Opportunities for social connection

A determinant of mental health and wellbeing
Summary of learnings and implications

Addressing the social and economic determinants of mental and physical health

While the overall health of world populations is improving, there are significant factors that continue to impact on our mental and physical health. How much you earn, your social position, your level of education and your capacity to be involved in activities that help connect you to others in your community are important factors in determining your health status (VicHealth 2009).

In acknowledgement of the social and economic factors affecting the health of the population and sub-populations, VicHealth has established a focus on increasing social and economic participation as a key priority area for action during 2009–2013. Our objectives in this area are to:

1. **increase participation in physical activity**

2. **increase opportunities for social connection**

3. **reduce race-based discrimination and promote diversity**

4. **prevent violence against women by increasing participation in respectful relationships**

5. **build knowledge to increase access to economic resources.**

This summary of learnings and implications presents the latest published research examining participation and social connection. In particular there is a focus on:

- the importance of social inclusion
- social support through supportive relationships
- social participation
- social networks
- social/community cohesion
- civic engagement.

Other summaries in this series are available at www.vichealth.vic.gov.au/publications

Introduction

'On the one hand, millions of dollars are committed to alleviating ill-health through individual intervention. Meanwhile we ignore what our everyday experience tells us, i.e. the way we organize our society, the extent to which we encourage interaction among the citizenry and the degree to which we trust and associate with each other in caring communities is probably one of the most important determinants of health' **(Lomas 1998, p. 1181 cited in Whiteford et al. 2005).**

Social connections comprise the people we know, the friends we confide in, the family we belong to and the community we live in. Each contributes to our physical and mental health in a variety of ways.

Cornwell and Waite (2009) report that social isolation research traverses many disciplines. This can include public health, sociology, psychology, education, geography and urban design. There are also a range of methodologies used in studies of social connection such as quantitative, qualitative and mixed-methods design. As well as theoretical frameworks such as social capital, social support, social network and numerous context-specific theories. While most studies in social connection are cross-sectional, few longitudinal studies have explicitly tested the causal pathways between social connection and health (Priest et al. 2008). However, there is now compelling evidence that our social relationships or the social connections we form at an individual and community level impact on health and wellbeing. For example, Holt-Lunstad et al. (2010) undertook a meta-analytic review of 148 studies that investigated the correlation between social relationships and risk mortality.

This summary is available on the VicHealth website at www.vichealth.vic.gov.au/publications

www.vichealth.vic.gov.au

VicHealth

They found that 'individuals with adequate social relationships have a 50 per cent greater likelihood of survival compared to those with poor or insufficient social relationships' (Holt-Lunstad et al. 2010, p. 14). This is comparable in scale with quitting smoking (Holt-Lunstad et al. 2010).

Key concepts and definitions

Social participation incorporates participation at a societal level (such as participating in work), informal participation (such as contact with family friends) and organised social participation (such as group or club membership) (Jehoel-Gibsbers 2004). There is growing evidence that participation in groups is associated with less psychological distress (Ellaway & Macintyre 2007) and good mental health (Priest et al. 2008), while volunteering is associated with reduced mortality risk (Ayalon 2008), good mental health (Piliavin & Siegl 2007; Priest et al. 2008), higher levels of self-reported personal wellbeing (Morrow-Howell et al. 2003; Mellor et al. 2009) and neighbourhood wellbeing (Mellor et al. 2009).

Social support refers to the emotional, practical or functional aspects of our interpersonal relationships (Israel et al. 2002; Stansfeld 2006). It is the advice, love, help, resources, information and empathy we give and receive among family and friends. For a detailed discussion on the definition of social support see House (1981).

Civic engagement refers to the ties people have to organisations and associations such as church organisations, volunteer associations and service clubs, as well as professional and political associations (see Viswanath et al. 2006).

Social and community cohesion refers to two aspects of a community or society. The first is the absence of latent social conflict, and the second is the existence of strong social bonds (Cradock et al. 2009). These are determined by the level of trust, reciprocity and participation in a neighbourhood or community (Kawachi & Berkman 2000).

Social networks comprise 'a set of individuals or groups who are joined together by relationships' (Balaji et al. 2007, p. 1386). These relationships enable support, material resources, information, norms and values to flow between individuals and groups (Balaji et al. 2007). Social networks can be facilitated through face-to-face contact or through other means such as telephone or internet contact. Social networks may be made up of close intimate contacts as well as more distant acquaintances (Balaji et al. 2007).

Bonding ties are the close, cooperative and supportive relationships people have with family and friends (Szreter & Woolcock 2004). They are often characterised by their longevity (Warr 2005) and homogeneity, as people who are similar in their social location come together (Szreter & Woolcock 2004). For an example of a study on the association between bridging and bonding ties and health, see Kim et al. (2006).

Bridging ties are contacts people have with acquaintances or more distant friends. They are the contacts people have with others who are not similar in terms of a 'shared social identity' (Szreter & Woolcock 2004). They may be diverse and may provide opportunities to access resources when needed (Warr 2005; Granovetter 1973). Bridging ties can provide people with access to a wide range of health services, or other more distant resources including information, advice and political influence (Granovetter 1973; Szreter & Woolcock 2004).

Social capital has become an umbrella term used to describe the characteristics of our social relationships such as networks, support, trust and resources. As a result it has a range of meanings and forms of measurement in the research literature. To avoid confusion this summary of learnings and implications focuses on the relationship between characteristics of social capital and health rather than social capital itself. For a detailed account of social capital as a concept in health, see Hawe and Shiell (2000).

Social inclusion is often described as a 'human right or moral imperative' (Spandler 2007, p. 3). It refers to policies or programs designed to remove barriers to participation in mainstream society. According to the Australian Social Inclusion Board, a socially inclusive society 'is one in which all Australians feel valued and have the opportunity to participate fully in the life of our society. Achieving this vision means that all Australians will have the resources, opportunities and capability to learn, work, engage in the community and have a voice' (Australian Social Inclusion Board 2009). For a critique of the use of the terms 'social inclusion' and 'social exclusion', see Spandler (2007).

