achieving a sense of belonging within gay communities. There is evidence to suggest that ageism exists within gay communities. The limited research regarding ageism and older gay men's sense of belonging within gay communities is discussed.

1.3.3. Ageing Within Gay Communities

Throughout the research literature there are two disparate images presented of ageing gay men. The common stereotyped image portrays ageing gay men as disconnected from family, with few friends, isolated from other gay men, depressed and unhappy (Berger, 1984). The other image presented is the antithesis of this stereotype, portraying ageing gay men as socially connected, satisfied with their lives and actively involved within gay communities (Shippy, Cantor & Brennan, 2004). The divergence of these portrayals highlights how little is known about ageing within gay communities. The limited research available is discussed to explore the extent to which ageing itself is a barrier to achieving a sense of belonging within gay communities.

Some of the earliest research on gay male ageing was conducted by Berger (1984). This research involved interviews with 18 gay men and lesbians in the US aged 40 to 72 years, using open-ended questions on topics including social life, involvement with gay community, involvement with family, inter-generational attitudes and perspectives on

ageing. Results indicated that all the participants were involved in some aspect of gay community. Almost all of the gay men and lesbians were involved in some form of civic or religious organisation, however only the gay men frequented venues in the pursuit of sexual contact. Although the term 'younger' was not defined in the study, the majority of participants believed that younger gay men and lesbians held negative attitudes towards them, however there was also a tendency for participants to hold negatively stereotyped views about younger gay men and lesbians. Overall, Berger suggests that adjustment to ageing as a gay man or lesbian reflects a person's overall adjustment to other aspects of their life. The participants who were accepting of their age and remained connected appeared to be those who had held accepting and adaptable attitudes in other aspects of their lives.

A study conducted in a comparable era by Gray and Dressel (1985) revealed similar trends about the idiosyncratic nature of adjustment to gay male ageing. The study collected data from 4,212 gay men in the US aged 16 to 78 years on their attitudes towards ageing and socialisation within gay communities. The study frequently referred to 'younger' and 'older' gay men, however no operational definition of these terms was provided. Results indicated that the older gay men who had been sexually active the longest felt less positive about their age. The researchers suggest that greater immersion within the gay male subculture may result in a greater awareness of the importance of a youthful appearance, however the data suggested that there was no relationship between age and body image, with 59% of the older participants expressing positive feelings about their own body.

The research found that older gay men were as likely to spend time with other gay men as were the younger and middle aged gay men. The length of time the gay men had been sexually active was related to an increased association with other gay men. The

researchers suggest that contact with other gay men was more of an issue of sub-cultural socialisation rather than of ageing itself. Overall, the findings suggests that older gay men with a long history of being sexually active were more likely to have internalised negative ideas about ageing, however, paradoxically they were more likely to associate and seek community with other gay men. Unfortunately this research did not investigate involvement with different aspects of gay communities, only measuring a general sense of involvement with other gay men.

In contrast, generational cohort effects are noted throughout the literature. The pre-Stonewall, older gay male cohort is often characterised as being 'closeted', spending considerable amounts of energy hiding their sexual orientation, and viewing research and activism as threatening (Shankle, Maxwell, Katzman, & Landers, 2003). Many older gay men have lived through an era where their sexual desires were considered signs of being mentally ill, and their sexual acts were disallowed by legislation (D'Augelli et al., 2001). This cohort is commonly characterised by the social and historical period in which they developed, and are often cited as reporting that ageism and elder abuse is rampant within gay communities, maintaining that they are viewed as being 'too old' (Shankle et al., 2003).

Some older gay men believe that being gay has made them more aware of the ageing process, particularly referring to the excessively youth-oriented gay male culture (Heaphy, Yip, & Thompson, 2003). In a review of the social implications of ageing conducted with 266 same-sex attracted adults in the UK, 44% of the older gay men aged 50 or older felt that their age had made a difference as to how they saw themselves (Heaphy et al., 2003). Even more striking, 52% of the men indicated that others' perceptions of their age had made an impact upon their lifestyle, choosing to be less involved in, and feeling excluded from, gay communities because of their age. There are

accounts of older gay men in the US believing that younger gay men react negatively towards them, and do not welcome them in bars, clubs and saunas (Berger, 1996).

Australian research has investigated age-related differences in geographic location and attachment to the gay community (Van de Ven, Rodden, Crawford, & Kippax, 1997). A total of 2,583 gay men were sampled, with 10% of the men aged 49 years or older. Results revealed that more than half (53%) of the older men lived alone, and few (12%) lived in predominantly gay areas. The older gay men were more likely than their younger counterparts to live in rural areas. Social attachment to gay communities was measured by the amount of time spent with gay friends and the number of gay friends. Cultural involvement was measured by membership to organisations and perceptions of belonging, whereas sexual involvement was measured by the number and frequency of sexual partners. Results revealed that age was associated with decreasing social, cultural and sexual involvement with gay communities. The researchers concluded that older gay men were less attached to gay communities than the younger gay men, however most older gay men maintained moderately strong links with gay communities. The research provides some evidence of decreasing attachment to gay communities with age, however most of the older gay men would not fit the stereotypical view of being disconnected.

Despite these accounts of ageism and discrimination within gay communities, it is not well understood why this would take place. Communication experts have theorised that younger gay men use this discriminatory mechanism to manage their own threatened social identity (Hajek & Giles, 2002). It is suggested that negative attitudes held by heterosexual men towards gay men threaten the stability of the gay male social identity. According to social identity theory, younger gay men attempt to create a positive in-group identity, by maligning certain characteristics attributed to the out-group. Younger gay men

distinguish themselves from their persecutors (heterosexual men) by overemphasising a value upon a youthful physical appearance.

It has been suggested that emphasis upon physical appearance among gay male culture results in the 'black sheep' effect where the in-group members show positive bias towards socially desirable in-group members, whilst simultaneously disparaging the undesirable ones (Hajek & Giles, 2002). In this case, younger gay men protect the group's threatened social identity by rejecting older gay men who fail to represent their preferred social identity. Older gay men are reduced to being the 'bad gays' and are rejected by younger gay men in order that the in-group maintains a distinction from their persecutors (heterosexual men).

Further research suggests that it is not only younger gay men that discriminate against older gay men. Preferences for the age of partners of homosexual and heterosexual men and women were investigated in 1,464 advertisements appearing in newspapers in the US (Hayes, 1995). Results suggested that the older gay men showed a strong preference for younger gay men. The younger gay men preferred men around their own age range. For all the male respondents, increased age was associated with a greater preference for younger partners. This trend was stronger for the older gay men compared with their heterosexual counterparts.

Other US research using a similar methodology revealed similar findings about older gay men's preference for younger partners (Kenrick, Keefe, Bryan, Barr, & Brown, 1995). This trend was more exaggerated among the older gay male respondents, with the oldest respondents having the greatest preference for the youngest males. The researchers suggest that older gay males are the least desirable on the social 'market'. Few older gay men were interested in men their own age, and even fewer younger gay men were interested in the older gay men. These studies suggest that older gay men may not only

experience ageism from younger gay men, but that ageism may also be reflected in their attitudes about the desirability of a partner.

Age-related concerns were explored in a qualitative study of 27 gay men from Canada aged 40 and over (Murray & Adam, 2001). Semi-structured interviews were conducted to explore themes related to their experiences within gay community. The analysis revealed six key themes related to their concerns about ageing. Many of the gay men identified the idealisation of youth within the gay scene and commented upon a sense of displacement from social spaces available to gay men because of their age. Despite this perception, there was a range of positive and negative experiences of involvement with younger gay men. Many were aware of a perceived loss of desirability with age, and some put in extensive effort to reduce its impact by working on improving their bodies. Among the single men, there was a perception that their chances of finding love and a relationship diminished with their age. Despite these concerns, many of the older gay men identified a range of discoveries, satisfactions and pleasures that have improved with age. These included greater emotional maturity, an improved sense of self, and a greater enjoyment of sex due to being less driven by sexual impulses.

An important idea that emerges from the literature on ageing within gay communities is the discrepancy between gay men's self-perceptions about ageing and their perception of the views of other gay men. An example of this can be seen in the phenomenon of accelerated gay male aging within gay male cultures (Heaphy et al., 2003). Australian research has found that gay men perceive middle age to begin at around 41 years and old age to begin at around 63 years, which is consistent with heterosexual men's attitudes (Bennett & Thompson, 1991). However, when asked about the age they believe that other gay men perceive these age-bands to begin, middle age was perceived to begin at 39 years and old age to begin at 54 years. The striking difference in

the perception of old age is thought to reflect accelerated male ageing within gay communities, dominated by a youth and appearance-oriented subculture.

Further evidence for this discrepancy in the perceptions of ageing was found in a study comparing gay men and lesbian's attitudes towards ageing (Schope, 2005). The sample consisted of 74 gay men and 109 lesbians from the US with average ages of 34 and 40 years respectively. Results revealed that the gay men perceived ageing more negatively than did the lesbians and held more negative attitudes about their own ageing. The gay male sample perceived old age to begin much earlier (39 years) than did the lesbian sample (49 years). The gay men held more negative attitudes towards ageing and were more fearful of the negative evaluations of others because of their age. A key finding highlighted the discrepancy between the attitudes of self and others, revealing that only 5% of the gay men perceived their own ageing as 'terrible', however almost half the gay male respondents indicated that gay society saw being an older gay man as 'terrible'. The study highlights the vast discrepancy within gay male communities between individual gay men's attitudes toward their own ageing and their perception of other gay men's attitudes towards ageing.

Overall, there is a clear contrast between the stereotypical image of older gay men being disconnected from gay communities and the data suggesting there are minimal differences in their overall level of involvement. The literature reveals there is a strong emphasis upon youth and appearance within gay male culture, however the actual impact of this upon mental health is unknown due to the paucity of research in this area. Despite gay men being aware of the emphasis upon youth and beauty, it is not necessarily the case that this translates into older gay men devaluing themselves and that it universally impacts upon their sense of belonging and their mental health. The biopsychosocial model suggests that an interplay between biological influences, individual psychological differences and

the social context is most likely. The social emphasis upon youth and beauty within gay communities is likely to be influential, however individual psychological differences are likely to account for the evidence suggesting many older gay men sustain their sense of belonging to gay communities. It is likely that as many gay men age, they adapt and maintain their sense of belonging to gay communities through their friendship networks and through membership of gay groups. A sense of belonging to the broader gay community is most likely to be affected by ageing as this is associated with stereotypical depictions of gay men, not necessarily the diversity of gay men's lived experiences.

1.4. Summary

Despite the increased prevalence of psychopathology among gay men, there is only limited understanding of this phenomenon. Research suggests that a sense of belonging to the general community is a stronger predictor of men's depression than is their sexual orientation. The evidence of ongoing discriminatory attitudes and practices towards gay men are likely to contribute to a diminished sense of belonging to the general community. Consequently, gay men's sense of belonging to the general community is likely to be a strong predictor of their mental health.

Beyond the sexual prejudice experienced within the general community, there is evidence of ageism within gay male communities. Despite the widespread accounts of ageism, there is little evidence to suggest that older gay men are grossly disconnected from gay male communities. A sense of belonging to the non-specific, youth oriented 'broader gay community' is most likely to be affected by ageing. It is likely that many older gay men have adapted to ageism within gay communities by continuing to experience a sense of belonging through their friendship networks and membership of gay groups. Consequently a sense of belonging to gay groups and a sense of belonging with gay friends

are likely to be important predictors of gay men's mental health, regardless of their age. A sense of belonging to these levels of the gay community are likely to be related to a sense of belonging to the general community, which is known to be a strong predictor of mental health.

1.5. Present Research

This study investigated the interrelations between age, sense of belonging and mental health in a sample of Australian gay men. Previous research in the area has not investigated associations with age and has assumed there is only a singular concept of gay community. In addition, past research has only investigated the relationship between sense of belonging and depression in gay men. In this study, suicidal ideation was considered as an additional measure of psychological distress. This study examined the interrelations between gay men's age, their sense of belonging to the general community, their sense of belonging to the three identified levels of the gay community, and two indices of their mental health. These relationships were tested with three distinct aims.

1.5.1. Aim 1 and Hypotheses

The first aim of the study was to investigate the direct relationships between age, sense of belonging and mental health. There has been little research conducted investigating the relationship between age and mental health among gay men. There is evidence to suggest that the risk of depression in men decreases with age and a single study finding a relationship between age and increased suicidal ideation among gay men. It was hypothesised that age would be related to a decrease in depressive symptoms; and that age would be associated with an increase in suicidal ideation.

There has been little research to date investigating if gay men's sense of belonging to the general community and their sense of belonging to gay male communities are

associated with age. There is evidence to suggest that there are considerable challenges of ageing within gay male communities. Ageism is expressed through negative attitudes held by some younger gay men towards older gay men and is also reflected in the value placed upon youth and beauty within gay male communities. However, there is also evidence to suggest that many older gay men sustain a sense of belonging within gay communities despite this ageism. It is most likely that as gay men age, a sense of belonging within gay communities is retained through a network of gay friends and membership of gay groups, rather than through the broader gay community. It was hypothesised that gay men's sense of belonging to the broader gay community would diminish with age; but that there would be no relationship between age and a sense of belonging to the general community or a sense of belonging to gay groups or with gay friends.

There is a substantial body of research that offers evidence for the relationship between a sense of belonging to the general community and mental health. Given that a relationship between a sense of belonging to a singular concept of 'the gay community' and depression has been established in past research, it is likely that a sense of belonging to each of the three levels of the gay community will also be positively associated with mental health. In addition, past research has found that a sense of belonging to the general community is a stronger direct predictor of depression than is a sense of belonging to gay community. It was hypothesised that there would be direct relationships between a sense of belonging to the general community and mental health; a sense of belonging to each of the three levels of the gay community and mental health; and that a sense of belonging to the general community will be the strongest direct predictor of depressive symptoms and suicidal ideation among the four measures of sense of belonging.

1.5.2. Aim 2 and Hypotheses

The second aim of the study was to investigate the indirect relationships between age and mental health, via a sense of belonging to the three levels of the gay community and a sense of belonging to the general community. Past research has supported a mediation model, whereby a sense of belonging to a singular concept of gay community predicted a sense of belonging to the general community, which, in turn, predicted depressive symptoms. This aim extends upon this research by proposing path models that predict two indices of psychological distress. The proposed models can be seen in Figures 1 and 2. Ageism within gay communities is particularly associated with the gay ‘scene’, therefore it was expected that age would be associated with a sense of belonging to the broader gay community, however all levels of the gay community were explored in this exploratory research. It was hypothesised that age would be directly related to a sense of belonging to each level of the gay community; each level of the gay community would be directly related to a sense of belonging to the general community, which in turn, would predict depressive symptoms and suicidal ideation. It was further hypothesised that there would be a significant indirect effect of age on depressive symptoms and on suicidal ideation, via a sense of belonging to the gay and general communities.

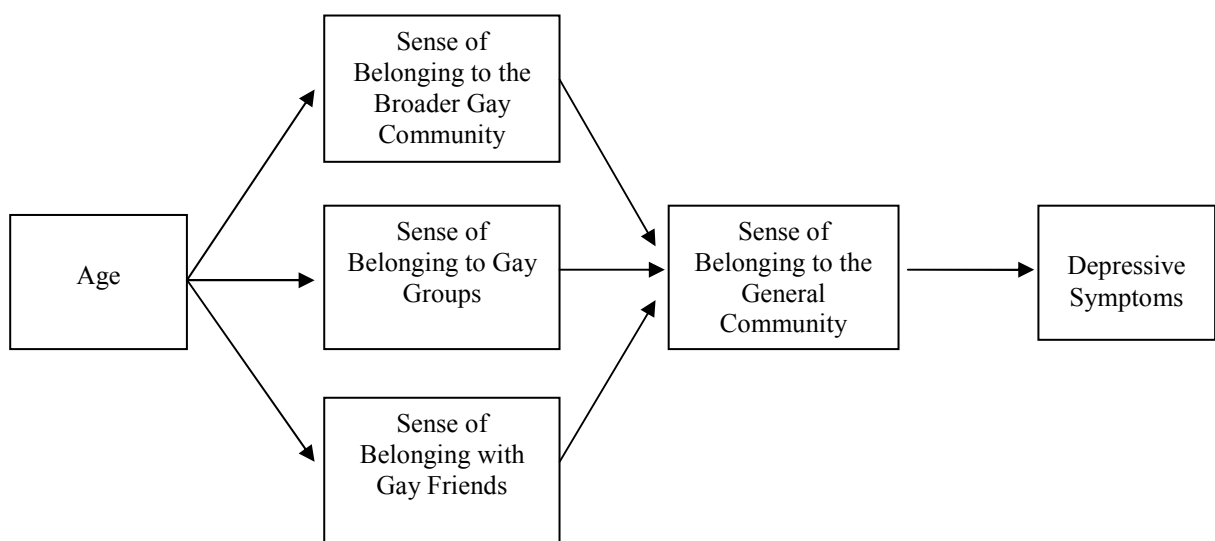


Figure 1. Hypothesised path model predicting depressive symptoms.

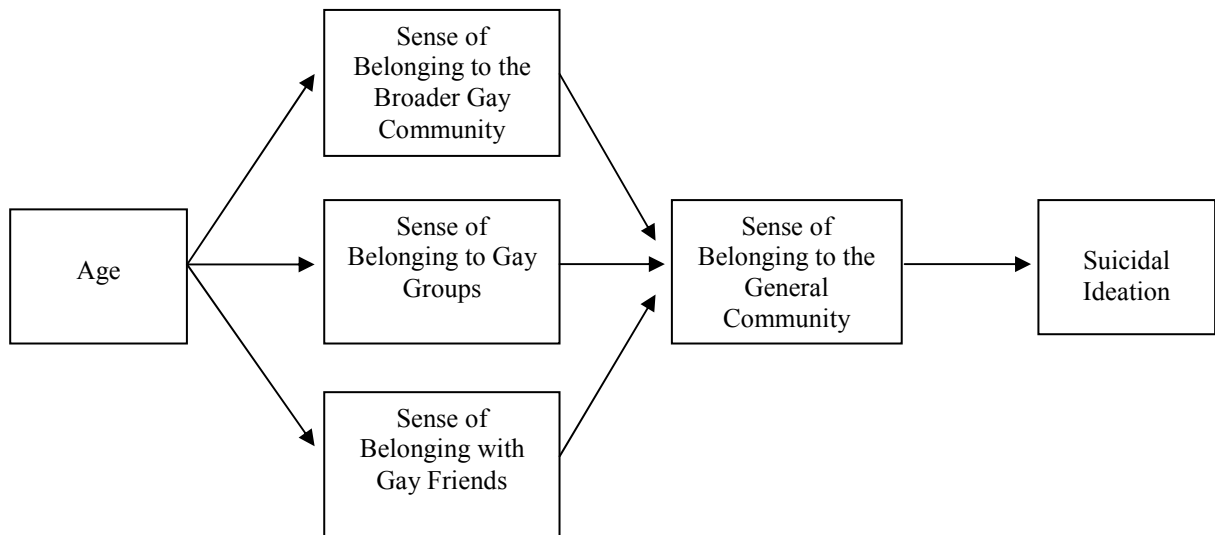


Figure 2. Hypothesised path model predicting suicidal ideation.

