

# **Understanding of the Determinants of Rural Health**

**Nicki Welch, February 2000**

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**Paper by Ms Nicki Welch**  
**Toward An Understanding of the Determinants of Rural Health**  
**February 2000**

The health of rural Australians is an issue that has been gaining attention, both public and political, in recent times (Humphreys, 1998). Rural myths would have us believe that there are certain health benefits to living in the country but recent rural statistics show otherwise (Australian Institute of Health and Welfare (AIHW), 1998). People in rural and remote areas of Australia suffer a health differential that is skewed toward higher mortality and morbidity rates for some diseases, and increased incidence of certain diseases and rates of hospitalisation. (AIHW, 1998). "Living and working in the country, especially the most remote parts of Australia, is a health hazard. The air may be cleaner than in the cities, the roads emptier, the noise levels lower, but the living is hazardous, especially for young men" (National Rural Health Alliance (NRHA), 1998). This paper will define rural health and use recent data to illustrate specific health differences between rural and metropolitan Australia. It will canvas some popular explanations for the health differential and will suggest that more research needs to be undertaken on the psycho-social dimension.

### **Definitions of rural health**

Rural health research, and the measurement of the health status or health needs of a specific population of people is dependant upon how that population is defined (Humphreys, 1998). And yet defining 'rural' is fraught with difficulties, and, in the past, pursuing an exact definition of 'rural' has proved an elusive goal (Humphreys, 1998). This is partly due to the inconsistency in the purpose of defining areas geographically, and also due to the inherently changing nature of rural communities (Humphreys, 1991). Definitions in the past have covered a range from those describing rural negatively, as anything non-urban; to those that make an attempt to specify defining characteristics of rurality (Humphreys & Rolley, 1991), such as involvement in or service of the agricultural industry.

The implications of defining rurality are far-reaching. Economically, the way in which communities are defined affects the funding of health services, with different funding structures applied to metropolitan, rural and remote communities (Hegney, 1996). While the difficulties of giving a succinct definition of rural are acknowledged, for the purposes of this work, the Rural, Remote and Metropolitan Areas (RRMA) classification of rural and remote used by the Australian Institute of Health and Welfare (AIHW, 1998) are adhered to. Likewise, being healthy means different things to different people, and can be described in a number of ways. The broad World Health Organisation (WHO) definition of health includes physical, mental and social facets; a holistic definition that is used throughout the paper.

### **Specific rural health differences**

Health is generally thought of as a basic right for citizens (Humphreys & Rolley, 1991) yet there exists many inequalities in the levels of health experienced by a population,. This is particularly so of people living in rural areas (AIHW, 1998). The state of health in rural Australia has been referred to as a 'crisis' (Humphreys, 1998). Statistics show that the health of people in rural areas for some facets of health is

"substantially worse than for other Australians" (National Rural Health Policy Forum, 1999, p. ii).

Rural and remote populations in Australia have poorer health outcomes in some areas of health status than those in metropolitan areas (AIHW, 1998) and they spend more time in hospital for some causes of ill health (AIHW, 1998). In particular, rates of death by injury, road vehicle accidents, asthma, diabetes and infant mortality are notably higher than those experienced in metropolitan areas (AIHW, 1998). Higher rates of death are recorded for non-indigenous men in rural and remote areas (AIHW, 1998). Rates of injury are significantly different between metropolitan areas and rural and remote regions, with deaths per 100, 000 population rising from 53 in capital cities to 108.5 in other remote zones (AIHW, 1998, p. 17). Other rural areas experience male death rates for all causes of injury at 77.5 deaths per 100, 000 population (AIHW, 1998, p. 17). Female rates are markedly less overall, but still follow the trend of more deaths due to injury as the geographical spread of population gets wider (AIHW, 1998, p. 17). "Overall, the rates increase with increasing remoteness, suggesting that those living in rural and remote zones are at greater risk of death from injury than are those living in the metropolitan zone" (AIHW, 1998, p. 17).

The statistics for diabetes show significant differences between metropolitan and rural areas (AIHW, 1998). Hospitalisation data shows that both males and females living in remote zones, and males living in rural zones are hospitalised for diabetes twice as often as their metropolitan counterparts (AIHW, 1998). Females in rural zones have a rate of hospitalisation for diabetes that is 25% higher than females in metropolitan areas. Deaths due to asthma are similarly skewed, with deaths occurring at higher rates in remote zones than in rural zones, which are in turn also higher than metropolitan areas (AIHW, 1998). Suicide rates in Australia have remained relatively constant over the last one hundred years, but the highest rates of suicide are found in large rural centres and other remote areas (AIHW, 1998). Overall the statistics do not bode well for health in rural areas.