Social exclusion is defined by the Social Exclusion Taskforce in the UK as what happens when people or areas experience a 'combination of problems, such as unemployment, discrimination, poor skills, low incomes, poor housing, high crime and family breakdown'. These problems can be reinforcing and diffused through generations (Cabinet Office 2009).

Aspects of social connection: the health links

Social inclusion

There is now strong evidence of the relationship between social isolation and health. Older people who are socially isolated or excluded are more likely to have poorer health (Cornwell & Waite 2009), while adolescents who are isolated are more likely to experience depressive symptoms and have lower self-esteem (Hall-Lande et al. 2007).

A range of indicators have been used to measure the prevalence of social isolation within populations. These include feelings of loneliness, having small social networks and low levels of participation (Cornwell & Waite 2009; Berkman & Syme 1979):

- there is an association between feeling lonely and depressive symptoms. Cacioppe and Hughes (2006) found this to be the case for adults aged 54 years and older, and this was also established in longitudinal studies of older adults (Heikkinen & Kauppinen 2004). As Cacioppo and Hughes (2006) point out, 'everyone feels lonely at some point in their lives, but situational factors can increase the frequency or chronicity of loneliness' (Cacioppo & Hughes 2006, p. 148). Situational factors may include having a small social network (Berkman & Syme 1979)

- in Australia, it is anticipated that there will be between 2.8 and 3.7 million people living alone by 2026 compared to 1.8 million in 2001. The number of older Australians living alone will increase to between 34 per cent and 39 per cent. The average household size is also projected to decrease in Australia by 2026 (Australian Bureau of Statistics 2004).

Social support

There is strong evidence of the association between social networks or social support and health, including mental health (Kawachi & Berkman 2001). For a review of the literature, see Szreter and Woolcock (2004). For example, in a study of social support, mortality risk and older people with diabetes, participants with medium levels of support had a much lower risk of mortality than those with low levels of support (Zhang et al. 2007). This suggests that some support is better than none.

- Instrumental and emotional social support are important to health. Instrumental support refers to practical help, resources or assistance that we receive or give to others (House 1981; Israel et al. 2002; Stansfeld 2006). Instrumental social support was found to be strongly associated with health in poor neighbourhoods, highlighting the importance of practical help when resources are limited (Israel et al. 2002).

- When asked in the Victorian Population Health Survey (2007) whether people could get help when needed, 79.7 per cent said 'yes definitely' to getting help from friends, 81.1 per cent said 'yes definitely' to getting help from family members and 47.8 per cent said 'yes definitely' to getting help from neighbours (Department of Human Services 2008, p. 85). These results highlight the importance of family and friends as sources of help and support, with lower levels of instrumental support being gained from neighbours. Emotional support refers to the caring, empathy and trust we give and receive among family and friends (Israel et al. 2002).

- Evidence exists that social support has a buffering effect, that is, it moderates the effect of an adverse life event or stress (Cohen & Wills 1985). In other words, emotional and practical help may soften the impact of stressful events during the life course (Stansfeld 2006).

- The Australian General Social Survey found that 59 per cent of people reported experiencing at least one potentially stressful life event in the previous 12 months. This was higher for women than men. The type of stressful event included serious illness or the death of a close friend or family member (Australian Bureau of Statistics 2007).

- Studies have highlighted that the protective properties of social support are context-dependent (Israel et al. 2002), related to the type of support provided and gender, and differ according to life stage (see Kawachi & Berkman 2001). For example, for older Australians, supportive relationships decline as they get older. When asked about people they could confide in who were not living with them, 91 per cent had one close relative and 78 per cent at least one close friend. However, this dropped, to 88 per cent with relatives and 72 per cent with friends, once aged over 85 years (Australian Bureau of Statistics 2007).

Social participation

The National Institute for Health and Clinical Excellence (2008) in the UK suggests that social participation may have:

- a positive impact on perceptions of crime
- positive benefits for social cohesion
- positive benefits for 'bonding' and 'bridging' social capital.

It also suggests that direct community engagement activities have been indicated to:

- 'empower communities by increasing community members' sense of political efficacy' (National Institute for Health and Clinical Excellence 2008, p. 72)
- build capacity
- have a positive impact on indicators such as education, income and crime (National Institute for Health and Clinical Excellence 2008).

Knowing who participates in different types of groups is important in understanding whether the benefits of group participation are shared equally according to gender, ethnicity, socioeconomic status and location:

- men participated more in political groups and women in 'church-related groups, education/arts activities and social clubs' in a Scottish study (Ellaway & Macintyre 2007, p. 1386). The same study found that young people were more likely to participate in sports clubs, middle-aged people in political and civic groups, and older people in church and social groups. Participation rates were also higher for those of a higher social class, with the exception of social clubs (Ellaway & Macintyre 2007)

- in the Australian General Social Survey, the most popular type of participation for people aged 18 to 24 years was sport and physical recreation groups (44 per cent), while the most popular form of participation for people over 75 years was involvement in a religious or spiritual organisation (Australian Bureau of Statistics 2007). Of adults (over 18 years old), 19 per cent participated in one or more civic groups in the previous 12 months. The most active age group was 45 to 64 years (23 per cent). The civic groups that people were most likely to participate in were 'trade union, professional and technical associations (7 per cent), environmental or animal welfare groups (5 per cent), followed by body corporate or tenants' associations' (Australian Bureau of Statistics 2007).

If participating in groups is good for your health, are the benefits greater if you are a member of more than one group? In the case of formal volunteering, it would appear so. Drawing on data from the Wisconsin Longitudinal Study, Piliavin and Siegl (2007) explored (among other hypotheses) whether continuous volunteering and volunteering for more organisations resulted in increased wellbeing. They found both to be the case. Volunteering for three organisations was better than two, and volunteering for two was better than for one (Piliavin & Siegl 2007, p. 462).