1.5.3. Aim 3 and Hypotheses

The third aim of the study was to further investigate the relationship between age, sense of belonging and mental health. The relationship between these variables can be understood using two more conceptual models. One possibility is that both age and sense of belonging are simultaneously but independently related to mental health (additive effect). The increased risk of depression among younger men and the evidence of increased suicidal ideation among older gay men suggest that additive effects are likely. It was hypothesised that age and each of the four aspects of belonging would independently be related to depressive symptoms and to suicidal ideation.

The second possibility is that the relation between sense of belonging and mental health varies according to the age of the gay man (moderation effect). There is broad range of research revealing a strong relationship between sense of belonging and mental health. It is unclear from past research if ageism within gay communities is associated with older gay men's participation or sense of belonging within gay communities. The sub-cultural emphasis upon a youthful appearance within gay communities appears to be particularly focussed upon the gay 'scene', and is associated with stereotypical portrayals of 'the gay

community' or the broader gay community. To this extent, it is possible that age is associated with the relationship between gay men's sense of belonging to the broader gay community and their mental health. The emphasis upon a youthful appearance within the broader gay community may result in younger gay men benefitting from a greater protective value of a sense of belonging to the broader gay community than older gay men. Consequently, a sense of belonging to the broader gay community may be a stronger protective factor against poor mental health for younger gay men than for older gay men.

Decisions about potential moderators are best made when based upon previous research and theory, and typically where there is already a strong relation between the predictor and the outcome variables (Frazier, Tix & Baron, 2004). In this aim, age was chosen as the moderator due to the strong theoretical and empirical relationship between sense of belonging and mental health, which is the primary focus of this aim.

It is unlikely that age is associated with the sense of belonging-mental health relation for a sense of belonging to the general community, gay groups or with gay friends. Although there are considerable differences among cohorts of gay men due to the evolution of gay rights, barriers to gay men's sense of belonging to the general community are more likely to be associated with sexual orientation rather than with age itself. In addition, a sense of belonging to gay groups or with gay friends is limited to actual relationships with groups or individuals. Involvement with gay groups is particularly associated with a common interest or shared goal, therefore age is unlikely to be associated with the relationship between a sense of belonging to gay groups and mental health. It was hypothesised that in the prediction of depressive symptoms and suicidal ideation, age would moderate the sense of belonging to the broader gay community-mental health relation, but age would not moderate the sense of belonging-mental health relation for a sense of belonging to the general community, gay groups or with gay friends.

Chapter 2: Method

2.1. Participants

A community sample of 202 Australian gay men, aged 18 years and older, participated in the research. Fifteen participants were excluded from the research due to incomplete demographic and psychometric information, and 10 were suspended from analysis due to self-identifying as bisexual. The final data pool comprised of 177 self-identified gay men. The mean age of participants was 43 years ($SD = 13.34$), with ages ranging from 18 to 79 years. The median age of participants was 40 years and the mode was 36 years old. The majority of participants (72%) lived in the state of Victoria, Australia.

The sample was predominantly employed full-time (54%) or part-time (20%), whilst smaller numbers were retired (15%) or unemployed (11%). The highest level of education achieved for over half of the sample was undergraduate or postgraduate university degree (56%). Fewer participants had completed a TAFE/Trade certificate (20%) or secondary education (24%). Annual income varied across the sample, with the greatest number of participants earning less than \$20,000 per annum (29%), however 20% of participants earned in excess of \$60,000 per annum. The majority of the participants were born in Australia (84%), with the United Kingdom the most common other country of origin (7%).

Half the participants were currently in a relationship (51%), and the majority of participants lived with others (59%). A minority of the gay men had children (11%) or grandchildren (2%). The majority of the gay men (60%) estimated that more than 75% of people they knew were aware of their sexual orientation.

2.2. Measures

A questionnaire package was utilised consisting of a Plain Language Statement, a demographic page collecting general information and key social variables, and the five scales (Appendix A). The mental health instruments used in the research were the Suicide Subscale of the General Health Questionnaire (GHQ) (Goldberg & Hillier, 1979), and the Centre for Epidemiologic Studies-Depression Scale (CES-D, Radloff, 1977). The sense of belonging measures used were the Sense of Belonging Instrument-Psychological (SOBI, Hagerty & Patusky, 1995), Sense of Belonging Visual Analogue Scale (SOBVAS), and the Sense of Belonging within Gay Communities Scale (SOBGCS).

2.2.1. Plain Language Statement

Potential participants were invited to participate in the study through a brief description of the research, its expected benefits, and potential risks to the participant. The Plain Language Statement provided contact details for the researchers and relevant resources that could be accessed by the participant if they experienced any distress during or after completing the questionnaire. Resources provided included the contact details for the Human Research Ethics Committee, Lifeline, and the Gay and Lesbian Switchboard.

2.2.2. Demographic Section

The demographic section of the questionnaire sought participants' relevant details including their age, relationship status, postcode, residential status, highest education level achieved, current employment status, annual income and the degree of disclosure of their sexual orientation. Research within the field has a variety of approaches to categorise participants on the basis of their sexual orientation. The researcher elected to adopt a self-identification approach, by providing participants with a number of options to choose between including heterosexual, gay male, bisexual, queer and don't know/not sure.

2.2.3. *Suicide Subscale of the General Health Questionnaire (SSGHQ)*

Suicidal ideation was measured using the 7-item Suicide Subscale of the General Health Questionnaire (Goldberg & Hillier, 1979). Participants responded using a four-point scale (0 = *not at all*; 3 = *much more than usual*) to indicate the frequency with which they have experienced suicidal thoughts and behaviours over the past few weeks. An example of an item is “Over the past few weeks, have you felt that life was worth living?”. It provided a possible total score range of 0-21, with higher scores indicating the presence of more suicidal ideation.

The SSGHQ has been used extensively in previous suicide research and has been validated as a clinical screening tool with a medium to large effect size (Watson, Goldney, Fisher, & Merritt, 2001). The subscale has been found to be a reliable and valid instrument, with a correlation coefficient of .73 between subscale scores and independent clinical measures of suicidality (Goldberg & Hillier, 1979). Reliability analysis for the scale in the current research found the alpha coefficient to be .83.

2.2.4. *Centre for Epidemiological Studies-Depression Scale (CES-D)*

The 20-item CES-D was developed as screening instrument to measure depressive symptomatology in the general population (Radloff, 1977). Participants used a 4-point scale (0 = *less than one day*; 3 = *5-7 days*) to indicate how often the respondent experienced depressive symptoms over the past week (e.g., “I felt that everything I did was an effort”). It has a possible total score range of 0-60, with higher scores indicative of high depression.

It is a reliable and valid measure, with an excellent internal consistency co-efficient alpha of .85 and an adequate test-retest reliability correlation of .51 over a two-week period (Radloff, 1977). The CES-D is suitable for a wide range of participants and has been used in numerous studies on older adults (Arean & Miranda, 1997; Hertzog, Van

Alstine, & Usula, 1990; Pfaff & Almeida, 2005). The CES-D was chosen as a measure of depressive symptomatology as it is a recommended measure for the older and elderly populations and it one of the most widely used screening tools in this population (Haringsma, Engels, Beekman, & Spinhover, 2004; Mui, Burnette, & Chen, 2001). The instrument has been successfully used in research on gay men, however past research has predominantly focussed upon depression associated HIV infection (Lichtenstein, Laska, & Clair, 2002; Perdue, Hagan, & Thiede, 2003). Cronbach's alpha for the current sample was .92.

2.2.5. *Sense of Belonging Instrument-Psychological (SOBI-P)*

The 18-item Psychological Subscale of the Sense of Belonging Instrument assesses an individual's experience of feeling valued, needed and accepted, and the perception of fit or connectedness within a system of environment (Hagerty & Patusky, 1995). The SOBI-P asked respondents to give ratings on a four-point scale (*1 = strongly disagree; 4 = strongly agree*) to questions such as "I often wonder if there is any place on earth where I really fit in". The subscale has a possible total score range of 18-72, with higher scores indicate a greater sense of belonging. For ease of communication, the term 'sense of belonging to the general community' or SOBI-P will be used throughout to refer to this measure.

The SOBI-P has been found to be a reliable and valid measure of the psychological state of sense of belonging, with an internal consistency co-efficient alpha of .93 and a test-retest reliability correlation of .84 over an eight-week period (Hagerty & Patusky, 1995). Australian research has validated the instrument to be a reliable measure of sense of belonging within heterosexual and gay male populations (McLaren et al., 2007). Reliability analysis for the current research found the Cronbach's alpha coefficient on this measure to be .96.

2.2.6. *Sense of Belonging Visual Analogue Scale (SOBVAS)*

The SOBVAS was developed to determine if the 18-item Sense of Belonging Instrument-Psychological (Hagerty & Patusky, 1995) could be validly reduced to a two-item visual analogue scale. The SOBVAS measured the two theoretical concepts underlying a psychological sense of belonging that were originally proposed by the authors of the SOBI-P (Hagerty & Patusky, 1995). The original scale consisted of two psychological concepts (feeling needed or valued, and fit), and a measure of the antecedent desire or interest to belong. Only the psychological concepts of valued and fit are used in this research.

Respondents to the SOBVAS were provided with two 10cm lines, anchored at each end with extreme positions, such as 0 “Not needed or valued at all” to 10 “Completely needed or valued”. Respondents were asked to place a vertical line through each of the lines, indicating the extent to which they endorsed each of the concepts. The placement of the vertical line was then measured in centimetres, rounded to the closest centimetre. Higher responses indicated greater endorsement of the statement.

For the purposes of establishing the validity of the SOBVAS, the two psychological concepts of valued and fit were combined, and then correlated with the SOBI-P scores to measure the strength of the relationship between the two instruments. Raw data on the SOBVAS was positively skewed, therefore a Spearman’s Rank Correlation Coefficient was calculated, which has no assumptions about the underlying distributions. There was a significant positive correlation between the two instruments ($\rho = 0.67, p < 0.001$). Based upon Cohen’s (1988) guidelines, this suggests there was a highly significant, strong positive relationship between the 18-item Sense of Belonging Instrument (SOBI-P) and the visual analogue instrument (SOBVAS). The relationship between these measures can be seen in the scatterplot in Appendix B. This analysis

provides initial evidence supporting the practice of using a two-item visual analogue scale as an alternative measure of a sense of belonging to the general community. This visual analogue methodology was then used to develop the measures of a sense of belonging to the three levels of gay community. The SOBVAS instrument was administered only to establish its validity, and is not used in further analysis.

2.2.7. Sense of Belonging Within Gay Communities Scale (SOBGCS)

The SOBGCS was developed to measure a sense of belonging to the three levels of gay community. There is no other established instrument that measures a sense of belonging to the broader gay community (SOBGCS1), the local gay community including interest and social groups (SOBGCS2), and a personal network of gay friends (SOBGCS3). These three levels of the gay community are based upon Woolwine's sociological model of gay communities (Woolwine, 2000).

The SOBGCS instrument consisted of six 10cm lines, measuring the two psychological aspects of sense of belonging (feeling needed or valued, and fit) for each of the three levels of gay community. Each of the lines was anchored using the same procedure described for the SOBVAS. Respondents were asked to place a vertical line through each of the lines, indicating the extent to which they endorsed the statement, such as from 0 "Not needed or valued at all" to 10 "Completely needed or valued". The placement of the vertical line was then measured in centimetres, rounded to the closest centimetre. Higher responses indicated greater endorsement of the statement. The two scores (measuring feeling needed or valued, and fit) were combined to provide a measure of a sense of belonging for each of the three levels of gay community, with total scores ranging between 0 and 20. Higher scores indicated a greater sense of belonging to each of the levels of gay community.

2.3. Procedure

The sampling of gay, lesbian, bisexual and transgender people is typically problematic due to difficulties recruiting such populations for reasons including social isolation, difficulties in definition, and resistance to identification due to fear of discrimination (Sullivan & Losberg, 2003). Non-probability sampling is often used in response to these difficulties (Sullivan & Losberg, 2003). A range of recruitment techniques and strategies were used over an 18-month period to maximise the diversity of the sample, despite the limitation of non-probability sampling being utilised. The research was promoted through the media in radio interviews and press coverage. The Internet and e-mail were also used to promote the research by placing advertisements in a number of e-mail newsletters read by gay men. Snowball sampling was also used to promote the research through the researcher's social contacts. Strategic recruitment strategies were employed to attempt to reach gay men from a diverse range of ages and lifestyles. A number of gay community events were attended to promote the research and distribute questionnaires. Events attended include the Pride March, Carnival Day, the 'Chill Out' festival and the Rainbow Tea Dance (Victorian Seniors Festival). These gay community events attract gay men from a range of ages from metropolitan and regional areas. These events are likely to attract gay men with some degree of existing connection to at least one level of the gay community. Other strategies were used to recruit gay men with a diminished sense of belonging to gay communities. Clubs and organisations, such as the 'Vintage Men', who service many isolated and disconnected older gay men, assisted with promotion to their members. A number of small interest and social groups, such as a gay movie club, also assisted with the recruitment of more isolated gay men.

After reading the Plain Language Statement, participants were asked to complete the anonymous questionnaire materials. Participants completed a paper-based

questionnaire package or accessed the materials through a password protected website. The Internet version of the questionnaire package contained a password, to prevent inadvertent exposure to the study or the instruments. The majority of participants completed the Internet-based version of the questionnaire (58%), which presented all items sequentially on one page, requiring the participant to scroll down to complete the remaining items. The completed instruments were returned to the researchers in the self-addressed envelope or they were anonymously e-mailed directly to the researcher. The paper version of the materials was accompanied by a reply paid envelope. To protect participants' responses from order effects, counterbalancing of the self-report measures was used on the paper and Internet versions (Shaughnessy & Zechmeister, 1994).

The exact response rate is unable to be determined due to the mixed design of paper and Internet methodologies. During the data collection phase, 250 paper questionnaires were distributed with 74 returned, resulting in a response rate of 30% for the paper questionnaires. The comparable response rate for the Internet-based questionnaires cannot be determined.

2.4. Statistical Analyses

Pearson's product-moment correlation coefficients and partial correlation coefficients controlling for method of participation were calculated to explore the direct linear relationships between age, depressive symptoms, suicidal ideation, sense of belonging to the general community and sense of belonging to the three levels of the gay community. Multiple regression analysis was used to investigate whether age and sense of belonging directly predicted mental health. Age, a sense of belonging to the general community and a sense of belonging to the three levels of the gay community were entered simultaneously in the equations predicting depressive symptoms and suicidal ideation.

Semi-partial correlation coefficients were calculated to determine the proportion of the criterion variance that was uniquely associated with each of the predictors.

Mplus version 4.2 (Muthen & Muthen, 2007) was used to test the path models. The path analysis used the maximum likelihood estimation method with the variance-covariance matrix. Path analyses generally use Chi-Square (χ^2) as an index of statistical fit. This index of statistical fit demonstrates the closeness of fit between the unconstrained sample covariance matrix and the constrained (hypothesised model) covariance matrix. As a rule, a significant χ^2 value indicates a poor fit, however, as χ^2 values have been demonstrated to be very sensitive to sample size, any model with a large sample size, as is the case with this study ($N = 177$) is likely to be rejected (Hu & Bentler, 1998). The decision to accept or reject a model, therefore should not be based merely on statistical grounds, but should also take into account substantive, theoretical, conceptual and practical considerations. Practical fit indices were, therefore, also used to determine model fit.

The practical fit indices used in this study are the Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI) and the Standardised Root Mean Square Residual (SRMR). The RMSEA offers a measure of model fit relative to the population covariance matrix when the complexity of the model is also accounted for. According to the guidelines proposed by Hu and Bentler (1999), RMSEA values less than .06 suggest a good fit, values between .06 and .08 suggest a moderate fit, values between .08 and .10 suggest a marginally good fit, and values greater than .10 suggest a poor fit. Hu and Bentler (1998) propose that measures such as RMSEA and TLI are less preferable with small sample sizes ($N < 250$). This suggestion has been supported by Curran, West, and Finch (1996), who suggest that RMSEA may not be an accurate measure of fit in sample sizes of less than 200. According

to the guidelines proposed by Hu and Bentler (1998), a cutoff value of .08 is recommended for the SRMR. The CFI offers a measure of the fit of the hypothesised model relative to the independent model, with values ranging from 0.00 to 1.00. Hu and Bentler (1998) suggest that CFI values between .90 and .95 indicate acceptable fit, with values greater than .95 suggesting good fit. The TLI is also a measure of comparative fit and like the CFI, values between .90 and .95 indicate acceptable fit, and values greater than .95 suggest good fit. The Hu and Bentler guidelines were used in the current study to evaluate model fit so as to circumvent the likelihood of a Type 1 error. Therefore, in the current study model fit was evaluated by χ^2 , RMSEA, SRMR, TLI and CFI values.

Additive and moderation effects were examined using hierarchical regression analysis proposed by Baron and Kenny (1986) and expanded by Jaccard, Turrisi, and Wan (1990). Method of participation was entered at Step 1 to control for associated variance. Age and the moderator (one aspect of sense of belonging) were entered at Step 2 and the interaction term (age x sense of belonging) was introduced at Step 3. Prior to calculating the interaction term for the hierarchical regression, the independent variable and the moderator were centered using the mean-deviation method (Tabachnick & Fidell, 1996). These new centered scores were then multiplied together to create the new interaction term. This interaction term has several advantages. Normal multiplicative interaction terms in regression analyses inflate standard errors of the regression coefficients (Jaccard et al., 1990). In addition, centering the independent variables prior to forming a multiplicative term addresses the issue of multicollinearity (Cronbach, 1987). The additive model was supported if both age and the sense of belonging variables were significant predictors of mental health at Step 2. The moderation model was supported if there was a significant change in R^2 from Step 2 to Step 3.