### **The Indigenous health differential**

A note needs to be made about the indigenous health differential. In general, the mortality of Indigenous Australians is significantly higher than in the non-Indigenous population (AIHW, 1998). Whilst in remote areas the Indigenous population forms a greater percentage of total population, and therefore influences the lower health status of remote areas, the Indigenous population is not large enough in metropolitan and rural zones to affect the health differential. The AIHW report (1998) states clearly that "the proportion of Indigenous people is not high enough in the rural zone to have an impact on differences in health status between people living in metropolitan and rural zones" (AIHW, 1998, p.ix).

### **Diversity of rurality**

Whilst Australia is one of the most highly urbanised countries in the world, the economy is still dependent, to some degree, on the rural sector (Humphreys & Rolley, 1991). One could quickly develop a picture of rural Australia as a homogenous mass of people, experiencing health and health care in a similar way. Nothing could be

further from the truth, and in fact, if rural Australia is characterised by one thing it is diversity. Fragar (1997) states with emphasis that rural Australia is NOT homogenous, and notes a state of continual change. Rural areas are "as diverse in their geography, economic activities, and socio-demographic composition as urban areas" (Humphreys & Rolley, 1991, p. 1). Diversity can also be recognised as an issue wider than geography, to include such things as gender. Men and women experience health and health care services differently (Huggins, 1997) and men's health issues have been recognised as a priority issue in rural health (AIHW, 1998; Huggins, 1997)..

### **Causes of the health differential**

Health inequity is due to a complex interplay of many factors; biological, genetic, behavioural, social, and economic (Harris, Sainsbury and Nutbeam, 1999). In the social determinants of health literature some consensus has emerged as to the causes of health differentials. In particular, the social and economic, health behaviour, physical environmental factors, health service access and utilisation are relevant to Australian health in general. Among the social structural factors which are receiving attention are socio-economic status, race and ethnicity, and gender. Location or place has been researched to a lesser degree, with implications for the rural-urban dimension to health inequalities. This paper explores the commonly cited factors that may contribute to the poorer health status of rural Australians, and goes on to suggest that psycho-social factors are of equal importance.

#### **Socio-economic status**

On such factor that effects health is socio-economic status. Turrell, Oldenburg, McGuffog & Dent (1999) note that "the evidence on socio-economic status and health in Australia is unequivocal: those who occupy positions at lower levels of the socioeconomic hierarchy fare significantly worse in terms of their health" (p. 33). It is difficult to compare rates of income across geographical boundaries, due to the different make-up of income between rural and metropolitan areas (Haberkorn, Hugo, Fisher & Aylward, 1999). However, Huggins (1997) stated that "low socio-economic status is the single best indicator of premature death amongst Australian males" and this is confirmed by Socio-Economic Indexes for Areas which generally show a pattern of increasing disadvantage as population density declines (AIHW, 1998). Difficult economic circumstances indisputably impact upon access to and demand for health services particularly rehabilitation services (Broughton, Fragar & Coleman, 1997). This is especially relevant during this era of economic downturn that rural areas have been subject to lately (Haberkorn et al, 1999; Humphreys, 1999).

#### **Environmental factors**

Both the greater exposure to injury and the poorer road quality in rural and remote areas possibly add to the rural health differential. Agriculture, as a singly rural industry, is one of the highest risk groups for occupational injury and disease (Parker, 1997) and the fact that farms are both homes and workplaces impacts upon these statistics (Parker, 1997; Wolfenden & Sanson- Fisher, 1993). Farms are known to be dangerous places to work (Wolfenden & Sanson- Fisher, 1993), with most agricultural mortality related to machinery (Wolfenden & Sanson- Fisher, 1993). Injury patterns tend to reflect the nature of employment, with dairy and beef farms characterised by animal related injury and sheep farms notable by higher rates of workshop related injury (Wolfenden & Sanson- Fisher, 1993). Both the farming

environment itself, and the diversity of production processes that are carried out daily on farms, contributes to the high rate of injury (Broughton, Fragar & Coleman, 1997). Other causal factors of the high rates of injury are the wide spread use of heavy machinery, interaction with animals, and isolation (NRHA, 1998). Transport injury rates, particularly amongst young men, are significantly higher in rural and remote areas than they are in the city. An NHMRC report claims it is "almost certainly due to a combination of factors including exposure to travel, patterns of alcohol use, conditions of motor vehicles, seat belt use and access to emergency medical services. It may also be due to less deterrents in the form of lower levels of policing on country roads to check on speeding and drink driving" (NRHA, 1998).