- In Victoria, one in three people volunteer in local groups (Department of Human Services 2008). This is consistent with Australia-wide figures, which show that 32 per cent of men and 36 per cent of women volunteered in the previous 12 months (Australian Bureau of Statistics 2007).
- The reasons that sports participants volunteered included helping the community or other people (57 per cent), personal satisfaction (44 per cent), family or personal involvement (37 per cent) and to 'do something worthwhile' (37 per cent) (Australian Bureau of Statistics 2006).
- Can sustained group activity provide the biggest health gain? Continuous volunteering was found to be beneficial to health (Piliavin & Siegl 2007). In a study based on the Americans' Changing Lives survey, the mental health benefits of volunteering were strongest among the elderly when sustained over time (Musick & Wilson 2003).
- Social ties to community groups can also help in recall of health messages. Ties to community groups, such as memberships to service clubs or volunteer associations, were associated with better recall of health messages (Viswanath et al. 2006, p. 1456).

The Victorian Population Health Survey found that people from households with lower levels of income participated less in community events (Department of Human Services 2008). Social attachment (capacity to obtain support and ask for favours and contact with family and friends) was found to increase with income as did good health (Australian Bureau of Statistics 2007). Affordability is a key factor in people's capacity for social participation, with nearly 16 per cent of Australian households unable to afford to participate in social activities such as family holidays, having a night out or having family or friends over for a meal (Saunders 2003).

Social networks

Social networks provide the infrastructure for social interaction. This relates to who we know, their roles and the function they serve in our relationships. Research into the relationship between social networks and health focuses on characteristics of networks, such as the number of people within a network, the frequency of contact with such people and who they are:

- the number of people in a social network (number of social ties) and the number of contacts with those people has been associated with mortality (Berkman & Syme 1979) and mental health (Kawachi & Berkman 2001). For a detailed review, see Kawachi and Berkman (2001)

- the Alameda County Study identified four types of social ties. These were contacts people had with their friends and family; ties with a spouse (marital status); membership of a church group and membership of other types of groups. Having these types of ties was a predictor of low mortality risk (Berkman & Syme 1979)

- similarly, it was found in a six-year follow-up study that low levels of social contact and low numbers of social ties were associated with a higher risk of mortality in a Swedish sample of men and women (Orth-Gomer & Johnson 1987)

- in Victoria more than half the people surveyed in the Victorian Population Health Survey (52.4 per cent) had spoken to 10 people or more the previous day (Department of Human Services 2008, p. 85).

What is the optimal number of social ties and contacts needed to deliver better health outcomes?

- The Copenhagen City Heart Study found that 'with the exception of parents, contacts that occurred at least monthly were as strongly associated with favourable health outcomes as those that were more numerous' (Barefoot et al. 2005, p. 996). Therefore, the number of social contacts we have is important to our health as well as the social roles these contacts fulfil, such as providing social support.

- The Australian General Social Survey in 2006 found that 96 per cent of older adults had some contact with friends and family (not living with them) at least once a week. Less than 1 per cent had no relatives and friends. Other forms of contact were also explored in the survey: 96 per cent had talked to their family or friends by fixed telephone, 41 per cent by mobile phone, 37 per cent by mail, 18 per cent by internet and 9 per cent by SMS (Australian Bureau of Statistics 2007).

- Greater diversity of people (or social ties) is also associated with health. Barefoot et al. (2005) found that diversity in intimate social contact was associated with better health. Intimate social contact refers to contact with family and friends. A greater diversity of contact represents bridging ties with different types of people. For example, a greater diversity of occupations or cultures within our social networks may provide more opportunities to access resources.

- A study of Montreal residents investigated the association between trust, participation, network social capital and obesity. It found that people 'with more diverse ties and greater access to resources tended to have a lower risk of being overweight and obesity' (Moore et al. 2009, p. 178).

- While diversity of social ties may be important for social support and our capacity to access resources, it would appear that in Australia we tend to connect with people who are similar to us (that is, from similar social groups). The Australian General Social Survey found that over half of the people surveyed had friends of similar educational background, 73 per cent of similar ethnic background and 66 per cent of similar age (Australian Bureau of Statistics 2007).

- Other characteristics of people in our social networks may also be important for health. This can be as simple as the extent to which the health behaviours of our friends and family influence our own. Social influence flows within networks, where the attitudes and beliefs of network members are transmitted (Ashida & Heaney 2008).

- A longitudinal study of the Framingham Heart Study social network found that people's happiness in part depended on whether other people in their network were happy. Specifically, they found that 'the happiness of an individual is associated with the happiness of people up to three degrees removed in the social network' (Fowler & Christakis 2008).

Social or community cohesion and civic engagement

A number of studies documented and discussed the relationship between the physical or mental health of individuals and community or neighbourhood level factors (Fone et al. 2007; Chaix 2008; Lochner et al. 2003). Social or community cohesion refers to particular social characteristics of a community or neighbourhood, such as trust, reciprocity and participation in community and civic life (Stafford & McCarthy 2006):

- Kawachi and Berkman (2000) outline three pathways through which social cohesion affects health:

  1. High levels of social capital in communities can influence healthy behaviours: in communities where people trust each other, people participate in local activities and events and have close social ties that are likely to encourage healthy behaviour.

  2. High levels of social capital in a community can also influence access to health services.

  3. There is a direct influence over psychosocial processes. Greiner et al. (2004) point out that these communities may also organise more readily to act and advocate for health-related resources.

- A cross-sectional survey of Australian adults found that higher levels of trust and feeling safe were associated with lower levels of psychological distress (Phongsavan et al. 2006). This study points to the need to take into account economic conditions when understanding the relationship between social capital and health.