Chapter 3: Results

Data obtained from the completed questionnaires were entered into, and analysed, using SPSS for Windows Version 10.0. Path models were tested using Mplus Version 5.1. For all investigations, an alpha level of .05 was used for statistical significance. Following the initial analyses, results are presented sequentially for the three aims.

3.1. Initial Analyses

3.1.1. Data Screening

During data screening, missing data were detected in the psychological and demographic measures. A two-stage process was used to replace or eliminate missing data. A minority of the sample (7%, $n = 15$) did not respond to over 10% of the items. Most commonly this involved missing an entire psychological measure or not completing the demographics section. These cases were eliminated from the sample. The remaining missing data were replaced using the non-essential imputation method (Tabachnick & Fidell, 1996). Mean scores were used to fill missing cases on the psychometric instruments. This method was used as only a small number of items were missing in the remaining cases (1.4%), therefore reduction in variance was expected to be negligible.

The mean scores, standard deviations, skew and kurtosis measures on the unstandardised data for all participants are shown in Table 1. High standard deviations for the CES-D and SSGHQ measures can be observed, reflecting the spread over the data over a large range of values. The skewness and kurtosis values ranged from -0.82 to 1.13 and -1.22 to 0.97, respectively. Data screening identified that the CES-D, SSGHQ and SOBGCS3 were skewed, therefore the CES-D and SSGHQ measures were transformed using logarithmic transformations and the SOBGCS3 was transformed using a square-root transformation. These transformations resulted in skewness values for these variables

ranging between -0.24 and -0.65, which are within the guidelines proposed by Curran et al. (1996). Subsequent analyses used these newly transformed variables when testing Aims 1 and 3 using SPSS. The untransformed data were used to test the path models (Aim 2) using Mplus as the appropriate non-normality corrections with incomplete data are implemented within this program (Savalei, 2008).

Table 1

Descriptive Information for all Participants for all Measures in the Study (N =177)

Variable	Mean	SD	Skew	Kurtosis
Age	42.69	13.34	0.31	-0.64
SOBGCS1 (Broader)	10.15	5.35	-0.27	-1.08
SOBGCS2 (Groups)	9.71	5.66	-0.24	-1.22
SOBGCS3 (Friends)	12.84	5.59	-0.82	-0.33
SOBI-P (General)	49.94	12.76	-0.11	-0.69
CES-D	17.21	14.59	0.97	0.21
SSGHQ	6.07	4.24	1.13	0.97

3.1.2. Counterbalancing

The order of the questionnaire materials was counterbalanced using 24 different versions. To test for order effects, a multivariate analysis of variance (MANOVA) was conducted with the questionnaire version entered as the independent variable and the mental health and sense of belonging measures entered as the dependent variables. This revealed that there were no significant order effect, *Wilks' Lambda* = 0.43, $F(138, 871) = 0.97$, $p > .05$, *partial* $\eta^2 = 0.13$.

3.1.3. Method of Participation

Means and standard deviations for the paper and online methods of data collection were calculated for age and the mental health and sense of belonging variables to test for effects due to method of participation. As can be seen in Table 2, the paper version had higher mean scores on all variables except age and the SSGHQ. To test for differences in method participation, a multivariate analysis of variance (MANOVA) was conducted with the method of participation entered as the independent variable and the mental health and sense of belonging measures entered as the dependent variables as they are conceptually related. This revealed that there was a difference between methods of participation, *Wilks' Lambda* = 0.86, $F(6, 170) = 4.52$, $p < .001$, *partial* $\eta^2 = 0.14$. Consequently, method of participation was controlled for in testing the direct, additive and moderation models. An independent *t*-test revealed there was no difference in age between methods of participation, $t(175) = -0.09$, $p > .05$.

Table 2

Screening for Differences between Paper and Online Questionnaire Versions

<i>Variable</i>	<i>Paper (n = 74)</i>		<i>Online (n = 103)</i>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	42.59	12.08	42.77	14.23
CES-D	19.14	16.51	15.83	12.94
SSGHQ	5.54	4.92	6.46	3.66
SOBI	50.99	13.92	49.18	11.87
SOBGCS1 (Broader)	11.03	5.29	9.52	5.33
SOBGCS2 (Groups)	10.97	5.47	8.81	5.65
SOBGCS3 (Friends)	14.01	5.28	12.00	5.67

3.1.4. Demographic Data

The main demographic variables of interest in this research were sexual orientation and age. The participants who self-identified as queer were grouped with the men who self-identified as gay male. Ten men self-identified as bisexual, and were suspended from the analysis.

For ease of statistical analysis, relationship status was collapsed into a dichotomous variable. This variable became 1 = partnered (married/de facto/same sex relationship) and 2 = unpartnered (single/divorced/widowed). Employment status was also collapsed into an ordinal variable, such that 1 = full time, 2 = part time/casual, and 3 = not working.

3.1.5. Assumption Testing

Assumption testing revealed no violations of normality, homogeneity of variance matrices, linearity or multicollinearity. After transformations were performed to achieve normality, multivariate outliers were still detected amongst the mental health dependant variables using the Mahalanobis' Distance statistic (Tabachnick & Fidell, 1996). A critical distance of 13.8 was applied for 2 degrees of freedom (2 dependant variables) and an alpha level of .001 (which is conservative but considered the most appropriate estimate) (Tabachnick & Fidell, 1996). This standard revealed ten influential cases that were suspended from subsequent analyses. Analysis of response patterns of the suspended participants revealed that 8 of the 10 outliers reported perfect mental health on the CES-D and the SSGHQ, indicating an extreme response style which would have reduced the validity of results (Tabachnick & Fidell, 1996).

3.2. Aim 1

The first aim of the study was to test for direct relationships between age, mental health and sense of belonging. Pearson product-moment correlation coefficients and partial

correlation coefficients controlling for method of participation were calculated to explore the relationships between age, depressive symptoms, suicidal ideation, sense of belonging to the general community and sense of belonging to the three levels of the gay community. Partial correlation coefficients controlling for method of participation were used in the interpretations of the correlations. Results can be seen in Table 3 and are interpreted using Cohen's (1988) criteria.

Table 3

Correlations Between Age, Depressive Symptoms, Suicidal Ideation, Sense of Belonging to the General Community and Sense of Belonging to the Three Levels of the Gay Community and Partial Correlation Coefficients Controlling for Method of Participation (N = 177)

Variable	1	2	3	4	5	6	7
1. Age	-	-.24**	-.05	.16*	.06	.10	.15*
2. CES-D	-.24**	-	.52***	-.58***	-.22**	-.34***	-.29***
3. SSGHQ	-.05	.55***	-	-.67***	-.22**	-.32***	-.38***
4. SOBI-P	.16*	-.59***	-.68***	-	.33***	.45***	.48***
5. SOBGCS1 (Broader)	.06	-.23**	-.20**	.32***	-	.79***	.57***
6. SOBGCS2 (Groups)	.10	-.36***	-.29***	.45***	.78***	-	.62***
7. SOBGCS3 (Friends)	.15*	-.31***	-.35***	.48***	.55***	.61***	-

* $p < .05$. ** $p < .01$. *** $p < .001$.

Note. Correlations above the diagonal are Pearson's Product-moment correlation coefficients and correlations below the diagonal are partial correlation coefficients controlling for method of participation.

There was a moderate negative correlation between age and depressive symptoms, such that depressive symptoms decreased as age increased. Depressive symptoms and suicidal ideation were positively related to each other. The two mental health measures

were negatively correlated with all four sense of belonging variables, however a sense of belonging to broader gay community had the weakest correlations with mental health. A sense of belonging to the general community had moderate to strong positive correlations with all three levels of gay community. Strong positive correlations can be seen among the measures of a sense of belonging to the three levels of gay community. Among all the variables, the strongest direct relationship can be observed between a sense of belonging to the broader gay community and a sense of belonging to gay groups.

A simultaneous multiple regression analysis was employed to investigate the unique effects of age, a sense of belonging to the general community, a sense of belonging to the three levels of the the gay community in predicting depressive symptoms, while controlling for the effect of method of participation. Results can be seen in Table 4.

Table 4

Summary of Regression Analysis on Method of Participation, Age and the Four Aspects of Sense of Belonging Predicting Depressive Symptoms (N = 177)

Variable	<i>B</i>	<i>SE B</i>	β	<i>sr</i>	sr^2	<i>t</i>
Method of participation ^a	-0.11	0.05	-0.12	-0.12	0.01	-1.95
Age	0.00	0.00	-0.15	-0.15	0.02	-2.42*
SOBI-P	-0.02	0.00	-0.53	-0.44	0.20	-7.40***
SOBGCS1 (Broader)	0.01	0.01	0.07	0.05	0.00	0.75
SOBGCS2 (Groups)	-0.02	0.01	-0.20	-0.11	0.01	-1.83
SOBGCS3 (Friends)	0.02	0.04	0.05	0.03	0.00	0.55

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

^a 1 = Paper questionnaire, 2 = Online questionnaire

sr = semi-partial correlation coefficient, sr^2 = squared semi-partial correlation coefficient

Method of participation, age and the four aspects of sense of belonging accounted for 37% of the variance in depressive symptoms, $R^2 = .39$, adjusted $R^2 = .37$, $F(6, 170) = 17.94$, $p < .001$, Cohen's $f^2 = 0.64$. Age and a sense of belonging to the general community significantly contributed to the predictive power of the model. The squared semi-partial correlation coefficients reveal that 20% of the variance in depressive symptoms was uniquely associated with a sense of belonging to the general community, and 2% of the variance in depressive symptoms was uniquely associated with age.

Age, a sense of belonging to the general community, a sense of belonging to the three levels of the the gay community and method of participation were entered simultaneously in a second regression equation predicting suicidal ideation. Results can be seen in Table 5.

Table 5

Summary of Regression Analysis on Method of Participation, Age and the Four Aspects of Sense of Belonging Predicting Suicidal Ideation (N = 177)

Variable	<i>B</i>	<i>SE B</i>	β	<i>sr</i>	sr^2	<i>t</i>
Method of participation ^a	0.10	0.03	0.17	0.17	0.03	3.08**
Age	0.00	0.00	0.06	0.06	0.00	1.04
SOBI-P	-0.01	0.00	-0.66	-0.55	0.31	-10.12***
SOBGCS1 (Broader)	0.00	0.01	0.04	0.03	0.00	0.48
SOBGCS2 (Groups)	0.00	0.01	0.01	0.01	0.00	0.13
SOBGCS3 (Friends)	-0.02	0.02	-0.07	-0.05	0.00	-0.92

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

^a 1 = Paper questionnaire, 2 = Online questionnaire

sr = semi-partial correlation coefficient, sr^2 = squared semi-partial correlation coefficient

Method of participation, age and the four aspects of sense of belonging accounted for 47% of the variance in suicidal ideation, $R^2 = .49$, adjusted $R^2 = .47$, $F(6, 170) = 27.23$, $p < .001$, Cohen's $f^2 = 0.96$. A sense of belonging to the general community and method of participation significantly contributed to the predictive power of the model. The squared semi-partial correlation coefficients reveal that 31% of the variance in suicidal ideation was uniquely associated with a sense of belonging to the general community and 3% of the variance in suicidal ideation was associated with method of participation.

3.2.1. Summary of Aim 1

Age was found to have a moderate, negative relationship with depressive symptoms. The four aspects of a sense of belonging were negatively related to depressive symptoms and with suicidal ideation. When all the variables were considered at the same time in regression equations, a sense of belonging to the general community and age significantly predicted depressive symptoms, whereas a sense of belonging to the general community and method of participation significantly predicted suicidal ideation.

3.3 Aim 2

The second aim of the study was to investigate the indirect relationships between age and mental health, via a sense of belonging to the three levels of the gay community and a sense of belonging to the general community. In the hypothesised model, it was expected that age would be associated with a sense of belonging to the three levels of the gay community, which in turn would be associated with a sense of belonging to the general community, which would then predict mental health.

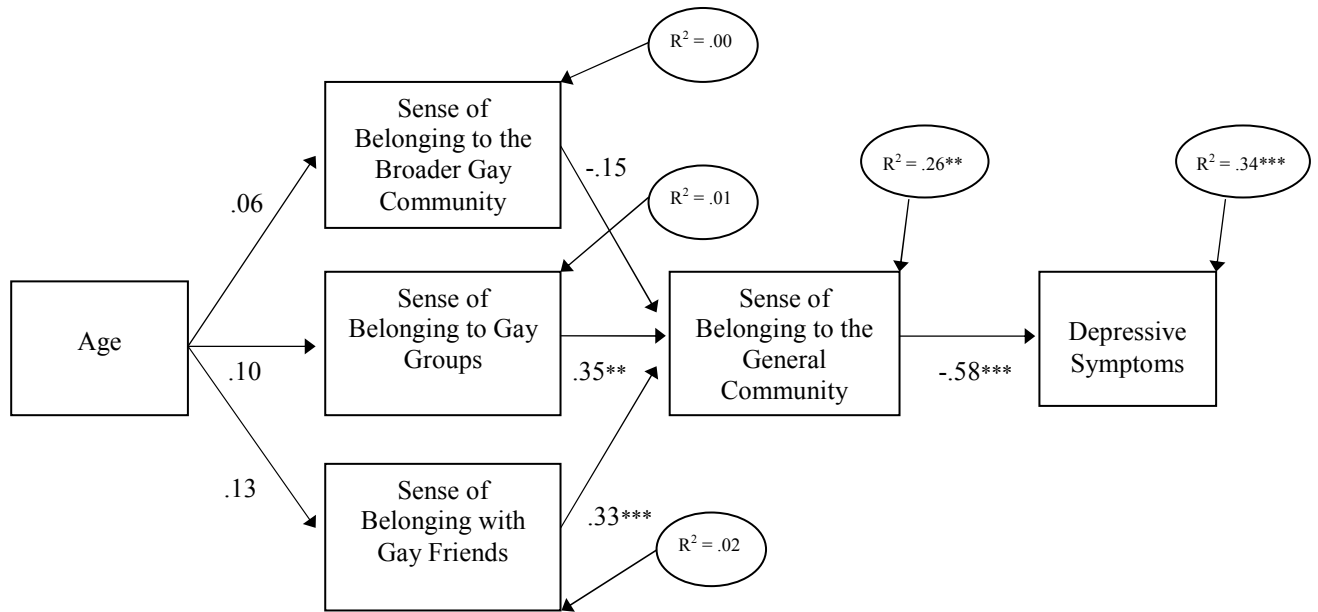
The first path model tested the prediction of depressive symptoms. Table 6 shows the covariance matrix for the variables included in the first model.

Table 6

Covariance Matrix for the Model Predicting Depressive Symptoms (N=177)

Variable	1	2	3	4	5	6
1. Age	177.90	3.97	7.32	9.93	27.04	-28.07
2. SOBGCS1 (Broader)	-	28.62	23.85	17.86	22.31	-19.65
3. SOBGCS2 (Groups)	-	-	32.08	20.79	32.76	-27.21
4. SOBGCS3 (Friends)	-	-	-	31.20	33.79	-24.30
5. SOBI-P (General)	-	-	-	-	162.82	-109.14
6. CES-D	-	-	-	-	-	212.80

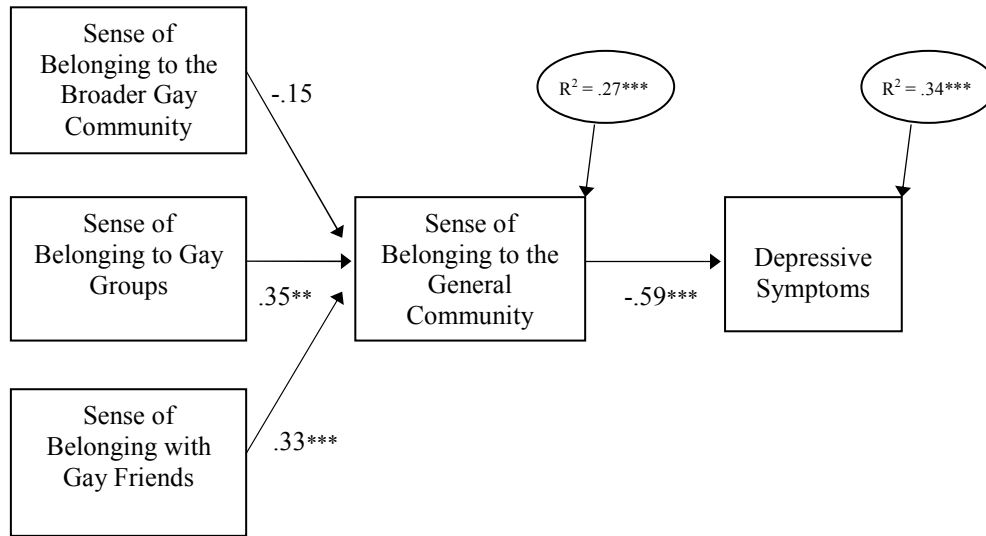
The fit indices for the path analysis for the hypothesised model, as specified in Figure 3, were as follows: $\chi^2 (8) = 278.93, p < .001$, CFI = 0.32, TLI = -0.27, SRMR = .26, RMSEA = .44, RMSEA 90% CI = 0.39 – 0.48. The χ^2 , CFI, TLI, SRMR and RMSEA indicated that the model is a poor fit. Overall, five out of the five fit indices suggest that this is a poor model for predicting depressive symptoms among gay men. Figure 3 shows the standardised path estimates for the model predicting depressive symptoms. There were no significant indirect pathways from age to depressive symptoms.



* $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 3. Estimated path model predicting depressive symptoms.

The hypothesised model predicting depressive symptoms was modified by removing age as this variable did not significantly predict sense of belonging to any of the three levels of gay community. The fit indices for the path analysis for the revised model, as specified in Figure 4, were as follows: $\chi^2(3) = 1.60$, $p > .05$, CFI = 1.00, TLI = 1.00, SRMR = .02, RMSEA = .00. The χ^2 , CFI, TLI, SRMR and RMSEA indicated that the model is a good fit. Overall, five out of the five fit indices suggest that this is a good model for predicting depressive symptoms among gay men. Figure 4 shows the standardised path estimates for the revised model. The significant paths in the model indicate that a sense of belonging to gay groups and a sense of belonging with gay friends were related to a sense of belonging to the general community, which was directly related to depressive symptoms. The model predicted 34% of variance in depressive symptoms.