- Another Australian study found that neighbourhood connection related to mental health but not physical health. It also found that income and education were more strongly associated with health (Ziersch et al. 2005).

- In the 2006 Australian General Social Survey, only 54 per cent of respondents felt that most people could be trusted (Australian Bureau of Statistics 2007). Over one-third of Victorians believe others can definitely be trusted, and this increased in the period from 2001 to 2006 (Department of Human Services 2008).

Research also focused on the relationship between community cohesion, neighbourhood disorder (or conflict) and health. Neighbourhood disorder is reflected in measures of safety (feeling unsafe, etc.) as well as neglect of the local environment (Mendes de Leon et al. 2009).

Is living in a neighbourhood with high levels of disorder bad for your health?

- Echeveria et al. (2008) found that neighbourhood problems were positively associated with smoking, risky drinking and depression.

- Fone et al. (2007) found that 'income deprivation and social cohesion measured at small-area level are significantly and independently associated with poor mental health status' (Fone et al. 2007, p. 342). They also found that high levels of social cohesion can modify the effect of income deprivation on mental health (measured at a community level). Social cohesion is also important in protecting the mental health of people living in disadvantaged areas (Fone et al. 2007; Zubrick 2007).

Building social connection across sectors

VicHealth is mandated by the *Tobacco Act 1987* to engage with sports and arts settings in order to improve awareness of programs for promoting good health in the community. VicHealth also works in partnership with governments, organisations, communities and individuals from a broad range of sectors including technology, education, community, local government and planning.

Social connection through the arts

The arts provide a unique setting in which people come together to create objects, performances or meaning. It is the capacity of the arts to create a communicative experience (McCarthy et al. 2006) and for individuals and communities to express themselves that sets it apart from other sectors.

What does arts participation look like?

- According to Community Indicators Victoria, 58 per cent of Victorians surveyed participated in an arts or related activity in the month prior to being surveyed in 2007 (Community Indicators Victoria 2007).

- In an Australian Bureau of Statistics survey of attendance at selected cultural events and venues, 85 per cent of Australians surveyed (aged 15 years or over) had attended at least one cultural event or venue in the previous year. However, the type of event or venue varied according to a person's educational attainment, employment and income. For example, employed people (particularly part-time employed) had higher attendance rates at 'classical and popular music concerts, theatre performances and musicals and operas than people who were unemployed or not in the labour force' (Australian Bureau of Statistics 2007).

Health gains from participating in the arts

Participation in arts activity supports mental health by providing an opportunity for people to gain new skills, confidence and self-esteem. These are the benefits that stem from participating in an activity with others while engaging in a creative process:

- a systematic review of performing arts interventions and adolescent health found evidence of increased self-confidence and cooperation, and improved peer interaction and social skills (Daykin et al. 2008)

- young people's engagement with creative activities can lead to better academic outcomes, improved levels of self-esteem and a reduction in drug and alcohol consumption (Effective Change 2006)

- the Storytelling for Empowerment intervention was a school-based program aimed at creating positive peer groups through a focus on cultural identity. The intervention included 'storytelling and art for emotional expression' (Nelson & Arthur 2003, p. 169). The activities were delivered over four months and included games, writing, plays and artwork. The evaluation of the intervention found a statistically significant decrease in the use of alcohol and marijuana among high contact participants (Nelson & Arthur 2003)

- the evaluation of a program designed to provide creative opportunities (through courses) for people with mild or moderate mental health problems found that 64 per cent of those evaluated had lower indicators of mental health problems (such as depression), 64 per cent had increased self-confidence and self-esteem, and 74 per cent believed they would incorporate creativity into their life in the future (Eades & Ager 2008)

- in Victoria, a mixed-methods evaluation study of two community festivals found that participants (people who participated as organisers or in performances) created new social networks, had an increased sense of belonging and developed self-esteem (Barraket & Kaiser 2007).

The arts create opportunities for people to expand their social networks and to develop new friendships, which can provide social support (APU/UCLAN 2005; Barraket 2005; McDonald 2008) and impact positively on health. This is most evident in community arts:

- a study of three festivals in Ireland designed to (among other things) evaluate the social gains from arts participation using a range of methods, from questionnaires to interviews, found that 78 per cent of participants gained confidence, 96 per cent developed new friendships and 43 per cent felt more healthy (Matarasso 1996). Another study by the same author that involved case study research of arts projects found (through a participant questionnaire) that 84 per cent of people surveyed felt more confident, 91 per cent developed new friendships and 40 per cent felt better about the communities in which they lived (Matarasso 1997).

The arts are an innovative resource for individual and collective expression. There is evidence that the arts can have an important impact on community cohesion and the collective efficacy of a community to have its say (McQueen-Thomson et al. 2004):

- the arts provide a communicative experience (McCarthy et al. 2006) and can act as a mechanism through which challenging or difficult community issues and problems can be presented and discussed, particularly from the perspective of marginalised groups (White 2008)

- cultural celebrations and events may promote cooperation, bring new skills and capacities to communities, promote awareness of local issues and reduce social isolation, while promoting economic development. All of these outcomes are clearly linked to individual and community health (McQueen-Thomson et al. 2004; Barraket & Kaiser 2007; Matarasso 1996)

- the arts provide an innovative vehicle for improving health literacy. For example, a study of a performing arts HIV-prevention intervention found that students who participated in a six-week program of workshops gained some knowledge about HIV prevention (Campbell et al. 2009)

- similarly, a public health arts installation ('OddSocks' presented at Melbourne's Fringe Festival) designed to raise awareness of foot health, found that through the interactive installation people gathered information via health promotion materials and speaking with health professionals (Robinson et al. 2008).

Social connection through physical activity

Sports and participation in other forms of physical activity are an important source of social contact, with 45 per cent of Australian women and 55 per cent of Australian men reporting that they gain social contact through their involvement (Sport and Recreation Victoria & Victorian Health Promotion Foundation 2002).