* $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 4. Revised path model predicting depressive symptoms.

MPlus also allows the examination of the total indirect effects, that is, the impact of all variables between a sense of belonging to each level of the gay community and depressive symptoms. Results indicated that there were significant indirect paths from a sense of belonging to gay groups to depressive symptoms, $r = -.21$, $p < .01$, and from a sense of belonging with gay friends to depressive symptoms, $r = -.19$, $p < .001$.

A final path model predicting depressive symptoms was tested. In this model, sense of belonging to the broader gay community was removed as it was not significantly associated with sense of belonging to the general community. The χ^2 value for this model was compared to the previous model to determine if removing the non-significant path improved model fit. There was no significant change in model fit by eliminating the non-significant path, $\chi^2(1) = 0.01$, $p > .05$, therefore the revised model, as shown in Figure 4, is accepted as the best model with respect to the second aim predicting depressive symptoms.

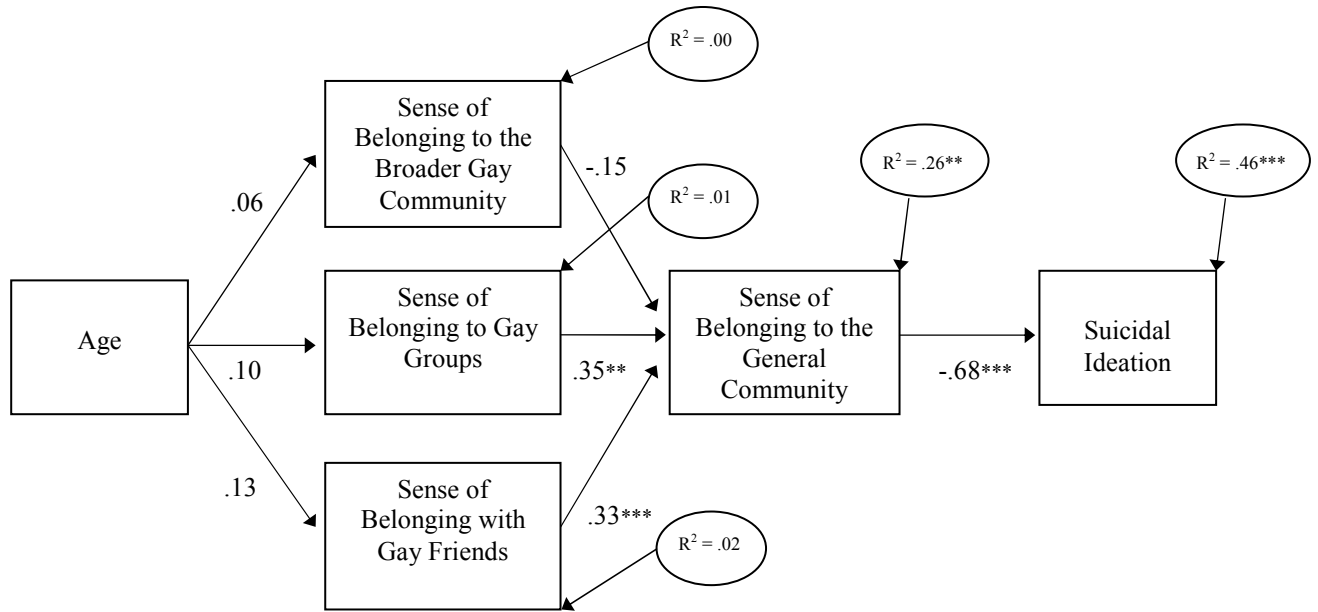
The procedure was repeated assessing model fit for the prediction of suicidal ideation among gay men. Table 7 shows the covariance matrix for the variables included in the model.

Table 7

Covariance Matrix for the Model Predicting Suicidal Ideation (N=177)

Variable	1	2	3	4	5	6
1. Age	177.90	3.97	7.32	9.93	27.04	-5.42
2. SOBGCS1 (Broader)	-	28.62	23.85	17.86	22.31	-4.31
3. SOBGCS2 (Groups)	-	-	32.08	20.79	32.76	-6.93
4. SOBGCS3 (Friends)	-	-	-	31.20	33.79	-8.36
5. SOBI-P (General)	-	-	-	-	162.82	-36.97
6. SSGHQ	-	-	-	-	-	17.98

The fit indices for the path analysis for the hypothesised model predicting suicidal ideation, as specified in Figure 5, were as follows: $\chi^2(8) = 278.42, p < .001, CFI = 0.38, TLI = -0.16, SRMR = .25, RMSEA = .44, RMSEA\ 90\% CI = 0.39 - 0.48$. The $\chi^2, CFI, TLI, SRMR$ and $RMSEA$ indicated that the model is a poor fit. Overall, all fit indices suggest that this is a poor model for predicting suicidal ideation among gay men. Figure 5 shows the standardised path estimates for the model predicting suicidal ideation. There were no significant indirect pathways from age to suicidal ideation.



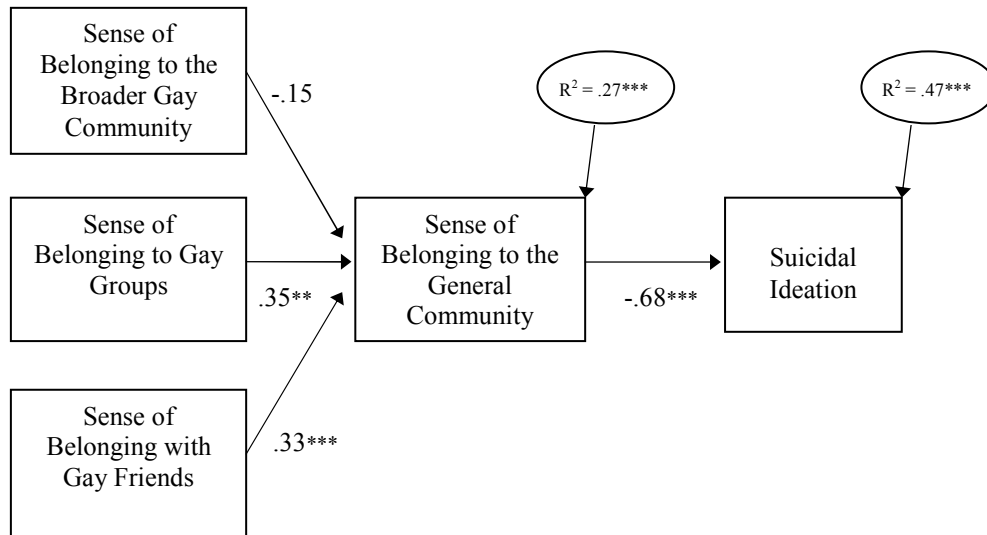
* $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 5. Estimated path model predicting suicidal ideation.

The model predicting suicidal ideation was modified by removing age as this variable did not significantly predict a sense of belonging to any of the three levels of the gay community. The fit indices for the path analysis for the revised model, as specified in Figure 6, were as follows: $\chi^2(3) = 1.72$, $p > .05$, CFI = 1.00, TLI = 1.00, SRMR = .01, RMSEA = .00. The χ^2 , CFI, TLI, SRMR and RMSEA indicated that the model is a good fit. Overall, all the fit indices suggest that this is a good model for predicting suicidal ideation among gay men.

Figure 4 shows the standardised path estimates for the model predicting suicidal ideation. The significant paths in the model indicate that a sense of belonging to gay groups and a sense of belonging with gay friends were related to a sense of belonging to the general community, which was directly related to suicidal ideation. The total indirect effects were examined, that is, the impact of all variables between a sense of belonging to each level of the gay community and suicidal ideation. Results indicated that there were

significant indirect paths from a sense of belonging to gay groups to suicidal ideation, $r = -.24, p < .01$, and from a sense of belonging with gay friends to suicidal ideation, $r = -.23, p < .001$. The model predicted 47% of variance in suicidal ideation.



* $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 6. Revised path model predicting suicidal ideation.

A final path model predicting suicidal ideation was tested. In this model, sense of belonging to the broader gay community was removed as it was not significantly associated with sense of belonging to the general community. Again, the χ^2 value for this model was compared to the previous model to determine if removing the non-significant path improved model fit. There was no significant change in model fit by eliminating the non-significant path, $\chi^2(1) = 0.50, p > .05$, therefore the revised model, as shown in Figure 6, is accepted as the most appropriate model for predicting suicidal ideation using these variables.

3.3.1. Summary of Aim 2

The hypothesised path models, investigating the indirect relationships between age and mental health, via a sense of belonging to the gay and general communities had poor model fit. The revised models, which removed the age variable, resulted in all fit indices suggesting good model fit, with three significant direct paths in each model. A sense of belonging to gay groups and a sense of belonging with gay friends were directly associated with a sense of belonging to the general community, which in turn was directly related to depressive symptoms or suicidal ideation. In each of the revised models, there were significant indirect relationships from a sense of belonging to gay groups and with gay friends to mental health, via a sense of belonging to the general community.

3.4. Aim 3

The third aim was to investigate additive and moderation models to further explain the interrelations between age, sense of belonging (to the general community, the broader gay community, groups and gay friends) and two indices of mental health.

3.4.1. Additive and Moderation Effects of Age and Sense of Belonging to the General Community on Mental Health

The first analysis used additive and moderation models to investigate the relationship between age and sense of belonging to the general community with depressive symptoms as the outcome variable. As shown in Table 8, method of participation was entered at Step 1 but did not account for any variance in depressive symptoms. The introduction of age and sense of belonging to the general community at Step 2 explained 36% of variance in depressive symptoms. Examination of the Beta-values indicated that both age and sense of belonging to the general community contributed to the predictive power of the model. These results support the additive model. The addition of the

interaction term at Step 3 did not explain any additional variance in depressive symptoms, thus there was no support for the moderation effect. Age and sense of belonging to the general community contributed significantly to the final model. The men who were older and the men with a higher sense of belonging to the general community reported fewer depressive symptoms. The final model explained 36% of variance in depressive symptoms, $F(4, 172) = 25.96, p < .001, \text{Cohen's } f^2 = 0.60$.

Further analysis repeated the procedure with suicidal ideation as the outcome variable. As shown in Table 8, method of participation was entered at Step 1 and explained a significant 4% of variance in suicidal ideation. Participants who completed the online questionnaire had higher levels of suicidal ideation. The introduction of age and sense of belonging to the general community at Step 2 explained an additional 44% of variance in suicidal ideation. Examination of the Beta-values indicated that only sense of belonging to the general community and method of participation contributed to the predictive power of the model. These results do not support the additive model. The addition of the interaction term at Step 3 explained a significant additional 2% of variance in suicidal ideation. The significant change in R^2 provides support for the moderation model.

Figure 7 shows the age and sense of belonging interaction effect. High and low values for sense of belonging to the general community and age were plotted at +1 *SD* and -1 *SD* of their centred mean of zero. The beta values for younger age, $\beta = 0.02, t(173) = 10.23, p < .001, R^2 = .81, \text{Cohen's } f^2 = 4.26$, and older age, $\beta = 0.01, t(173) = 6.97, p < .001, R^2 = .53, \text{Cohen's } f^2 = 1.13$, were significant. There was a significant difference between the beta values for older and younger age, $t(173) = 2.56, p < .05$. Results indicate that sense of belonging to the general community was associated with suicidal ideation for older and younger age, however the strength of this relationship was greater for younger gay men.

Table 8

Summary of Hierarchical Regression Analysis for Age, Sense of Belonging to the General Community, and the Interaction Between Age and Sense of Belonging to the General Community Predicting Depressive Symptoms and Suicidal Ideation Controlling for Method of Participation

Variable	<i>B</i>	<i>SE B</i>	β	<i>t</i>
Depressive Symptoms				
Step 1 [$R^2 = .00$, adjusted $R^2 = .00$, $F(1, 175) = 0.75$, $p > .05$]				
Method of participation ^a	-0.06	0.07	-0.07	-0.87
Step 2 [$\Delta R^2 = .37$, adjusted $R^2 = .36$, $\Delta F(2, 173) = 51.09$, $p < .001$]				
Method of participation ^a	-0.09	0.05	-0.10	-1.73
Age	0.00	0.00	-0.15	-2.46*
SOBI-P	-0.02	0.00	-0.57	-9.29***
Step 3 [$\Delta R^2 = .00$, adjusted $R^2 = .36$, $\Delta F(1, 172) = 0.66$, $p > .05$]				
Method of participation ^a	-0.09	0.05	-0.10	-1.69
Age	0.00	0.00	-0.14	-2.23*
SOBI-P	-0.02	0.00	-0.57	-9.24***
Age x SOBI-P	0.00	0.00	-0.05	-0.82
Suicidal Ideation				
Step 1 [$R^2 = .05$, adjusted $R^2 = .04$, $F(1, 175) = 9.18$, $p < .01$]				
Method of participation ^a	0.13	0.04	0.22	3.03**
Step 2 [$\Delta R^2 = .44$, adjusted $R^2 = .48$, $\Delta F(2, 173) = 73.74$, $p < .001$]				
Method of participation ^a	0.10	0.03	0.18	3.23**
Age	0.00	0.00	0.05	0.97
SOBI-P	-0.01	0.00	-0.67	-12.11***
Step 3 [$\Delta R^2 = .02$, adjusted $R^2 = .49$, $\Delta F(1, 172) = 6.42$, $p < .05$]				
Method of participation ^a	0.10	0.03	0.17	3.17**
Age	0.00	0.00	0.02	0.43
SOBI-P	-0.01	0.00	-0.68	-12.39***
Age x SOBI-P	0.00	0.00	0.14	2.53*

Note. ^a 1 = Paper questionnaire, 2 = Online questionnaire

* $p < .05$. ** $p < .01$. *** $p < .001$.

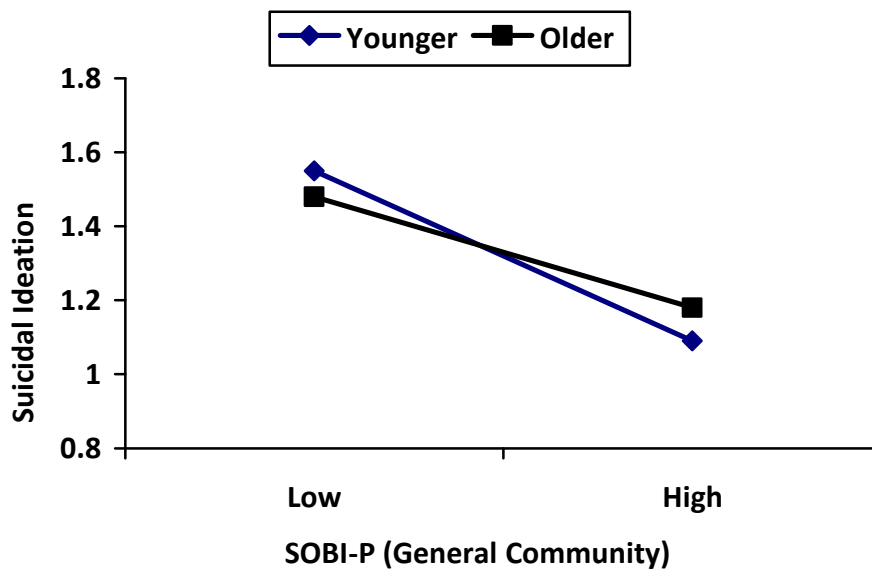


Figure 7. Age as a moderator of the relation between sense of belonging to the general community and suicidal ideation.

3.4.2. Additive and Moderation Effects of Age and Sense of Belonging to Gay Communities on Mental Health

The next analyses investigated the relationship between sense of belonging to the broader gay community and age in the prediction of depressive symptoms and suicidal ideation. The first analysis used depressive symptoms as the outcome variable. As shown in Table 9, method of participation was entered at Step 1 but did not account for any variance in depressive symptoms. The introduction of age and sense of belonging to the broader gay community at Step 2 explained 9% of the variance in depressive symptoms. Examination of the Beta-values indicated that both age and sense of belonging to the broader gay community contributed to the predictive power of the model. These results support the additive model. The addition of the interaction term at Step 3 did not explain any additional variance in depressive symptoms, thus there was no support for the moderation effect. A sense of belonging to the broader gay community and age

significantly contributed to the final model. The gay men who had a higher sense of belonging to broader gay community and the gay men who were older reported fewer depressive symptoms. The final model explained 9% of variance in depressive symptoms, $F(4, 172) = 5.26, p < .01, \text{Cohen's } f^2 = 0.12$.

Further analysis repeated the procedure with suicidal ideation as the outcome measure. As shown in Table 9, method of participation was entered at Step 1 and explained a significant 4% of variance in suicidal ideation. The introduction of age and sense of belonging to broader gay community at Step 2 explained a significant additional 3% of variance in suicidal ideation. Examination of the Beta-values indicated that sense of belonging to broader gay community and method of contribution contributed to the predictive power of the model. These results do not support the additive model. The addition of the interaction term at Step 3 did not explain any additional variance in suicidal ideation, thus there was no support for the moderation effect. A sense of belonging to the broader gay community and method of participation significantly contributed to the final model. The gay men who had a higher sense of belonging to the broader gay community and those who completed the paper questionnaire reported lower levels of suicidal ideation. The final model explained 8% of variance in suicidal ideation, $F(4, 172) = 4.56, p < .01, \text{Cohen's } f^2 = 0.11$.