In 2006, over 1.7 million Australian adults volunteered for sport and recreation organisations, and over 32 per cent of all volunteers in Australia are found in the sport and recreation sector (Australian Bureau of Statistics 2007).

Studies show that participation in physical activity contributes to:

- mental health benefits resulting from the immediate physiological changes occurring during physical activity, including improvements in mood and the control of anxiety and depressive symptoms (Dowd et al. 2004)

- mental health and wellbeing, by strengthening our relationships and links with one another, building active cohesive communities and enhancing our access to safe and supportive environments (Sport England & Local Government Association 1999; Sports Matters Group & Public Policy Forum 2004)

- linking young people and their families with schools, community facilities and networks (VicHealth 2002)

- partially mediating risks for depressive symptoms for both boys and girls when the team sport is a positive experience (Boone & Leadbeater 2006).

Social connection in schools

- Projects such as the national Mindmatters project (www.mindmatters.edu.au) and the Victorian Gatehouse Project (www.rch.org.au/gatehouseproject) highlight that engaging children and young people and connecting them to school communities enhances their wellbeing and reduces health damaging behaviours such as smoking.

- Students with poor social connectedness who also experience conflict with other people are more likely to experience depressive symptoms in later years. Those students with good social and school connectedness had the best outcomes for mental health (Bond et al. 2007).

- The Gatehouse Project evaluation also found that those students 'most disaffected in early secondary school [are] more likely to use cannabis than those better attached to school' (Bond et al. 2004, p. 27).

Social connection at the community level

- In Victoria, Neighbourhood Renewal has delivered positive outcomes for people living in disadvantaged areas. Neighbourhood Renewal is a place-based initiative occurring in 19 areas across the state. The second wave of evaluation found that 87 per cent of indicators (such as income and employment) demonstrated improvement or arresting of decline, narrowing the gap between Neighbourhood Renewal sites and the Victorian average. Between the first and second evaluations there was a 12 per cent increase in further education qualifications gained, and a 4 per cent increase in perceived levels of community participation (Neighbourhood Renewal Unit, Victorian Government 2008).

Social connection through information and communication technology

Digital technologies have become an increasingly pervasive and transformative part of our everyday lives. Internet and mobile technologies are at the centre of this transformation. Our ability to connect, create and collaborate now stretches across greater distances and more diverse communities and heightens the potential for participation in the public sphere. VicHealth has identified the technological environment as an area for health promotion focus that offers the capacity to enhance mental and physical health and wellbeing through increased social connection.

Access to mobile and internet technologies

The following statistics were cited in the report *Statistical snapshot: broadband, communications and the digital economy* (Department of Broadband, Communications and the Digital Economy, 2009):

- at June 2009, there were 8.4 million internet subscribers (Australian Bureau of Statistics 2009)

- this included households with home computer access (75 per cent) and households with internet access (67 per cent) (Australian Bureau of Statistics 2008)

- at June 2008, there were 22.1 million mobile phone subscribers (ACMA, 2008).

'Based on equivalised household incomes, individuals living in households with equivalised income of $2000 or more per week are three times more likely to have Broadband access compared with persons with less than $600 per week incomes' **(Australian Bureau of Statistics 2006, p. 8).**

Influence of the internet on social connection

Nearly half of all Australians have social networking profiles, and this is likely to increase rapidly (Australian Mobile Telecommunication Authority 2010).

In a sample survey of 428 respondents, young people and women linked the internet and mobiles with enhanced social connections, while seniors valued technology as enabling them to stay involved in a working capacity (Telecommunications Network et al. 2008).

'Overall people were much more likely to say that internet access had increased their contact with various groups rather than decreased it. Nearly four in ten respondents felt that their contact with people who shared hobbies or recreational activities had increased... A bare majority of respondents felt that use of the internet had increased their contact with family (51.5%), with 44% saying that levels of family contact had not changed. A larger majority reported increased contact with friends (61.4%). On the other hand, when asked about time spent face-to-face, sizeable minorities felt that they spent less time with household members (27.5%) and friends (12.5%) since being connected to the internet' **(Thomas, Ewing & Schiessl 2008, p. 12).**

An evaluation of the Digital Inclusion Initiative (DII) (which provided digital access to 1,680 properties in two public housing estates in Melbourne, Victoria, with 1,820 residents trained) found the social benefits included a greater sense of empowerment and equity of access by these communities, increased computer literacy and greater interaction between residents.

Acknowledgment

References

APU/UCLAN 2005, *Mental health, social inclusion and arts: developing the evidence base, Final report: the state of the art in England*, Publisher unknown, London.

Artal M & Sherman C 1998, 'Exercise against depression', *The Physician and Sportsmedicine*, vol. 26, no. 10, pp. 57–61.

Ashida S & Heaney CA 2008, 'Differential associations of social support and social connectedness with structural features of social networks and the health status of older adults', *Journal of Aging and Health*, vol. 20, no. 7, pp. 872–893.

Australian Bureau of Statistics 2004, *Household and family projections: Australia 2001–2026*, Cat. no. 3236.0, ABS, Canberra.

Australian Bureau of Statistics 2006, *Sport and social capital*, Cat. no. 4917.0, ABS, Canberra, accessed 23 February 2010, www.abs.gov.au/AUSSTATS/abs@.nsf/mf/4917.0

Australian Bureau of Statistics 2007, *Patterns of internet access in Australia, 2006*, Cat. no. 8146.0.55.001, ABS, Canberra.

Australian Bureau of Statistics 2007, *Age matters, Nov 2007*, Cat. no. 4914.0.55.001, ABS, Canberra.

Australian Bureau of Statistics 2007, *Attendance at selected cultural venues and events, Australia 2005–2006*, Cat. no. 4114.0, ABS, Canberra, accessed 23 February 2010, www.abs.gov.au/ausstats/abs@.nsf/mf/4114.0

Australian Bureau of Statistics 2007, *Voluntary Work, Australia, 2006*, Cat. no. 4441.0, ABS, Canberra.

Australian Bureau of Statistics 2008, *Household use of information technology, Australia*, 2007–08, Cat. no. 8146.0, ABS, Canberra.

Australian Bureau of Statistics 2009, *Internet activity, Australia, June 2009*, Cat. no. 8153.0, ABS, Canberra.

Australian Bureau of Statistics 2007, *General Social Survey: summary results, Australia 2006*, Cat. no. 4159.0, ABS, Canberra.

Australian Bureau of Statistics, 2007, *Voluntary Work, Australia, 2006*, Cat. no. 4441.0, ABS, Canberra.

Australian Communications and Media Authority 2008, *Communications report 2007–08*, Commonwealth of Australia, Canberra, pp. 14–15, 47.

Australian Mobile Telecommunication Authority 2010, *Mobile key to next phase of social networking, says MySpace at AMTA Forum*, AMTA Technology, accessed 23 February 2010, www.amta.org.au/?Page=1660

Australian Social Inclusion Board 2009, *Overview*, Australian Social Inclusion Board, viewed 23 February 2010, available at www.socialinclusion.gov.au/Pages/Overview.aspx

Ayalon L 2008, 'Volunteering as a predictor of all-cause mortality: what aspects of volunteering really matter?', *International Psychogeriatrics*, vol. 20, no. 5, pp. 1000–1013.

Balaji AB, Claussen A, Smith C, Visser SM, Morales J & Perou R 2007, 'Social support networks and maternal mental health and well-being', *Journal of Women's Health*, vol. 16, no. 10, pp. 1386–1396.

Barefoot JC, Gronbaek M, Jensen G, Schnohr P & Prescott E 2005, 'Social network diversity and risks of ischemic heart disease and total mortality: findings from the Copenhagen City Heart Study', *American Journal of Epidemiology*, vol. 161, pp. 960–967.

Barraket J & Kaiser A 2007, *Evaluating the mental health and wellbeing impacts of community-based festivals: Awakenings Festival and Braybrook's Big Day Out*, Victorian Health Promotion Foundation, Melbourne.

Barraket J 2005, *Putting people in the picture? The role of the arts in social inclusion. Social Policy Working Paper No. 4*, Brotherhood of St Laurence, Fitzroy.

Berkman LF & Syme L 1979, 'Social networks, host resistance and mortality: a nine-year follow-up of Alameda county residents', *American Journal of Epidemiology*, vol. 109, no. 2, pp. 186–204.

Bond L, Butler H, Thomas L, Carlin J, Glover S, Bowes G & Patton G 2007, 'Social and school connectedness in early secondary school as predictors of late teenage substance use, mental health, and academic outcomes', *Journal of Adolescent Health*, vol. 40, no. 4, pp. 9–18.

Bond L, Thomas L, Coffey C, Glover S, Butler H, Carlin JB & Patton G 2004, 'Long-term impact of the Gatehouse Project on cannabis use of 16-year-olds in Australia', *Journal of School Health*, vol. 74, no. 1, pp. 23–29.

Boone EM & Leadbeater BJ 2006, 'Game on: diminishing risks for depressive symptoms in early adolescence through positive involvement in team sports', *Journal of Research on Adolescence*, vol. 16, no. 1, pp. 79–90.

Cabinet Office 2010, *Social Exclusion Taskforce: Context for social exclusion work*, UK Cabinet Office, accessed 1 December 2009, www.co-test.co.uk/social_exclusion_task_force/context.aspx

Cacioppe JT & Hawkley CL 2003, 'Social isolation and health, with an emphasis on underlying mechanisms', *Perspectives in Biology and Medicine*, vol. 46, no. 3, pp. 39–210.

Cacioppe JT & Hughes EM 2006, 'Loneliness as a specific risk factor for depressive symptoms: cross-sectional and longitudinal analyses', *Psychology and Aging*, vol. 21, no. 1, pp. 140–151.

Campbell T, Bath M, Bradbear R, Cottle J & Parrett N 2009, 'An evaluation of performance-arts based HIV-prevention events in London with 13–16 year olds', *Perspectives in Public Health*, vol. 129, no. 5, pp. 216–220.

Chaix B, Lindstra M, Merlo J & Rosvall M 2008, 'Neighbourhood social interactions and risk of acute myocardial infarction', *Journal of Epidemiology and Community Health*, vol. 62, no. 1, pp. 62–68.

Cohen S, Wills TA 1985, 'Stress, social support, and the buffering hypothesis', *Psychological Bulletin*, vol. 98, no. 2, pp. 310–357.

Community Indicators Victoria, *CIV survey 2007*, Community Indicators Victoria, McCaughey Centre, Melbourne School of Population Health, University of Melbourne, accessed 23 April 2009, www.communityindicators.net.au

Cornwell EY & Waite LJ 2009, 'Social disconnectedness, perceived isolation, and health among older adults', *Journal of Health and Social Behavior*, vol. 50, no. 1, pp. 31–48.

Cradock AL, Kawachi I, Colditz GA, Gortmaker SL & Buka SL 2009, 'Neighborhood social cohesion and youth participation in physical activity in Chicago', *Social Science and Medicine*, vol. 68, no. 3, pp. 427–435.

Daykin N, Orme J, Evans D, Salmon D, McEachran M & Brain S 2008, 'The impact of participating in performing arts on adolescent health and behaviour: a systematic review', *Journal of Health Psychology*, vol. 13, pp. 251–264.

Department of Broadband, Communications and the Digital Economy, 2009, *Statistical snapshot: broadband, communications and the digital economy*, DBCDE, Canberra.