Table 9

Summary of Hierarchical Regression Analysis for Age, Sense of Belonging to the Broader Gay Community, and the Interaction Between Age and Sense of Belonging to the Broader Gay Community Predicting Depressive Symptoms and Suicidal Ideation Controlling for Method of Participation

Variable	<i>B</i>	<i>SE B</i>	β	<i>t</i>
Depressive Symptoms				
Step 1 [$R^2 = .00$, adjusted $R^2 = .00$, $F(1, 175) = 0.75$, $p > .05$]				
Method of participation ^a	-0.06	0.07	-0.07	-0.87
Step 2 [$\Delta R^2 = .10$, adjusted $R^2 = .09$, $\Delta F(2, 173) = 10.11$, $p < .001$]				
Method of participation ^a	-0.08	0.06	-0.09	-1.30
Age	-0.01	0.00	-0.23	-3.17**
SOBGCS1 (Broader)	-0.02	0.01	-0.22	-3.01**
Step 3 [$\Delta R^2 = .00$, adjusted $R^2 = .09$, $\Delta F(1, 172) = 0.11$, $p > .05$]				
Method of participation ^a	-0.08	0.07	-0.09	-1.23
Age	-0.01	0.00	-0.22	-3.06**
SOBGCS1 (Broader)	-0.02	0.01	-0.21	-2.87**
Age x SOBGCS1 (Broader)	0.00	0.00	-0.03	-0.33
Suicidal Ideation				
Step 1 [$R^2 = .05$, adjusted $R^2 = .04$, $F(1, 175) = 9.18$, $p < .01$]				
Method of participation ^a	0.13	0.04	0.22	3.03**
Step 2 [$\Delta R^2 = .04$, adjusted $R^2 = .07$, $\Delta F(2, 173) = 3.67$, $p < .05$]				
Method of participation ^a	0.11	0.04	0.20	2.69**
Age	0.00	0.00	-0.04	-0.59
SOBGCS1 (Broader)	-0.01	0.00	-0.19	-2.61*
Step 3 [$\Delta R^2 = .01$, adjusted $R^2 = .08$, $\Delta F(1, 172) = 1.40$, $p > .05$]				
Method of participation ^a	0.12	0.04	0.21	2.85**
Age	0.00	0.00	-0.03	-0.38
SOBGCS1 (Broader)	-0.01	0.00	-0.17	-2.32*
Age x SOBGCS1 (Broader)	0.00	0.00	-0.09	-1.18

Note. ^a 1 = Paper questionnaire, 2 = Online questionnaire

* $p < .05$. ** $p < .01$. *** $p < .001$.

The next analyses investigated the relationship between sense of belonging to gay groups and age with depressive symptoms as the outcome variable. As shown in Table 10, method of participation was entered at Step 1, but did not account for any variance in depressive symptoms. The introduction of age and sense of belonging to gay groups at Step 2 explained 16% of the variance in depressive symptoms. Examination of the Beta-values indicated that age and sense of belonging to gay groups contributed to the predictive power of the model. These results support the additive model. The addition of the interaction term at Step 3 did not explain any additional variance, thus there was no support for the moderation effect. Age and a sense of belonging to gay groups significantly contributed to the final model. The gay men who were older and the gay men with a greater sense of belonging to gay groups reported fewer depressive symptoms. The final model explained 16% of variance in depressive symptoms, $F(4, 172) = 9.31, p < .001$, Cohen's $f^2 = 0.22$.

Further analysis repeated the procedure with suicidal ideation as the outcome variable. As shown in Table 10, method of participation was entered at Step 1 and explained 4% of variance in suicidal ideation. The introduction of age and sense of belonging to gay groups at Step 2 explained an additional 8% of variance. Examination of the Beta-values indicated that sense of belonging to gay groups and method of participation contributed to the predictive power of the model. Results do not support the additive model. Addition of the interaction term at Step 3 did not explain any additional variance, thus there was no support for the moderation effect. A sense of belonging to gay groups and method of participation significantly contributed to the final model. The gay men with a higher sense of belonging to gay groups and those who completed the paper questionnaire reported lower levels of suicidal ideation. The final model explained 11% of variance in suicidal ideation, $F(4, 172) = 6.52, p < .001$, Cohen's $f^2 = 0.15$.

Table 10

Summary of Hierarchical Regression Analysis for Age, Sense of Belonging to Gay Groups, and the Interaction Between Age and Sense of Belonging to Gay Groups Predicting Depressive Symptoms and Suicidal Ideation Controlling for Method of Participation

Variable	<i>B</i>	<i>SE B</i>	β	<i>t</i>
Depressive Symptoms				
Step 1 [$R^2 = .00$, adjusted $R^2 = .00$, $F(1, 175) = 0.75$, $p > .05$]				
Method of participation ^a	-0.06	0.07	-0.07	-0.87
Step 2 [$\Delta R^2 = .17$, adjusted $R^2 = .16$, $\Delta F(2, 173) = 17.87$, $p < .001$]				
Method of participation ^a	-0.11	0.06	-0.13	-1.84
Age	-0.01	0.00	-0.21	-2.97**
SOBGCS2 (Groups)	-0.03	0.01	-0.34	-4.87***
Step 3 [$\Delta R^2 = .00$, adjusted $R^2 = .16$, $\Delta F(1, 172) = 0.66$, $p > .05$]				
Method of participation ^a	-0.11	0.06	-0.12	-1.75
Age	-0.01	0.00	-0.20	-2.93**
SOBGCS2 (Groups)	-0.03	0.01	-0.34	-4.76***
Age x SOBGCS2 (Groups)	0.00	0.00	-0.06	-0.81
Suicidal Ideation				
Step 1 [$R^2 = .05$, adjusted $R^2 = .04$, $F(1, 175) = 9.18$, $p < .01$]				
Method of participation ^a	0.13	0.04	0.22	3.03**
Step 2 [$\Delta R^2 = .08$, adjusted $R^2 = .12$, $\Delta F(2, 173) = 8.08$, $p < .001$]				
Method of participation ^a	0.10	0.04	0.17	2.34*
Age	0.00	0.00	-0.03	-0.36
SOBGCS2 (Groups)	-0.01	0.00	-0.29	-3.95***
Step 3 [$\Delta R^2 = .00$, adjusted $R^2 = .11$, $\Delta F(1, 172) = 0.14$, $p > .05$]				
Method of participation ^a	0.10	0.04	0.17	2.36*
Age	0.00	0.00	-0.02	-0.34
SOBGCS2 (Groups)	-0.01	0.00	-0.28	-3.88***
Age x SOBGCS2 (Groups)	0.00	0.00	-0.03	-0.37

Note. ^a 1 = Paper questionnaire, 2 = Online questionnaire

* $p < .05$. ** $p < .01$. *** $p < .001$.

The final additive and moderation models were proposed to examine the relationship between sense of belonging with gay friends and age, with depressive symptoms as the outcome variable. As shown in Table 11, method of participation was entered at Step 1, but did not account for any variance in depressive symptoms. The introduction of age and sense of belonging with gay friends at Step 2 explained 12% of the variance in depressive symptoms. Only age and sense of belonging with gay friends contributed to the predictive power of the model. These results support the additive model. The addition of the interaction term at Step 3 did not explain any additional variance in depressive symptoms, thus there was no support for the moderation effect. Age and a sense of belonging with gay friends significantly contributed to the final model. The gay men who were older and the gay men with a greater sense of belonging with gay friends reported fewer depressive symptoms. The final model explained 12% of variance in depressive symptoms, $F(4, 172) = 6.81, p < .001, \text{Cohen's } f^2 = 0.16$.

Further analysis repeated the procedure with suicidal ideation as the outcome variable. As shown in Table 11, method of participation was entered at Step 1 and explained 4% of variance in suicidal ideation. The introduction of age and sense of belonging with gay friends at Step 2 explained an additional 12% of variance in suicidal ideation. Only sense of belonging with gay friends and method of participation contributed to the model, therefore results do not support the additive model. The addition of the interaction term at Step 3 did not explain additional variance in suicidal ideation, thus there was no support for the moderation effect. Only a sense of belonging with gay friends and method of participation significantly contributed to the final model. The gay men who had a higher sense of belonging with gay friends and who completed the paper questionnaire reported less suicidal ideation. The final model explained 15% of variance in suicidal ideation, $F(4, 172) = 8.65, p < .001, \text{Cohen's } f^2 = 0.20$.

Table 11

Summary of Hierarchical Regression Analysis for Age, Sense of Belonging with Gay Friends, and the Interaction Between Age and Sense of Belonging with Gay Friends Predicting Depressive Symptoms and Suicidal Ideation Controlling for Method of Participation

Variable	<i>B</i>	<i>SE B</i>	β	<i>t</i>
Depressive Symptoms				
Step 1 [$R^2 = .00$, adjusted $R^2 = .00$, $F(1, 175) = 0.75$, $p > .05$]				
Method of participation ^a	-0.06	0.07	-0.07	-0.87
Step 2 [$\Delta R^2 = .13$, adjusted $R^2 = .12$, $\Delta F(2, 173) = 13.28$, $p < .001$]				
Method of participation ^a	-0.10	0.06	-0.12	-1.62
Age	-0.01	0.00	-0.20	-2.77**
SOBGCS3 (Friends)	-0.13	0.03	-0.28	-3.87***
Step 3 [$\Delta R^2 = .00$, adjusted $R^2 = .12$, $\Delta F(1, 172) = 0.00$, $p > .05$]				
Method of participation ^a	-0.10	0.06	-0.12	-1.61
Age	-0.01	0.00	-0.20	-2.75**
SOBGCS3 (Friends)	-0.13	0.03	-0.28	-3.86***
Age x SOBGCS3 (Friends)	0.00	0.00	0.00	0.03
Suicidal Ideation				
Step 1 [$R^2 = .05$, adjusted $R^2 = .04$, $F(1, 175) = 9.18$, $p < .01$]				
Method of participation ^a	0.13	0.04	0.22	3.03**
Step 2 [$\Delta R^2 = .12$, adjusted $R^2 = .15$, $\Delta F(2, 173) = 12.18$, $p < .001$]				
Method of participation ^a	0.09	0.04	0.16	2.25*
Age	0.00	0.00	0.00	-0.02
SOBGCS3 (Friends)	-0.10	0.02	-0.35	-4.88***
Step 3 [$\Delta R^2 = .00$, adjusted $R^2 = .15$, $\Delta F(1, 172) = 0.05$, $p > .05$]				
Method of participation ^a	0.09	0.04	0.16	2.24*
Age	0.00	0.00	0.00	-0.03
SOBGCS3 (Friends)	-0.10	0.02	-0.35	-4.87***
Age x SOBGCS3 (Friends)	0.00	0.00	0.02	0.23

Note. ^a 1 = Paper questionnaire, 2 = Online questionnaire

* $p < .05$. ** $p < .01$. *** $p < .001$.

3.4.3. *Summary of Aim 3*

In the prediction of depressive symptoms, all additive models were supported. In each model, age and each aspect of sense of belonging were found to contribute independently to the prediction of depressive symptoms. The gay men who were older, and the gay men who had a higher sense of belonging to each of the four aspects of belonging, had fewer depressive symptoms. The results did not support any of the moderation models predicting depressive symptoms, indicating that the relationship between all four aspects of sense of belonging and depressive symptoms was not associated with age.

Conversely, in the prediction of suicidal ideation, none of the additive models were supported. In each of the models, only the aspect of sense of belonging and method of participation contributed to the prediction of suicidal ideation. The results supported one moderation model, with age moderating the relation between sense of belonging to the general community and suicidal ideation. Higher sense of belonging to the general community was associated with less suicidal ideation at younger and older age, although the relationship between sense of belonging to the general community and suicidal ideation was stronger for younger gay men than for older gay men.

Chapter 4: Discussion

The study extended previous research by testing the interrelations between age, sense of belonging and mental health in a sample of Australian gay men. The study had three distinct aims. The first was to investigate the direct relationships between age, sense of belonging and two indices of mental health among gay men. Second, the study aimed to investigate the indirect relationships between age and mental health, via a sense of belonging to the three levels of the gay community and a sense of belonging to the general community. Finally, the third aim was to investigate the applicability of additive and moderation models in predicting the relationship between age, sense of belonging and mental health. Discussion of the results is presented in the order of the aims and hypotheses, before consideration of the implications, limitations, and recommendations for future research.

4.1. Aim 1

4.1.1. Hypothesis 1

The first hypothesis proposed that older age would be related to a decrease in depressive symptoms and that older age would be associated with an increase in suicidal ideation. This hypothesis was partially supported. Results indicated that age was negatively related to depressive symptoms, such that depressive symptoms decreased with age. Age was found to be unrelated to suicidal ideation. There are few studies to which these results can be compared, as age-related associations with gay men's mental health have rarely been studied.

The current finding of a moderate negative correlation between age and depressive symptoms is consistent with research finding a weak negative relationship between age and depression in gay men, aged 17 to 78 years (Carlson & Steuer, 1985). This

correlational research, using a different instrument for measuring depressive symptoms, also found that gay men become less depressed as they age. The broader trend of decreased rates of depression as men age is reflected in population-based studies of the general community. Australian research suggests that affective disorders in men decline after age 55 (Australian Bureau of Statistics, 1997). A large study in the UK revealed a similar trend of decreasing rates of depression in men with age (Melzer et al., 2004).

It is not well understood why the rate of depression in men decreases with age. It has been suggested that this phenomenon may be a direct consequence of inadequate detection and diagnosis of depression in older men (Suominen et al., 2004). It is thought depression is often not diagnosed in older men because they are less likely to express their emotional distress and psychological difficulties (Murray et al., 2006). The relationship between older age and a decrease in depressive symptoms detected in the current study and in the Carlson and Steuer (1985) study, conducted fifteen years apart, suggest there may be other factors related to the differences observed.

It is possible that a mortality effect may have contributed to the current and historic findings. The more depressed gay men may have died earlier due to suicide, substance abuse or other depression-related factors. Psychological autopsy studies in the US reveal that alcohol dependence is the most common diagnosis among younger men who suicide and that depression is the most common diagnosis among older men (Cornwell et al., 1996). The mortality associated with these mental health disorders through suicide or misadventure would have a direct influence upon the decreased rates of depression with age. This mortality effect may have contributed towards the finding of a negative relationship between age and depressive symptoms among gay men in the current study.

The results of the current study are not consistent with the limited research finding that gay men become more suicidal as they age. A study of Australian gay and

heterosexual men aged 18 to 50 years found that age was associated with increased suicidal ideation (Abelson et al., 2006). The results indicated that age had a weak but positive correlation with suicidal ideation, however, results were not reported separately for gay and heterosexual men. The limited sampling frame in that study of only recruiting men up to age 50 prevents an understanding if the relationship between age and suicidal ideation also occurs among older men. In addition, the study used the response to only a single item, "How often do you feel suicidal?" as the key dependent variables measuring 'feeling suicidal'. The use of a single item without any established construct validity, the limited sampling frame, and the failure to distinguish between heterosexual and gay men limits the generalisability of the findings regarding age and suicidal ideation.

Other research has identified age as being associated with suicidal ideation among gay men, lesbians and bisexuals (Ploderl & Fartacek, 2005). This research did not specify the direction of the relationship between age and suicidal ideation, nor did it distinguish between findings for gay men, lesbians and bisexuals. The current finding that there is no relationship between age and suicidal ideation among gay men is inconsistent with the few studies that have examined this relationship.

Population based studies of suicide reveal two distinct peaks in the age of men's suicide. The highest age-specific rate of death by suicide in Australian males is currently in the 30-34 year age group, however it reaches a second peak in the 75+ age group (Australian Bureau of Statistics, 2006). Although the current research investigated suicidal ideation rather than completed suicide, the failure to find a relationship between age and suicidal ideation is broadly consistent with research indicating that suicide does not have a simple linear relationship with age.

4.1.2. Hypothesis 2

The second hypothesis proposed that gay men's sense of belonging to the broader gay community would diminish with age, and that there would be no relationship between age and a sense of belonging to the general community or a sense of belonging to gay groups or with gay friends. This hypothesis was not supported. Results indicated that age was not related to a sense of belonging to the broader gay community. There was a weak positive direct relationship between age and a sense of belonging to the general community, such that a sense of belonging increased with age. As hypothesised, there was no relationship between age and a sense of belonging to gay groups, however there was a weak positive relationship between age and a sense of belonging with gay friends. There are few studies to directly compare these results with as the current study is the first to use a multi-level model of gay communities.

The finding that age is unrelated to a sense of belonging to the broader gay community or to gay groups is inconsistent with accounts of older gay men feeling invalidated and excluded from gay communities. For example, in a review of gay men and lesbians aged 50 or older living in the UK, 52% of the gay men indicated that negative perceptions of their age had made an impact upon their lifestyle, choosing to be less involved due to feeling excluded (Heaphy et al., 2003). This finding is in contrast with the current study, which did not find any relationship between age and a sense of belonging to the broader gay community or to gay groups.

In other research, age was found to be negatively related to social attachment, cultural involvement, and sexual involvement with gay communities (Van de Ven et al., 1997). In that study, age was converted into a categorical variable, such that gay men younger than 50 years were separated into four arbitrary age groups, and all gay men 50 years or older were classed together in one age group. Although there are discrepancies

between the current study and past research in terms of instrumentation, definitions of levels of community, and categorisation of age, the contrast between the results of the Van de Ven et al. study and the current research is striking.

Perhaps the greatest difference between the studies was that the Van de Ven et al. (1997) research investigated frequencies of contact, such as the amount of time spent with gay men and the number of organisations the respondents belonged to. The current study investigated a psychological sense of belonging to three levels of gay community, rather than the actual frequency of contact. It may be that the frequency of contact with gay communities decreases with age, however the results of the current research may suggest that a sense of belonging is sustained despite this decreased contact. There is a need for future research to clarify if sense of belonging remains stable despite decreasing frequency of contact with gay communities as gay men age. It may be that case that as gay men age, the frequency of contact with gay communities decreases, yet a sense of belonging may be sustained through an enhancement of the quality of interactions by emphasising contact with more concrete social entities, such as friends and groups, rather than the gay 'scene'.

Age was found to have a weak positive relationship with a sense of belonging with gay friends, such that increased age was associated with an increased sense of belonging with gay friends. This finding contradicts the Van de Ven et al. (1997) research which found a decreasing linear trend such that the amount of time spent, and the number of gay friends, decreased in each age group. In the current research, there was also a weak positive relationship between age and a sense of belonging to the general community, such that the gay men's sense of belonging to the general community increased with age. The only other study investigating the relationship between age and a sense of belonging to the general community found these variables to be unrelated (Hagerty et al., 1996). In the current study, these weak positive relationships were found with minimal statistical

significance. There is a need for future research to attempt to replicate these findings concerning positive age-related associations with gay men's sense of belonging to the general community and their sense of belonging with gay friends.

4.1.3. Hypothesis 3

The third hypothesis proposed that there would be negative relationships between mental health (depressive symptoms and suicidal ideation) and a sense of belonging to the general community and sense of belonging to each of the three levels of gay community; and that a sense of belonging to the general community would be the strongest predictor of depressive symptoms and suicidal ideation. This hypothesis was supported. A sense of belonging to the general community and a sense of belonging to each of the levels of the gay community were found to be negatively related to depressive symptoms and suicidal ideation. When all four aspects of sense of belonging were considered at the same time in the regression equations, a sense of belonging to the general community was the only aspect of belonging that significantly predicted depressive symptoms and suicidal ideation.

There is only limited research to which these findings can be compared. Recent research using a unitary concept of the gay community, found that gay men's sense of belonging to the gay community and their sense of belonging to the general community were negatively correlated with a measure of their depression (McLaren et al., 2008). The current research had comparable results using a three-level model of the gay community, finding that a sense of belonging to each of the three levels of the gay community and a sense of belonging to the general community were negatively correlated with depressive symptoms and with suicidal ideation.

The findings of the current study are consistent with Woolwine's (2000) sociological conception of gay communities. Woolwine proposed that gay men experience the gay community through the "imagined" gay community, groups and organisations, and

through friendship networks. The results of the current research suggest that there is an inverse relationship between a sense of belonging to each of the three levels of the gay community and gay men's reported depressive symptoms and suicidal ideation.

A sense of belonging to the general community was found to have a negative relationship with depressive symptoms and with suicidal ideation. This is consistent with research finding a sense of belonging to the general community to be related to measures of loneliness, depression, suicidal ideation and suicide attempts (Hagerty et al., 1996). The current finding is also consistent with the body of research finding that sense of belonging is related to depression (Hagerty et al., 1996; Hagerty & Williams, 1999; McLaren et al., 2001; Williams et al., 2002) and greater reasons for living (Kissane & McLaren, 2006). Recent research found gay men's sense of belonging to the general community to be a direct predictor of their depression (McLaren et al., 2008).

When age and all four aspects of sense of belonging were entered into a multiple regression equation predicting depressive symptoms, only age and a sense of belonging to the general community remained significant predictors, accounting for 37% of variance in depressive symptoms. When the procedure was repeated predicting suicidal ideation, only a sense of belonging to the general community and method participation remained significant predictors, accounting for 47% of variance in suicidal ideation. This suggests that when the four aspects of belonging are considered at the same time, a sense of belonging to the three levels of the gay community do not account for any additional variance over a sense of belonging to the general community. Consequently, a sense of belonging to any of the three levels of the gay community affords no additional benefit to a sense of belonging to the general community. This finding is consistent with other research indicating that a sense of belonging to the general community is a stronger predictor of depression than loneliness (Hagerty & Williams, 1999), perceived social support or the

number of stressful life events (Sangon, 2001), participating in physical activity (Bailey & McLaren, 2005) and sexual orientation (McLaren et al., 2007).

The current study provides evidence that gay men's mental health is strongly associated with their sense of belonging to the general community. Although a sense of belonging to all three levels of the gay community had negative relationships with the measures of psychological distress, they did not predict any additional variance when considered at the same time as a sense of belonging to the general community in the regression equations. This result is not consistent with McLaren et al. (2008) who found support for an additive model, such that a sense of belonging to the general community and a sense of belonging to a singular notion of 'the gay community' independently predicted depressive symptoms. There were a number of key differences between these studies, including the model of the gay community used, and the instruments to measure a sense of belonging to the gay community and to measure depressive symptoms.

Perhaps the key finding is that gay men's sense of belonging to the general community is a more important predictor of gay men's psychological distress than is their sense of belonging to gay communities. Analysis of the semi-partial correlation coefficients revealed that 20% of variance in depressive symptoms and 31% of variance in suicidal ideation was uniquely associated with a sense of belonging to the general community. This suggests that attitudes, policies and discourse within the general community regarding homosexuality are likely to be associated with the psychological distress experienced by gay men. Past research has found that the extent of gay men's lifetime and day-to-day experiences of homophobia are associated with their mental health, psychological distress (Mays & Cochran, 2001) and workplace satisfaction (Ragins, et al., 2007). The nature of these correlational studies, including the current research, cannot establish a casual relationship between sense of belonging and

psychological distress, however they do support the longstanding belief within psychology that belonging is a foundational human need, and an essential requirement for a positive sense of self to develop (Maslow, 1943). The current findings are consistent with Maslow's theory to the extent that negative attitudes towards homosexuality within the general community may disrupt the pre-potent needs of safety and security, and consequently impacts upon the development of positive mental health among gay men.

Finally, strong correlations can be observed between the three measures of a sense of belonging to the gay community. There were moderate and strong correlations between a sense of belonging to the general community and the three measures of a sense of belonging to the gay community. Although the assumption testing did not detect multicollinearity among the variables, the degree of multicollinearity among the four aspects of belonging may have had some influence upon the two multiple regression analyses used to test this Aim. Although the presence of multicollinearity does not reduce the predictive power or reliability of the model as a whole, it does affect the interpretation of individual predictors. Some degree of multicollinearity among the four sense of belonging variables is inevitable as the four variables are measuring four different aspects of the same phenomenon (sense of belonging). For the purposes of this study, it was decided to accept the limitation of the correlations among the predictors. The preferred solution would have been to obtain a larger sample size to reduce any adverse effects of multicollinearity and achieve a more accurate estimate of the individual parameters.

4.1.4. Summary of Aim 1

The results with respect to this aim are consistent with past research identifying negative relationships between depressive symptoms and a sense of belonging to the general and gay communities. The study extends upon past research by finding that a sense of belonging to the general community and to gay communities are also negatively related

to gay men's suicidal ideation. Despite the accounts of older gay men feeling excluded from aspects of gay communities in some research, age had a weak or insignificant relationship with a sense of belonging to all three levels of the gay community. The findings are consistent with past research identifying a sense of belonging to the general community as an important predictor of depressive symptoms. Among the four aspects of a sense of belonging, a sense of belonging to the general community was found to be the strongest predictor of reductions in gay men's psychological distress.

4.2. Aim 2

Results and hypotheses are briefly discussed for the first three hypotheses in this aim predicting direct relationships, and then are discussed in detail for the fourth hypothesis predicting the indirect relationships explained by the models.

4.2.1. Hypothesis 1

The first hypothesis proposed that in the prediction of depressive symptoms and suicidal ideation, age would be directly related to a sense of belonging to each level of the gay community. This hypothesis was not supported. Path analysis revealed that the inclusion of age in the models resulted in poor model fit, as age was unrelated to a sense of belonging to the three levels of the gay community. Results suggest that in the prediction of psychological distress, gay men's age is not related to their sense of belonging to any of the three levels of the gay community.

4.2.2. Hypothesis 2

The second hypothesis proposed that in the prediction of depressive symptoms and suicidal ideation, a sense of belonging to each of the three levels of the gay community would be directly related to a sense of belonging to the general community. This hypothesis was partially supported. In the prediction of depressive symptoms and suicidal

ideation, path models revealed that a sense of belonging to gay groups and a sense of belonging with gay friends were directly related to a sense of belonging to the general community. This finding is consistent with research revealing evidence for a relationship between a sense of belonging to a singular concept of 'the gay community' and a sense of belonging to the general community (McLaren et al., 2008).

4.2.3. Hypothesis 3

The third hypothesis predicted that a sense of belonging to the general community would directly predict mental health. This hypothesis was supported. Using path models, the current study found evidence for a direct relationship between a sense of belonging to the general community and depressive symptoms, and between a sense of belonging to the general community and suicidal ideation. This finding is consistent with the body of research into the relationships between sense of belonging and depression (Hagerty et al., 1996; Hagerty & Williams, 1999; McLaren et al., 2001; Williams et al., 2002) and greater reasons for living (Kissane & McLaren, 2006).

4.2.4. Hypothesis 4

The fourth hypothesis predicted that there would be a significant indirect effect of age on depressive symptoms and on suicidal ideation, via a sense of belonging to the three levels of the gay community and a sense of belonging to the general community. This hypothesis was not supported. The use of path models in the current study to test the interrelations between age, sense of belonging and mental health was exploratory, therefore a series of path models were subsequently compared. The revised models, in which age was removed, resulted in good model fit, as indicated by all of the fit indices. Results indicated there were significant indirect relationships from a sense of belonging to gay groups and with gay friends to mental health, via a sense of belonging to the general community.

The support for the revised models suggest that regardless of a gay man's age, an increased sense of belonging to gay groups and with gay friends is associated with an increased sense of belonging to the general community, and in turn, an increased sense of belonging to the general community is associated with less depressive symptoms and suicidal ideation. Results indicate that a sense of belonging to the general community mediated the relation between a sense of belonging to gay groups and with friends and mental health (depressive symptoms and suicidal ideation).

These current findings are inconsistent with the stereotype of older gay men being isolated and disconnected from gay communities (Berger, 1996). Past research has suggested that a gay man's age impacts upon his lifestyle, to the extent that older gay men feel excluded from gay communities and consciously choose to be less involved to avoid negative attention (Heaphy et al., 2003). Other research has found age to be associated with decreasing social, cultural and sexual involvement with gay communities (Van de Ven et al., 1997). Although the current study examined sense of belonging to three levels of the gay community rather than the frequency of involvement, the results of the current study are not consistent with portrayals of older gay men feeling excluded from gay communities. In the current study, there was no significant direct path between age and a sense of belonging to any of the three levels of the gay community. In particular, a sense of belonging to the broader gay community was unrelated to age, which is the level of the gay community most likely to be associated with stereotypical images of gay men and negative cultural perceptions of gay male ageing. This may suggest that even if ageism exists within gay communities, it does not necessarily translate into a diminished sense of belonging that is associated with gay men's level of psychological distress.

The results of the current study support the alternate view that gay men remain socially connected and actively involved within gay communities as they age (Shippy et

al., 2004). Again, the current study did not examine frequency of involvement with gay communities, however the finding that age is unrelated to a sense of belonging to gay communities is consistent with research finding that older gay men are equally likely to spend time with other gay men as are middle aged and younger gay men (Gray & Dressel, 1985).

Gay and Dressel (1985) suggest that involvement within gay communities is related to sub-cultural socialisation rather than ageing. It was found that older gay men with greater sub-cultural socialisation within gay culture had stronger internalisation of negative ideas about ageing. However, despite this internalisation of ageist ideas, the older gay men with greater sub-cultural socialisation were more likely to spend time with other gay men only. The researchers suggest that older gay men with a longer history of being sexually active were more likely to have developed extensive social networks within gay communities. It is possible that with greater sub-cultural socialisation within gay communities as gay men age, there is a shift of focus towards more concrete social entities such as friends and groups, and away from more abstract notions of the broader gay community. Consequently, a sense of belonging may be maintained as gay men age, by a shift in the focus of involvement within gay communities.

The results of the current study indicate that a sense of belonging to the general community mediated the relation between a sense of belonging to gay groups and with friends, and mental health. Little is currently known about the mediating relationship by which a sense of belonging to these specific levels of the gay community are associated with a sense of belonging to the general community. It is likely that gay communities function as a basis for common identity among gay men (Howarth, 2001). Through gay communities, gay men may experience others who are 'like oneself' and experience a positive sense of identity at a group level (Meyer, 2003; Woolwine, 2000). The results of

the current research suggest that in the prediction of mental health, a sense of belonging to gay groups and with gay friends are most closely associated with a sense of belonging to the general community.

Woolwine (2000) suggests that face-to-face meeting through gay groups has the potential to bring about deep emotional identification with the organisation and with the other gay people in the group. By participating in gay groups, identity is developed beyond the individualistic level. An identity that includes a sense of belonging to gay groups may have the potential to generalise outside of gay community. It may be the case that the collective sense of identity through a sense of belonging to gay groups and with gay friends functions to bridge a connection between gay and mainstream communities, and consequently enhances a sense of belonging to the general community. The evidence for the indirect relationship between a sense of belonging to gay groups and with gay friends, and mental health, appear to be related to the role of these aspects of gay community enhancing a sense of belonging to the general community.

The support for the path model in the current research is consistent with research finding that a sense of belonging to the general community partially mediates the relation between a sense of belonging to 'the gay community' and depression (McLaren et al., 2008). The results of the current study replicated this finding for the prediction of depressive symptoms using a path model to find evidence of a mediating relationship. The current study extended this research by also finding evidence that a sense of belonging to the general community mediates the relation between a sense of belonging to the gay community (groups and friends) and suicidal ideation.

There are a number of methodological differences between the current study and this recent research. The McLaren et al. (2008) study used a modified version of the Sense of Belonging Instrument (Hagerty & Patusky, 1995) to measure a sense of belonging to

gay community. The McLaren et al. (2008) instrument contained a series of broad questions about feeling valued, needed and accepted within a singular notion of ‘the gay community’. Recent research indicates there are vast differences among gay men in their perceptions of the expression ‘the gay community’ (LeBeau & Jellison, 2009). It is likely that the methodology in the McLaren et al. study elicited participants’ combined sense of belonging to all three levels of the gay community. Consequently, a sense of belonging to each of the three levels of the gay community was unable to be determined from the McLaren et al. study.

The evidence for partial mediation in the McLaren et al. (2008) study is consistent with the current study which distinguished the significant paths among the three levels of the gay community. The current finding adds further detail to the finding of the McLaren et al. study by clarifying that a sense of belonging to the broader gay community does not contribute to a sense of belonging to the general community. It is only a sense of belonging to gay groups and with gay friends that contribute to a sense of belonging to the general community, which is, in turn, directly related to mental health.

4.2.5. Summary of Aim 2

Path analyses revealed that in the prediction of depressive symptoms and suicidal ideation, age is unrelated to gay men’s sense of belonging to each of the three levels of the gay community. This finding is inconsistent with stereotypical portrayals of older gay men being disconnected from gay communities. Mediating relationships were revealed such that a greater sense of belonging to gay groups and with gay friends were associated with a greater sense of belonging to the general community, which in turn was associated with less depressive symptoms and suicidal ideation. A sense of belonging to the broader gay community was not associated with gay men’s sense of belonging with the general community, and consequently was unrelated to their mental health.

4.3. Aim 3

4.3.1. Hypothesis 1

The first hypothesis proposed that age and each of the four aspects of sense of belonging would be independently related to depressive symptoms and to suicidal ideation. This hypothesis was partially supported. Age and each aspect of sense of belonging independently predicted depressive symptoms, therefore all four additive models were supported. In the prediction of suicidal ideation, none of the additive models were supported, as age did not independently contribute to the prediction of suicidal ideation beyond that predicted by each aspect of a sense of belonging.

The support for the additive models predicting depression revealed that in each of the four models, the aspect of a sense of belonging independently contributed to the prediction of depressive symptoms, beyond that predicted by age. The finding regarding the contribution of a sense of belonging is consistent with a broad range of research establishing the relationship between a sense of belonging to the general community and depression (Hagerty & Williams, 1999; Hagerty et al., 1996; McLaren et al., 2001; Williams et al., 2002). The finding that in each model, a sense of belonging to each level of the gay community was independently related to depression is consistent with research using a singular model of the gay community (McLaren et al., 2008). The McLaren et al. research supported an additive model that a sense of belonging to ‘the gay community’ and a sense of belonging to the general community independently contributed to the prediction of depressive symptoms. The finding regarding the contribution of age in each of the additive models is consistent with age-related trends revealed in men’s mental health research, such that rates of depression decreases with age (Australian Bureau of Statistics, 1997; Goldberg et al., 2003; Weissman et al., 1988). The current study extends upon past research by revealing that in each additive model, age and a sense of belonging (to the

general community and to each of the three levels of the gay community) independently predict gay men's depressive symptoms.

In each of the additive models predicting suicidal ideation, only the aspect of sense of belonging and method of participation significantly predicted suicidal ideation. The failure to support any of the additive models predicting of suicidal ideation highlights the complex relationship between age and suicidal ideation. Research investigating age related-trends in Australian men's suicide suggest that there is not a simple linear relationship between age and the rate of men's suicide (Australian Bureau of Statistics, 2006). The additive models in the current study were unlikely to have to been supported given the insignificant correlation between age and suicidal ideation. The failure to support the additive models is not consistent with a single study identifying older age as a risk factor for increased suicidal ideation among gay and bisexual men aged up to 50 years (Abelson et al., 2006). The results of the current study reveal that age does not independently contribute to the prediction of suicidal ideation.

4.3.2. Hypothesis 2

The second hypothesis proposed that in the prediction of depressive symptoms and suicidal ideation, age would moderate the sense of belonging to the broader gay community-mental health relation, but age would not moderate the sense of belonging-mental health relation for a sense of belonging to the general community, gay groups or gay with friends. This hypothesis was not supported. Results did not support a moderation model predicting that age would interact with a sense of belonging to the broader gay community in the prediction of depressive symptom and suicidal ideation. In addition, age did not moderate the sense of belonging-mental health relation for a sense of belonging to gay groups or with gay friends.

Support was found for one moderation model predicting suicidal ideation, such that age moderated the relation between sense of belonging to the general community and suicidal ideation. Results indicate that a sense of belonging to the general community is associated with suicidal ideation for all gay men of all ages, however the strength of this relationship was greater for the younger gay men. Although the moderation effect was significant, the interaction term only explained an additional 2% of variance in suicidal ideation, therefore only tentative interpretations of this result are offered.

It is possible that generational cohort effects may have contributed to this finding. Unlike younger gay men, older gay men lived through the evolution of the gay rights movement. During the key developmental periods of their childhood, adolescence and early adulthood, their sexual desires were considered signs of being mentally ill, and their sexual acts were disallowed by legislation (D'Augelli et al., 2001). From a biopsychosocial perspective, these early experiences are likely to be associated with the development of psychological strengths and vulnerabilities. One possibility is that developing through this era may be associated with the development of schematic representations or mental structures relating to the role of gay men within society. Consequently, this generation of older gay men's sense of self and their relationship to the community may have adapted to this homophobic social climate, by developing limited expectations of being accepted as a gay man within the general community. To this extent, gay men of this era's sense of belonging to the general community may have a reduced relationship with their suicidal ideation due to the development of schemas which include a reduced expectation of belonging to the general community.

In contrast, younger gay men have developed through an era of evolving gay rights and a growing number of public figures who have openly identified as being gay male. Despite the evidence of homophobia that currently exists, it is possible that this younger

cohort of gay men may have developed schemas that include a greater acceptance of gay men within society, and as a result may have developed an enhanced expectation of belonging to the general community. This generation would be among the first to experience more positive portrayals of gay men and the gradual integration of gay men within mainstream society. Consequently, younger gay men may have developed a greater expectation of belonging to the general community, and thus benefit from a greater protective factor from a sense of belonging to the general community.