Department of Human Services 2008, *Victorian Population Health Survey 2007: selected findings*, Rural and Regional Health and Aged Care Services, Victorian Department of Human Services, Melbourne.

Dowd SM, Vickers KS & Krahn D 2004, 'Exercise for depression: it really does help – here's how to get patients moving', *Current Psychiatry*, vol. 3, no. 6, pp. 10–20.

Eades G & Ager J 2008, 'Time being: difficulties in integrating arts in health', *The Journal of the Royal Society for the Promotion of Health*, vol. 128, no. 2, pp. 62–67.

Echeverria S, Diez-Roux AV, Shea S, Borrell LN & Jackson S 2008, 'Associations of neighborhood problems and neighborhood social cohesion with mental health and health behaviors: the multi-ethnic study of atherosclerosis', *Health and Place*, vol. 14, no. 4, pp. 853–865.

Effective Change 2006, *Partnership resource for community arts*, Victorian Health Promotion Foundation, Melbourne.

Ellaway A & Macintyre S 2007, 'Is social participation associated with cardiovascular disease risk factors?', *Social Science and Medicine*, vol. 64, pp. 1384–1391.

Fone D, Dunstan F, Lloyd K, Williams G, Watkins J & Palmer S 2007, 'Does social cohesion modify the association between area income deprivation and mental health? A multilevel analysis', *International Journal of Epidemiology*, vol. 36, no. 2, pp. 338–345.

Fowler JH & Christakis NA 2008, 'Dynamic spread of happiness in a large social network: longitudinal analysis over 20 years in the Framingham Heart Study', *British Medical Journal*, vol. 337, pp. a2338.

Granovetter M 1973, 'The strength of weak ties', *American Journal of Sociology*, vol. 78, no. 6, pp. 1360–1380.

Greiner KA, Li C, Kawachi I, Hunt DC & Ahluwalia JS 2004, 'The relationships of social participation and community ratings to health and health behaviors in areas with high and low population density', *Social Science and Medicine*, vol. 59, no. 11, pp. 2303–2312.

Hall-Lande JA, Eisenberg ME, Christenson SL & Neumark-Sztainer D 2007, Social isolation, psychological health, and protective factors in adolescence', *Adolescence*, vol. 42, no. 166, pp. 265–286.

Hawe P & Shiell A 2000, 'Social capital and health promotion: a review', *Social Science and Medicine*, vol. 51, no. 6, pp. 871–885.

Heikkinen R & Kauppinen M 2004, 'Depressive symptoms in late life: a 10-year follow-up', *Archives of Gerontology and Geriatrics*, vol. 38, no. 3, pp. 239–250.

Holt-Lunstad J, Smith TB & Layton JB 2010, 'Social relationships and mortality risk: a meta-analytic review', *PLoS Medicine*, vol. 7, no. 7, pp. 1–20.

House J 1981, *Work, stress and social support*, Addison-Wesley Publishing Company, Massachusetts.

Israel B, Farquhar SA, Schulz AJ, James AS & Parker EA 2002, 'The relations between social support, stress and health among women on Detroit's East Side', *Health Education and Behavior*, vol. 29, no. 3, pp. 342–360.

Jehoel-Gibsbers G 2004, *Social exclusion in the Netherlands: summary*, The Netherlands Institute for Social Research, accessed 23 February 2010, www.scp.nl/english/Publications/Summaries/Summaries_2004/Social_exclusion_in_the_Netherlands

Kawachi I & Berkman L 2000, 'Social cohesion, social capital, and health', in LF Berkman & I Kawachi (eds), *Social epidemiology*, Oxford University Press, New York, pp. 174–190.

Kawachi I & Berkman LF 2001, 'Social ties and mental health', *Journal of Urban Health*, vol. 78, no. 3, pp. 458–461.

Kim D, Subramanian SV & Kawachi I 2006, 'Bonding versus bridging social capital and their associations with self-rated health: a multilevel analysis of 40 US communities', *Journal of Epidemiology and Community Health*, vol. 60, pp. 16–122.

Lochner K, Kawachi I, Brennan RT & Buka SL 2003, 'Social capital and neighborhood mortality rates in Chicago', *Social Science and Medicine*, vol. 56, pp. 1797–1805.

Matarasso F 1996, *Northern lights: the social impact of the Feisean (Gaelic Festivals)*, Comedia, United Kingdom.

Matarasso F 1997, *Use or ornament: the social impact of participation in the arts*, Comedia, United Kingdom.

McCarthy K, Ondaatje E, Zakaras L & Brooks A 2004, *Gifts of the muse: refining the debate about the benefits of the arts*, RAND, Santa Monica.

McDonald L 2008, 'Under the bridges: a community narrative on the impact of DADA's Freight Gallery', in A Lewis (ed.), *Proving the practice: evidencing the effects of community arts programs on mental health*, DADA, Western Australia.

McQueen-Thomson D, James P & Ziaguras C 2004, *Promoting mental health and wellbeing through community and cultural development: a review of literature focusing on community festivals and celebrations*, Victorian Health Promotion Foundation, Melbourne.

Mellor D, Hayashi Y, Stokes M, Firth L, Lake L, Staples M, Chamber S & Cummins R 2009, 'Volunteering and its relationship with personal and neighborhood well-being', *Nonprofit and Voluntary Sector Quarterly*, vol. 38, no. 1, pp. 144–159.

Mendes de Leon CK, Cagney J, Bienias L, Barnes K, Skarupski P & Scherr Evans D 2009, 'Neighborhood social cohesion and disorder in relation to walking in community-dwelling older adults: a multilevel analysis', *Journal of Aging and Health*, vol. 21, no. 1, pp. 155–171.

Moore S, Daniel M, Paquet C, Dube L & Gauvin L 2009, 'Association of individual network social capital with abdominal adiposity, overweight and obesity', *Journal of Public Health*, vol. 31, no. 1, pp. 175–183.

Morrow-Howell N, Hinterlong J, Rozario PA & Tang F 2003, 'Effects of volunteering on the well-being of older adults', *The Journals of Gerontology Series B, Psychological sciences and social sciences*, vol. 58, no. 3, pp. 137–145.

Musick MA & Wilson J 2003, 'Volunteering and depression: the role of psychological and social resources in different age groups', *Social Science and Medicine*, vol. 56, no. 2, pp. 259–269.

National Institute for Health and Clinical Excellence 2008, *Community engagement to improve health: NICE public health guidance 8*, NICE, accessed 14 April 2008, www.nice.org.uk/PH009

Neighbourhood Renewal Unit, Department of Human Services 2008, *Neighbourhood Renewal evaluation report 2008*, DHS, Victoria, accessed 23 February 2010, www.neighbourhoodrenewal.vic.gov.au/?a=346349

Nelson A & Arthur B 2003, 'Storytelling for empowerment: decreasing at-risk youths' alcohol and marijuana use', *The Journal of Primary Prevention*, vol. 24, no. 2, pp. 169–179.

Notara D 2008, *Understanding personal connectedness: young people, women and seniors*, CTN, Petersham, NSW.

Orth-Gomer K & Johnson JV 1987, 'Social network interaction and mortality', *Journal of Chronic Disease*, vol. 40, no. 10, pp. 949–957.

Phongsavan P, Chey T, Bauman A, Brooks R & Silove D 2006, 'Social capital, socio-economic status and psychological distress among Australian adults', *Social Science and Medicine*, vol. 63, no. 10, pp. 2546–2561.

Piliavin JA & Siegl E 2007, 'Health benefits of volunteering in the Wisconsin Longitudinal Study', *Journal of Health and Social Behavior*, vol. 48, no. 4, pp. 450–464.

Priest N, Waters E, McLean P & Webster K 2008, *Evidence of the links between social participation and mental health and wellbeing outcomes*, Victorian Health Promotion Foundation & McCaughey Centre: VicHealth Centre for the Promotion of Mental Health and Community Wellbeing, School of Population Health, University of Melbourne, Melbourne.

Robinson P, McIver S, Rumbold J, Rankin B, Hawkins R, Colliver B & Rumbold B 2008, 'OddSocks at the Melbourne Fringe Festival: a methods paper for using an art installation in promoting public health', *Australian and New Zealand Journal of Public Health*, vol. 32, no. 3, pp. 250–253.

Saunders P 2003, *Can social exclusion provide a new framework for measuring poverty? Social Policy Research Centre (SPRC) Discussion Paper 127*, Social Policy Research Centre, Sydney.

Spandler H 2007, 'From social exclusion to inclusion? A critique of the inclusion imperative in mental health', *Medical Sociology online*, vol. 2, no. 2, p. 3–16.

Sport England & Local Government Association 1999, *Best value through sport: the value of sport*, Sport England, London.

Sport and Recreation Victoria & Victorian Health Promotion Foundation 2002, *Victorian's participation in exercise, recreation and sport 2001–02*, Sport and Recreation Victoria, Melbourne.

Sports Matters Group & Public Policy Forum 2004, *Investing in Canada: fostering an agenda for citizen and community participation*, Sports Matters Group & Public Policy Forum, Canada.

Stafford M & McCarthy M 2006, 'Neighborhoods, housing and health', in M Marmot & R Wilkinson (eds), *Social determinants of health*, Oxford University Press, Oxford, pp. 297–317.

Stansfeld S 2006, 'Social support and social cohesion', in M Marmot & R Wilkinson (eds), *Social determinants of health*, Oxford University Press, Oxford, pp. 148–171.

Szreter S & Woolcock M 2004, 'Health by association? Social capital, social theory and the political economy of public health', *International Journal of Epidemiology*, vol. 33, no. 4, pp. 650–667.

Thomas J, Ewing S & Schiessl J 2008, *The internet in Australia, CCi Digital Futures report*, ARC Centre of Excellence for Creative Industries and Innovation, Swinburne University of Technology, Melbourne.

VicHealth 2002, *Promoting physical activity: VicHealth's investment plan 2002–2005*, Victorian Health Promotion Foundation, Melbourne.

VicHealth 2010, *VicHealth strategic framework 2009–2013: promoting health and preventing illness,* Victorian Health Promotion Foundation, Melbourne.

Viswanath K, Randolph Steele W & Finnegan JR Jr. 2006. 'Social capital and health: civic engagement, community size, and recall of health messages', *American Journal of Public Health*, vol. 96, no. 8, pp. 1456–1461.

Warr DJ 2005, 'Social networks in a 'discredited' neighbourhood', *Journal of Sociology*, vol. 41, no. 3, pp. 285–308.

White M 2008, 'Are we there yet? Towards an international exchange of practice in community-based arts in health', in A Lewis (ed.), *Proving the practice: evidencing the effects of community arts programs on mental health*, DADA, Western Australia.

Whiteford H, Cullen M & Baingana F 2005, 'Social capital and mental health', in H Herrman, S Saxena & R Moodie (eds) 2005, *Promoting mental health: concepts, emerging evidence, practice*, World Health Organization, Department of Mental Health and Substance Abuse in collaboration with the Victorian Health Promotion Foundation and The University of Melbourne, Geneva, pp. 70–80.

Zhang X, Norris SL, Gregg EW & Beckles G 2007, 'Social support and mortality among older persons with diabetes', *Diabetes Education*, vol. 33, no. 2, pp. 273–281.

Ziersch AM, Baum FE, Macdougall C & Putland C 2005, 'Neighbourhood life and social capital: the implications for health', *Social Science and Medicine*, vol. 60, no. 1, pp. 71–86.

Zubrick SR 2007, 'Commentary: area social cohesion, deprivation and mental health – does misery love company?', *International Journal of Epidemiology*, vol. 36, no. 2, pp. 345–347.