Qualitative research would provide valuable insight into this interpretation of the findings. It could investigate gay men's schematic representations of the role of gay men in society when they were young, and their expectations of belonging to the general community. This could include open-ended questions seeking specific examples of memories relating to the role of gay men in society, their own expectations of fitting in, and conflict or hostility related to their emerging sexual orientation. It could also seek their expectations when young of meeting cultural milestones such as marrying an opposite-sex partner and having children. It is likely there would be a strong degree of retrospective bias in this type of study, however the emerging themes could be used for subsequent quantitative research. Such research could explore the relationship between gay men's schematic representations of gay men when young, expectations of belonging when young, their adult sense of belonging to the general community, and their adult suicidal ideation. This type of research could examine the risk factors of negative schematic representations and expectations of belonging when younger, and the protective value of gay men's adult sense of belonging to the general community, in the prediction of their suicidal ideation.

4.3.3. Summary of Aim 3

Consistent with past mental health research examining age and sense of belonging, older age and a stronger sense of belonging to each of the four aspects of belonging were

independently related to fewer depressive symptoms among gay men. Age was not independently related to suicidal ideation, however a stronger sense of belonging to each of the four aspects of belonging was associated with less suicidal ideation. Age moderated the strength of the relationship between sense of belonging to the general community and suicidal ideation, such that the strength of this relationship was greater for younger gay men. It is suggested that a generational cohort effect may partially account for this interaction between sense of belonging and age in the prediction of suicidal ideation.

4.4. General Discussion

A range of analyses revealed relationships between age, sense of belonging and mental health among gay men. A key finding of the study is that a sense of belonging to the general community is the most influential aspect of belonging in the prediction of gay men's mental health. This suggests that the extent to which gay men feel valued and needed and that they fit in within the general community is strongly associated with their mental health. Sexual prejudice is consequently more than a moral issue; it is likely to also be a mental health issue due to the detrimental impact of homophobia upon gay men's sense of belonging to the general community.

The findings of the current research are consistent with research indicating that gay men's experiences of discrimination and homophobia are associated with their current psychological distress and degree of psychopathology (Mays & Cochran, 2001). The evidence for an association between a sense of belonging to the general community and suicidal ideation that was revealed adds weight to past research findings that the frequency of sexual prejudice experienced is associated with an increased likelihood of current suicidal ideation (Huebner et al., 2004). In light of the current findings, homophobia within environments such as the workplace is likely to not only impact upon job

performance (Ragins et al., 2007), but to also to impact upon the mental health of employees due to the diminished sense of belonging that results. Efforts to eliminate the sexual prejudice experienced by gay men are likely to reduce the burden of mental health problems among this population.

Another key finding pertains to the indirect mental health benefits of a sense of belonging to specific levels of gay community. Although a sense of belonging to each of the three levels of the gay community were directly related to depressive symptoms and suicidal ideation, they did not account for any additional variance beyond a sense of belonging to the general community in the regression analyses. The path models further clarified that only a sense of belonging to gay groups and with gay friends are associated with a sense of belonging to the general community, which in turn was directly related to mental health. The current research provides evidence that a sense of belonging to two specific levels of the gay community has an important indirect relationship with mental health due to its association with a sense of belonging to the general community.

In addition, the additive models revealed that age and a sense of belonging to each of the three levels of the gay community independently contribute to the prediction of depressive symptoms, however their interaction is not significant. This is consistent with the failure to support the hypothesised path model which examined whether age was associated with a sense of belonging to each of the three levels of the gay community. The correlational nature of this study cannot prove causation, however despite the accounts of ageism within gay communities, it appears that any relationship between gay men's sense of belonging to gay communities and their depressive symptoms is not related to their age. The negative relationship between age and gay men's depressive symptoms may be indicative of the findings of epidemiological research, finding older men in general to be less depressed than younger men (Goldberg et al., 2003; Weissman et al., 1988).

4.5. Implications of the Current Research

A key finding is that gay men's sense of belonging to the general community is a stronger predictor of their mental health than is their sense of belonging to each of the three levels of the gay community. This has implications for our understanding about the roles of the general community and gay communities in gay men's well being. In light of the current findings, interventions aimed to directly improve the overall mental health of gay men should focus upon enhancing their sense of belonging to the general community.

The development of more accepting and inclusive attitudes towards gay men within the general community is likely to result in an enhanced sense of belonging. This improvement in a sense of belonging to the general community is likely to be associated with a reduction in the currently elevated rate of psychopathology among gay men (Cochran & Mays, 2000b; Cochran et al., 2003; Fergusson et al., 1999; Herrell et al., 1999). Efforts to enhance a sense of belonging to the general community could be made through legal reform, such as formal recognition of same-sex marriage and legislating equal rights for adoption. Cultural reform could be enhanced by non-stereotypical portrayals of gay men in television, film and other media. Such changes are likely to result in an enhancement of gay men's sense of belonging to the general community and consequently an improvement in their mental health.

There are further benefits to be gained by educating gay men about the value of enhancing their sense of belonging to the general community. The results of the current study indicate that a sense of belonging to gay communities is not the most direct path to gay men's mental health. It is likely that many gay men are unaware of the direct mental health benefits of enhancing their sense of belonging to the general community. Specifically, the current research indicates that a greater sense of belonging to the general community is associated with less suicidal ideation for all gay men, although the strength

of the relationship is stronger for younger gay men than for older gay men. Despite the current barriers that exist, mental health promotion should encourage gay men to value and to seek a sense of belonging within the general community. Opportunities to enhance gay men's sense of belonging to the general community may be achieved through developing relational bonds associated with shared interests and activities, such as through recreation, hobby groups and volunteer organisations.

Enhancing gay men's sense of belonging to the general community is likely to be of benefit not only to self-identified gay men, but also of benefit to men who do not disclose or act upon their sexual orientation. With an increased acceptance of gay men within the general community, men may be more likely to perceive a less hostile environment in which they could explore their sexual orientation. It is likely that men questioning their sexual orientation would experience substantially less intra-psychic conflict if they perceived that they could self-identify as a gay man, and remain a valued and accepted member of society. In a culture with greater acceptance of same-sex attraction, community development work could assist men to explore their sexual identity in a safe and non-judgemental environment. This could involve establishing groups for like-minded men who struggle with their sexual identity and are seeking greater acceptance.

In addition to a sense of belonging to the general community, the path models highlight the indirect benefits for gay men of a sense of belonging to gay groups and with gay friends. When working clinically with gay men in psychological distress, the results indicate that it is not beneficial for mental health professionals to simply direct gay men towards the broader gay community for support. It is possible that merely encouraging these vulnerable men to participate in the broader gay community through the gay 'scene', or to attend a large gay and lesbian festival or event, may result in an even greater sense

of alienation and disconnection. Gay men of all ages are likely to benefit from developing a sense of belonging to gay groups and with gay friends. Results of this study suggest that when gay men are able to experience increased levels of belonging to gay groups and with gay friends they are also likely to experience enhanced levels of belonging to the general community, and, in turn, report fewer depressive symptoms and less suicidal ideation.

Interventions to enhance a sense of belonging to gay groups may be more practical when working with younger gay men due to the tendency for younger gay men to live in metropolitan urban environments (Shankle et al., 2003). The tendency for older gay men to move away from urban gay centres may limit the availability local interests groups for gay men (Van de Ven et al., 1997). Despite the geographic limitations on the diversity of available groups, many regional centres within Australia have begun to spawn groups catering to the needs of local gay men. The current findings challenge the 'black sheep theory' suggesting that older gay men are maligned and feeling alienated from gay communities (Hajek & Giles, 2002). The results of the current study suggest that the indirect mental health benefits of a sense of belonging to gay groups are not related to age, therefore it should not be assumed that a gay man's age will be a barrier to establishing a sense of belonging within a gay group. This may be particularly relevant in regional areas with a limited range of local gay groups available to engage with.

When working with gay men in psychological distress, the results of the current study may provide an insight into productive areas of exploration during psychological individual work. The biopsychosocial model suggests that current psychological distress is an interplay between biology, individual psychological differences and the social context (Sperry, 2008). When working with a gay man experiencing recurrent depressive symptoms, including suicidal ideation, it may be beneficial to explore both his current sense of belonging and relevant childhood antecedents.

For gay men in particular, it is possible that the internalisation of early experiences relating to experiences of criticism or rejection may have been activated by their current social context. Recurrent depressive symptoms may be related to the re-experiencing of a critical and rejecting pattern established in early relationships due to their emerging sexual orientation. It is possible that a gay man's presentation with a depressive illness may be due to an activation of longstanding beliefs, such as that they do not fit in and they are not wanted. The activation of these beliefs may result in a recurrent dysthymic mood, low self-worth and possibly suicidal ideation. Therapeutic work to develop insight and challenge these beliefs is consistent with a range of contemporary cognitive therapies (Beck, 1995; Ryle & Kerr, 2002; Young et al., 2003). In such cases, enhancing a sense of belonging may not be possible until longstanding beliefs become known and are actively challenged and modified.

Longstanding experiences of homophobia and minority stress are adversely associated with gay men's mental health (Huebner et al., 2004; Mays & Cochran, 2001; Meyer, 1995), and are likely to be associated with the capacity to develop a sense of belonging to the general community. For example, research suggests that employees who have experienced sexual-orientation discrimination at work are more likely to be fearful and to limit the disclosure of their sexual orientation (Ragins et al., 2007). Consequently, longstanding experiences of homophobia and minority stress may be significant barriers for some gay men to benefit from engaging with the general community. Mental health interventions for these gay men may require facilitating therapeutic groups that adopt a narrative approach to accept and validate their experiences. This may include not directly challenging beliefs of group members that they have never belonged within society. The aim would be for the group to develop shared social representations that become a basis for a common identity (Howarth, 2001). Such an approach may allow participants to

develop a sense of community and belonging within the group. The results of the current research suggest that developing a sense of belonging to such a gay group is likely to be associated with an enhanced sense of belonging to the general community, and consequently an improvement to mental health.

4.6. Limitations of the Research

The results and implications of this study need to be considered in light of some of the study's limitations. The current study is unable to determine issues of causality due to its correlational design. Although evidence was found for a number of relationships between gay men's age, sense of belonging and mental health, claims about the causality of these variables cannot be made. For example, the negative relationship between age and depressive symptoms identified in the current study may be associated with a mortality effect, such that gay men with severe depression may die at a younger age due to factors such as suicide or substance abuse. In addition, it has been argued that a sense of belonging directly influences mental health, however it is possible that mental health problems cause a diminished sense of belonging to the general community and to gay communities. These issues are unable to be resolved in a correlational design.

In addition, age was chosen as the moderator of the relation between sense of belonging and mental health in the current study. It could equally be the case that sense of belonging moderates the relation between age and mental health. The decision to make age the moderator was due to the theoretical focus of the third aim and the strong empirical relationship between sense of belonging and mental health. It is conceivable that with a different theoretical focus, sense of belonging may have been chosen as the moderator, resulting in a different interpretation of the significant moderation effect predicting suicidal ideation (Frazier et al., 2004).

By finding evidence for the relationships between age, sense of belonging and mental health in this research, only a first step is taken towards demonstrating causation. Longitudinal studies would allow the sequence between these variables to be determined, including whether a diminished sense of belonging precipitates the emergence of depressive symptoms and suicidal ideation or vice versa. Due to sense of belonging and mental health being measured at one point in time, the current study is unable to determine if sense of belonging is a stable trait, or if it varies as a direct reflection of the participant's current mood state. It has been suggested that a poor sense of belonging is, in part, related to the development of maladaptive schemas, with childhood antecedents. Consequently, some degree of stability in a sense of belonging is possible, and some variability is likely dependent upon the current social context.

In addition, it is possible that common method variance when using self-report measures of sense of belonging and mental health also introduces a rival explanation for the correlation between the constructs. Greater reliability may be achieved by using clinician-rated measures of mental health and measuring a sense of belonging and mental health at more than one point in time for each participant.

The sole use of self-report measures is a methodological issue of concern. Participants were not clinically assessed for the presence of depression and suicidal ideation. Current mental health was inferred from the administration of established screening tools for depressive symptoms and suicidal ideation. In addition, the measure of depressive symptoms that was used (CES-D, Radloff, 1977) is a screening instrument for depression, rather than an instrument used to diagnose depressive disorders.

There is currently no established instrument to measure a sense of belonging to the three levels of the gay community, therefore a visual analogue instrument was developed. To determine if a sense of belonging can be measured using this methodology, a sense of

belonging to the general community was measured on a visual analogue scale and was compared to the 18-item SOBI-P instrument (Hagerty & Patusky, 1995). Based upon Cohen's (1988) guidelines, this revealed a highly significant, strong positive correlation of 0.67 between the two instruments. Although this provides some evidence for the practice of measuring a sense of belonging using a visual analogue scale, there remains considerable variation between the two methodologies. Consequently, the use of a visual analogue scale to measure a sense of belonging to the three levels of the gay community should be interpreted with caution. Although this is the first such instrument to be developed, it is possible there are more valid methods for measuring a sense of belonging to gay communities. The results of the current study are limited by the need to establish the reliability and validity of this visual analogue instrument to measure a sense of belonging to gay communities.

The reliance upon self-report instruments inevitably introduces an expressive component to the participants' description of their mental state. Their public description directed towards researchers in an anonymous questionnaire may not match their more intimate description revealed in a clinical setting. A further limitation is that demographic section of the questionnaire asked participants to declare only their nationality, not their ethnicity. It is possible that in a multi-cultural society such as Australia, ethnic differences may impact upon a sense of belonging to the general and gay communities. For example, the sense of belonging experienced by an Asian or Muslim Australian gay male may be vastly different to those of an Anglo-Saxon gay male. This omission limits the generalisability of the results.

The reliance upon psychometric testing in the current research prevents an understanding of how participants were defining notions of community and belonging. Although the gay community was specified at three distinct levels (broader, groups and

friends) it is likely that participants made their own interpretation of these aspects of belonging. For example, when asked about their sense of belonging to 'the gay community in general' this may have elicited thoughts of a global or national level, however others may have referenced their sense of belonging to the gay 'scene'. Such variations in interpretation may have impacted upon the validity of the visual analogue instruments measuring a sense of belonging to gay communities. Such discrepancies may have been partially resolved by providing a more in-depth description of each layer of the gay community, or asking participants to provide specific examples of their involvement.

The exact response rate for the study is unable to be determined due to the mixed design of paper and internet methodologies. Among the paper questionnaires distributed, the response rate of 30% is very low. The participants who elected to complete and submit the questionnaire may vary considerably from those who took a questionnaire but did not submit it. The nature of recruiting at social events such as festivals and parties is likely to have contributed to the low response rate. In addition, attendance at an event may also be related to the mood state of participants when completing the questionnaires. Findings of the current study should be interpreted with consideration of these limitations.

This study utilised a non-random selection of participants through a range of recruitment strategies. Consequently the sample reflects only the experiences of the gay men electing to participate in the study. It is to be noted, however, that conducting research on minority populations inevitably results in sampling issues (Sullivan & Losberg, 2003). To obtain a sample size large enough to conduct statistical analyses, convenience sampling is commonly required through in-person or online methods. Due to the recruitment methods utilised, the gay men who came into contact with this research are more likely to have some degree of existing involvement with a level of the gay community. A diverse range of recruitment strategies were employed to attempt to minimise this effect, however,

inevitably the sample is likely to be biased towards gay men with an existing degree of connection with gay community.

The analysis testing for differences by method of participation revealed significant differences in responses between the paper and online versions, consequently such effects were controlled for when testing direct, additive and moderation models. The participants completing the paper versions were predominately recruited in-person at events held for gay men, and generally indicated a greater sense of belonging to the three levels of the gay community. This finding further reinforces the need for a diverse range of recruitment strategies when studying gay men's sense of belonging and mental health. The sole use of convenience sampling by recruiting only at events held for gay men are likely to over-represent the experiences of gay men with an active participation and sense of belonging to at least one level of the gay community.

The recruitment of older gay men for research is further complicated by the scarcity of existing services for older gay men. The experiences of the most isolated older gay men, who live outside metropolitan areas, and who have no current involvement with any aspect of the gay community, are unlikely to have been captured in this study. There are no established networks or practices within Australia to identify and engage these older gay men in research. Extensive snowball sampling or qualitative methods may offer the best approach to research the experiences of older gay men who are isolated and disconnected from identifiable aspects of the gay community.

Use of the Internet was not investigated in the current study as a source of a sense of belonging for gay men. In the current study, the Internet-based questionnaire was used by over half the participants, despite the diverse range of face-to-face recruitment strategies that were employed. The Internet is likely to be an important medium for communication between gay men. The anonymity and lack of geographical boundaries

associated with the Internet may provide a unique source of belonging for gay men. The sense of belonging this provides may be in addition to a sense of belonging to the broader gay community, gay groups or with gay friends. A sense of belonging to internet-based communities may be an additional level of the gay community beyond the three-level model proposed by Woolwine (2000).

However, the expanding use of the Internet may produce its own barriers to achieving a sense of belonging. The evidence for strong age-based preferences for partner selection within newspaper advertisements (Hayes, 1995; Kenrick et al., 1995) is also likely to be occurring within Internet forums for meeting other gay men. This may serve to further reinforce ageism within gay communities. In addition, the increasing use of the Internet may serve to further alienate gay men of all ages. The developing reliance upon the Internet for social networking may ultimately have a negative impact upon face-to-face contact with other gay men. The current study revealed that participants who completed the online questionnaire tended to have a lower sense of belonging to each of the three levels of gay community. In addition, when controlling for method of participation in the moderation models, it was revealed that 4% of variance in suicidal ideation was accounted for by method of participation, such that online participation was associated with increased suicidal ideation. Beyond the relatively superficial contact through the Internet, it is through direct contact with other gay men that an enduring sense of belonging and associated mental health benefits are most likely to be established and maintained.

The complexities of the nomothetic versus idiographic approaches to research are highlighted in the current research. A nomothetic approach was used in the current study to reveal broad trends in the relationship between gay men's age, sense of belonging and mental health. Whilst this allowed a statistical relationship between these variables to be explored, it is not clear if the generalisations drawn from the data are relevant on an

idiographic level, such as in clinical practice. It is likely that both individual differences and life experiences also contribute to gay men's mental health. For example, a gay man with unpleasant experiences within gay groups in the past may maintain positive mental health by avoiding future contact with gay groups. Encouraging such a gay man with negative expectations to join gay groups may result in a further diminished sense of belonging to the general community due to confirming an expectation that he does not belong anywhere. In such an example, generalisations drawn from psychometric data may result in unhelpful interventions in the clinical setting.

The current study conducted a relatively large number of statistical tests on a single sample of Australian gay men. An alpha level of .05 was used for statistical significance throughout, however significant results exceeding an alpha level of .01 or .001 were found in 85% of the tests conducted. It is acknowledged that the relatively large number of statistical tests increases the probability of type 1 errors. This risk of this statistical error may have been further minimised by consistently applying a more stringent alpha level of 0.01, or using split half techniques in the statistical analysis.

4.7. Recommendations for Future Research

There is a need for further research into the relationship between age and gay men's mental health. This initial study, on a relatively small non-clinical sample, revealed few associations between age and the relationship between a sense of belonging and mental health among gay men. Future research should investigate these relationships in non-clinical and clinical samples of gay men of all ages, including those with depression, anxiety and substance abuse disorders. It would also be beneficial to track the relationship between sense of belonging and mental health over time to identify if a sense of belonging to the general and gay communities are stable as gay men age. A longitudinal design

would also determine if a diminished sense of belonging precedes the emergence of clinical symptoms, or if, in fact, it is the result of poor mental health. This would allow a more detailed understanding of the relationship between age, sense of belonging and gay men's mental health.

Despite the growing body of research establishing the relationship between a sense of belonging and mental health, there is no research into the efficacy of interventions to enhance a sense of belonging. The results of the current study suggest that enhancing gay men's sense of belonging to the general community is most likely to be directly associated with their mental health, and indirectly associated with gay men's sense of belonging to gay groups and with gay friends. Future research should conduct a randomised-controlled trial on a clinical sample of gay men to investigate the mental-health effect of enhancing their sense of belonging. This design could include a treatment as usual for depression (e.g., CBT) compared with treatment as usual plus participation in an interest group (e.g., an interest in theatre or cinema). Mental health could be clinically assessed in addition to the use of self-report instruments. The change in sense of belonging to the general community and to gay communities could be measured and understood in terms of the subsequent improvement in mental health. A more complex design could also investigate age-related effects and the benefits of cross-generational versus age-specific interest groups.

Future research should investigate the relationship between a sense of belonging, maladaptive schemas and mental health. Although they are theoretically related constructs, the relationship between these variables has not been investigated. It is possible that a sense of belonging and maladaptive schemas are established early in life, and simply manifest themselves as stress induced mood disorders. Alternatively, a sense of belonging and maladaptive schemas may be more fluid, and fluctuate throughout the lifetime under

varying circumstances. Parent-child relationship patterns should also be investigated as they relate to sense of belonging and maladaptive schemas as adults. This research would indicate if sense of belonging and maladaptive schemas are stable and linked to childhood antecedents, or if they are a reflection of current social context and mood state. This would allow a greater understanding of whether a sense of belonging is malleable and can be directly influenced by interventions to enhance it.

There is a need for qualitative research to better understand gay men's sense of belonging. It is important to have a greater understanding of how gay men relate to the concept of belonging. This research could also include an exploration of experiences of belonging and conversely experiences of rejection and alienation. It would be valuable to conduct an in-depth exploration of the perceived benefits of belonging and the strategies used to cope with adversity. This research may reveal that being a gay man is associated with expectations and experiences of belonging across a range of contexts including family, friendships, the workplace and community life. The results of this qualitative research would provide a better understanding of how to better engage gay men when discussing and researching notions of belonging.

Psychological and gerontological research investigating older gay men's experiences are impeded by barriers to reaching this typically invisible population. In the future, the Internet may provide an important portal to reach older gay men. Future research would benefit from using Internet-based recruitment strategies such as advertising on popular websites used by gay men or recruiting through social networking websites such as Facebook. The research could concurrently investigate the relative importance of the Internet for gay men in achieving a sense of belonging, and better understand how this relates to their mental health. This proposed research is limited by the usage of the Internet

by older people. However, as computer literacy continues to grow, the Internet will become an increasingly important area of research into older gay men's mental health.

4.8. Conclusion

This study reveals that for gay men of all ages, a sense of belonging to the general community is a stronger predictor of psychological distress than is a sense of belonging to gay communities. A sense of belonging to the general community is a direct predictor of gay men's depressive symptoms and their suicidal ideation, whereas a sense of belonging to gay groups and with gay friends is indirectly related to gay men's mental health due to the association with a sense of belonging to the general community. There was little evidence that gay men's age is related to their sense of belonging to gay communities. Results challenge the stereotyped perception that older gay men are disconnected from gay communities and, as a result, experience associated mental health problems. Interventions aimed at increasing sense of belonging to the general community are likely to have direct benefits for the mental health of gay men, whereas interventions aimed at increasing sense of belonging to gay groups and with gay friends are likely to have indirect benefits for the mental health of all gay men, regardless of their age.

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Appendix A

Questionnaire Package

Plain Language Statement – Cover Letter

**University of Ballarat
Plain Language Statement and Informed Consent
Invitation to Participate In Research:**

“Sense of Belonging and Mental Health Among Younger and Older Australians”

Dear Potential Participant,

Thank you for your interest in this research being conducted by Simon Morris, a Doctor of Psychology candidate, and Dr Suzanne McLaren, a Senior Lecturer in Psychology, at the University of Ballarat. This study will examine if sense of belonging and mental health vary according to one’s gender, age and sexual orientation. The information that is being collected will be of value to health professionals seeking to assist ageing men and women.

If you volunteer to participate in this research you will be asked to complete a questionnaire, which asks for some background information, and about your sense of belonging (e.g., I feel like an outsider in most situations) and mental health (e.g., do you feel that life is worth living?). This research is anonymous and therefore you do not disclose your name. When your anonymous questionnaires are completed and returned they will form a larger database from which only group data will be reported. Your individual results will not be reported and none of the information that you supply in this study will be able to be traced or linked back to you in any way.

Should you choose to participate, you will be asked to complete the attached questionnaire, which will take approximately 15 minutes to complete. It is very important that you answer each question as truthfully as possible for the research to be of significance.

If you want to participate, please use the accompanying “reply paid” envelope to return the completed questionnaire to the researchers. Please note that returning the questionnaire is an indication that you understand the nature of the research and that you are freely volunteering to participate in the research.

You may withdraw your participation now or at any other time whilst completing the questionnaire (particularly if you are experiencing distress). However, please understand that once you have returned the completed questionnaire, it will be impossible to identify your anonymous questionnaire among the larger pool and therefore withdrawal at this stage will not be an option.

You are encouraged to discuss any questions that you may have during, or at the conclusion of the questionnaire, with the principal researcher Dr Suzanne McLaren or your doctor. Should you prefer to discuss your issues anonymously, you may wish to contact

Lifeline (available 24 hours a day: telephone 131 114 for the cost of a local call or free call 1300 651 251), or if relevant, the Gay and Lesbian Switchboard (telephone (03) 9827 8544 or freecall 1800 184 527).

Please contact Dr McLaren to obtain a copy of the results, which will be available at the end of 2006.

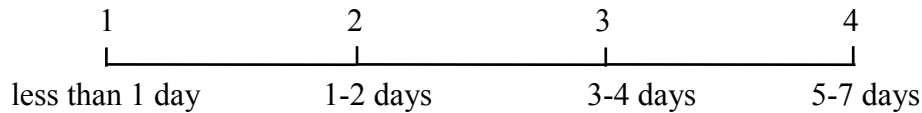
Thank you for considering participation in this research.

Dr Suzanne McLaren- Principal Researcher Mr Simon Morris – Student Researcher
(03) 5327 9628
E-mail: s.mclaren@ballarat.edu.au

Note: Should you (i.e. the participant) have any concerns about the conduct of this research project, please contact the Executive Officer, Human Research Ethics Committee, Research and Graduate Studies Office, University of Ballarat, PO Box 663, Mt Helen VIC 3353. Telephone: (03) 5327 9765.

(Centre for Epidemiologic Studies-Depression Scale)

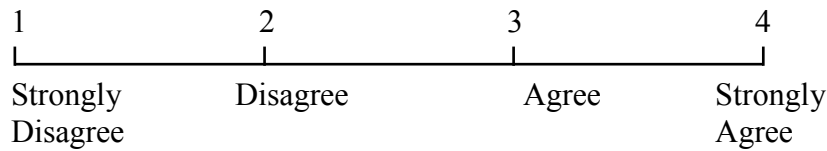
This scale consists of 20 items. Please read each item carefully, then circle the one answer for each item which most applies to you over the past week, using the following scale:

**During the Past WEEK:**

- | | | | | |
|--|---|---|---|---|
| 1. I was bothered by things that don't usually bother me | 1 | 2 | 3 | 4 |
| 2. I did not feel like eating; my appetite was poor | 1 | 2 | 3 | 4 |
| 3. I felt that I could not shake off the blues even with help from my family | 1 | 2 | 3 | 4 |
| 4. I felt that I was just as good as other people | 1 | 2 | 3 | 4 |
| 5. I had trouble keeping my mind on what I was doing | 1 | 2 | 3 | 4 |
| 6. I felt depressed | 1 | 2 | 3 | 4 |
| 7. I felt that everything I did was an effort | 1 | 2 | 3 | 4 |
| 8. I felt hopeful about the future | 1 | 2 | 3 | 4 |
| 9. I thought my life had been a failure | 1 | 2 | 3 | 4 |
| 10. I felt fearful | 1 | 2 | 3 | 4 |
| 11. My sleep was restless | 1 | 2 | 3 | 4 |
| 12. I was happy | 1 | 2 | 3 | 4 |
| 13. I talked less than usual | 1 | 2 | 3 | 4 |
| 14. I felt lonely | 1 | 2 | 3 | 4 |
| 15. People were unfriendly | 1 | 2 | 3 | 4 |
| 16. I enjoyed life | 1 | 2 | 3 | 4 |
| 17. I had crying spells | 1 | 2 | 3 | 4 |
| 18. I felt sad | 1 | 2 | 3 | 4 |
| 19. I felt that people disliked me | 1 | 2 | 3 | 4 |
| 20. I could not "get going" | 1 | 2 | 3 | 4 |

(Sense of Belonging Instrument-Psychological)

This scale consists of 33 items. Please read each item carefully, then circle the one answer for each item which most applies to you, using the following scale:



- | | | | | |
|---|---|---|---|---|
| 1. I often wonder if there is any place on earth where I really fit in | 1 | 2 | 3 | 4 |
| 2. I am just not sure if I fit in with my friends | 1 | 2 | 3 | 4 |
| 3. I would describe myself as a misfit in most social situations | 1 | 2 | 3 | 4 |
| 4. I generally feel that people accept me | 1 | 2 | 3 | 4 |
| 5. I feel like a piece of a jigsaw puzzle that doesn't fit into the puzzle | 1 | 2 | 3 | 4 |
| 6. I would like to make a difference to people or things around me, but I don't
feel that what I have to offer is valued | 1 | 2 | 3 | 4 |
| 7. I feel like an outsider in most situations | 1 | 2 | 3 | 4 |
| 8. I am troubled by feeling like I have no place in this world | 1 | 2 | 3 | 4 |
| 9. I could disappear for days and it wouldn't matter to my family | 1 | 2 | 3 | 4 |
| 10. In general, I don't feel a part of the mainstream of society | 1 | 2 | 3 | 4 |
| 11. I feel like I observe life rather than participate in it | 1 | 2 | 3 | 4 |
| 12. If I died tomorrow, very few people would come to my funeral | 1 | 2 | 3 | 4 |
| 13. I feel like a square peg trying to fit into a round hole | 1 | 2 | 3 | 4 |
| 14. I don't feel that there is any place where I really fit in this world | 1 | 2 | 3 | 4 |
| 15. I am uncomfortable knowing that my background and experiences are so
different from those who are usually around me | 1 | 2 | 3 | 4 |
| 16. I could not see or call my friends for days and it wouldn't matter to them | 1 | 2 | 3 | 4 |

- | | | | | |
|---|---|---|---|---|
| 17. I feel left out of things | 1 | 2 | 3 | 4 |
| 18. I am not valued by or important to my friends | 1 | 2 | 3 | 4 |
| 19. It is important to me that I am valued or accepted by others | 1 | 2 | 3 | 4 |
| 20. In the past, I have felt valued and important to others | 1 | 2 | 3 | 4 |
| 21. It is important to me that I fit in somewhere in this world | 1 | 2 | 3 | 4 |
| 22. I have qualities that can be important to others | 1 | 2 | 3 | 4 |
| 23. I am working on fitting in better with those around me | 1 | 2 | 3 | 4 |
| 24. I want to be a part of things going on around me | 1 | 2 | 3 | 4 |
| 25. It is important to me that my thoughts and opinions are valued | 1 | 2 | 3 | 4 |
| 26. Generally, other people recognise my strengths and good points | 1 | 2 | 3 | 4 |
| 27. I can make myself fit in anywhere | 1 | 2 | 3 | 4 |
| 28. All of my life I have wanted to feel like I really belonged somewhere | 1 | 2 | 3 | 4 |
| 29. I don't have the energy to work on being a part of things | 1 | 2 | 3 | 4 |
| 30. Fitting in with people around me matters a great deal | 1 | 2 | 3 | 4 |
| 31. I feel badly if others do not value or accept me | 1 | 2 | 3 | 4 |
| 32. Relationships take too much energy for me | 1 | 2 | 3 | 4 |
| 33. I just don't feel like getting involved with people | 1 | 2 | 3 | 4 |

(Sense of Belonging Visual Analogue Scale)

Place a vertical line through each of these horizontal lines to indicate how you are feeling right now.

1. Thinking about the *general community in which you are currently living*, to what extent do you

- feel a desire or interest to belong?

[no desire or interest at all] _____ [complete desire or interest]

- feel needed or valued?

[not needed or valued at all] _____ [completely needed / valued]

- feel that you fit in?

[do not fit in at all] _____ [completely fit in]

(Sense of Belonging Within Gay Communities Scale)

Questions on these next two pages are for people who are **gay male, lesbian, bisexual, or queer**. If you do not identify as any of the above, please continue to the next section.

You will be asked to mark a line vertically through each of several lines to indicate how you feel.

If you identify as MALE, answer the questions in relation to the GAY MALE Community only.

If you identify as FEMALE, answer the questions in relation to the LESBIAN Community only.

Please read each question carefully, as each question is asking you to think about a different aspect of gay/lesbian community.

1. Thinking about the *gay male/lesbian community in general*, to what extent do you

- feel a desire or interest to belong?

[no desire or interest at all] _____ [complete desire or interest]

- feel needed or valued?

[not needed or valued at all] _____ [completely needed / valued]

- feel that you fit in?

[do not fit in at all] _____ [completely fit in]

2. Think about your *local gay male/lesbian community* in the city/region/town that you live. This may also include interest or social groups. To what extent do you

- feel a desire or interest to belong?

[no desire or interest at all] _____ [complete desire or interest]

- feel needed or valued?

[not needed or valued at all] _____ [completely needed / valued]

- feel that you fit in?

[do not fit in at all] _____ [completely fit in]

3. Thinking about your *network of gay male/lesbian friends*, to what extent do you

- feel a desire or interest to belong?

[no desire or interest at all] _____ [complete desire or interest]

- feel needed or valued?

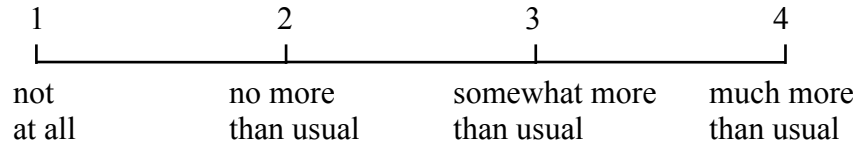
[not needed or valued at all] _____ [completely needed / valued]

- feel that you fit in?

[do not fit in at all] _____ [completely fit in]

(Suicide Subscale of the General Health Questionnaire)

This scale consists of 7 items. Please read each item carefully, then circle the one answer for each item which most applies to you over the past few weeks, using the following scale:

**Over the past few weeks, have you:**

- | | | | | |
|--|---|---|---|---|
| 1. Been thinking of yourself as a worthless person? | 1 | 2 | 3 | 4 |
| 2. Felt that life is full of hope? | 1 | 2 | 3 | 4 |
| 3. Felt that life is worth living? | 1 | 2 | 3 | 4 |
| 4. Thought of the possibility that you might
make away with yourself? | 1 | 2 | 3 | 4 |
| 5. Found that at times you couldn't do anything
because your nerves were too bad? | 1 | 2 | 3 | 4 |
| 6. Found yourself wishing you were dead and
away from it all? | 1 | 2 | 3 | 4 |
| 7. Found that the idea of taking your own life
kept coming into your mind? | 1 | 2 | 3 | 4 |

Background Information

Please read and complete the following questions regarding your background. Do not give your name or include any other specific personal information that could identify you.

1. What is your gender? Male Female

2. What is your age? _____

3. Postcode of Usual Residence _____

4. What is your relationship status? Married Divorced
(please tick one only) Defacto (live with partner)
 Partnered (in a committed relationship)
 Single
 Widowed
 Other (please state) _____

5. Where do you permanently reside? Live in own home or rent –
 Other (please state) _____

6. Is this: By yourself or With another person

7. Number of children or grandchildren, if any? Children _____
Grandchildren _____

8. Country of birth Australia Other _____
(please specify)

9. Highest Education Level Achievement Primary
 Secondary School
 TAFE/Trade Certificate
 University – Undergraduate Degree
 University – Postgraduate Degree
 Other: _____

10. Current employment status

- Full time _____
(please specify your job)
- Part-time/casual _____
(please specify your job)
- Unemployed - Years unemployed? _____
- Retired - Years retired? _____
↳ Former occupation _____

11. Income (per annum)

- less than \$10,000 \$10,000 - \$20,000
- \$20,000-\$30,000 \$30,000 – \$40,000
- \$40,000-\$50,000 \$50,000 - \$60,000
- \$60,000-\$70,000 \$70,000 +

12. What do you consider your sexual orientation to be?

- Heterosexual Gay Male Lesbian
- Bisexual Queer Don't know/unsure
- Other (please specify) _____

13. What percentage of people that you know are aware of your sexual orientation?

- less than 25% 25% to 50% 51% to 75% more than 75%

14. Please indicate on the scale below how religious you consider yourself to be:

Not Religious _____ Very Religious

Thank you for taking the time to complete this questionnaire. You have made a valuable contribution to our knowledge of mental health among younger and older Australians. Should you be experiencing any concerns at any time, you are encouraged to contact the resources listed on your letter of invitation (including Lifeline on 13 1114 or 1300 651 251 to preserve your anonymity).

Appendix B

Scatterplot of Sense of Belonging-Psychological Instrument and Sense of Belonging Visual Analogue Scale