Difficulties of access to transport and quality of roading are also issues in gaining access to healthcare services. Bond (1993) noted the difficulties in utilising services in rural and remote areas, due to poor quality roading and the added expense of travel because of the high cost of petrol. The lack of transport makes accessing services a major barrier (Humphreys, 1998). The Isolated Travel Allowance partly helps by reimbursing partial costs of utilising a service that is not provided locally, but the reality is that the allowance falls far short of the true cost of taking time off work and the associated social costs (Reid & Solomon, 1992, cited in AIHW, 1998).

While the high rate of injury in rural and remote areas is partly due to environmental factors, behavioural factors also play a role. A contributing factor in the high rate of injuries suffered by rural males is acknowledged as risk-taking behaviour, which in turn affects their driving. "Sensation seeking and aggression have been found to be the main reasons adolescent men drive recklessly" (NHRA, 1998). Injury rates on farms are not helped by rural culture either. "Many farms also place a low priority on safety measures, or may not be able to afford to put them in place" (NHRA, 1996). This leads into risky health behaviours in general, and how they contribute to the rural health differential.

### **Risky health behaviours**

While the AIHW (1998) does not mention behavioural factors in the discussion of causality of the rural health differential, anecdotal evidence suggests that it is a major factor. An attitude is prevalent in rural areas that may not encourage preventative health behaviours, and may in fact tolerate smoking, excessive drinking and associated risk taking behaviours (National Rural Health Policy Forum, 1999). The rural Australian 'personality' is part of a culture of self-reliance and independence (Stevens, 1998) and this may affect service utilisation. Attitudes that emphasise the need to maintain the ability to perform one's role, and stoicism toward adversity, are common in rural communities (Elliott-Schmidt & Strong, 1997). They are explained by Gregory (1979, cited in Humphreys & Rolley, 1991) as 'farming attitudes' that affect health status. Regardless of involvement in the agricultural industry, attitudes such as self-reliance, independence and a reluctance to seek help, are displayed by residents of rural communities.

### **Access to services**

The reality of living in rural and remote areas of Australia is that there is less access to health care services (AIHW, 1998). Indicators of health services are hospital

services, health expenditure and health personnel (AIHW, 1998). Rural communities depend on health services both for care and employment (Humphreys & Rolley, 1991), but geographic isolation and problems with access to and shortage of providers and services is a longstanding problem. Small, sparsely distributed populations bring into question equitable distribution of services, and service providers training needs are sometimes compromised by the need to provide ongoing optimal service. Specifically, a shortage of services was identified in research by Auon, (1997) as a barrier to mental health of rural dwellers, while Theil (1998) recognised the lack of services available in rural areas to respond to domestic violence as one of the major issues that needed to be addressed. The causal factors giving rise to the high rate of asthma prevalence in rural areas are presumed to include "access to and quality of health care services, availability of adequate management care plans and appropriate diets" (AIHW, 1998, p. 36).

In addition, there appear to be cultural aspects to remoteness of access to health service. Cultural access describes, among other things, access to user friendly and culturally appropriate services; covering such issues as access to same gender health care providers and an assurance of confidentiality. Belleair (1991) notes that we have yet to agree upon a definition of rural and remote, adding that urban people can be remote if cultural access is denied.

A difficulty in meeting the health care service needs of people in rural areas is their high expectations of what a health service should comprise. These expectations appear to be media driven (Humphreys, 1998) and have, in some cases, been fuelled by rural health policies that promote doctor shortages and hospital closures as the only concern for rural health (Keleher, 1999).

While neither denying nor minimising the difficulties rural people face gaining access to health services, it is recognised that it is possible to be healthy without extensive access to health services. The health inequalities experienced by people in rural areas cannot be wholly explained simply by the fact that they have less access to health services. Research carried out by the Australian Institute of Health and Welfare notes that the supply of doctors in Japan is far less than in Australia, yet life expectancy is far better (AIHW, 1998). Geographical distance to a practitioner has found to be neither the sole, nor the most important determinant of choice of general practice care (Humphreys, Mathews-Cowey & Weinard, 1997). Issues of uneven access to medical care services as a causal factor of health inequalities has been discounted (Baum, 1998), which would imply that perhaps rural areas need to maintain a certain level of service, beyond which solutions to the problems of rural health are found elsewhere.

## **The neglected psychosocial dimensions as they affect rural health**

### **Concepts of health as they impact upon health service utilisation**

Attitudes toward health and wellness may differ between rural and urban dwellers (Elliott-Schmidt & Strong, 1997) and this can be seen as having an impact on health statistics that are measured across Australia. People in rural areas commonly describe health in the negative, as an absence of disease (Humphreys & Rolley, 1991), and tend to take it for granted (Humphreys, 1998). The definition of health becomes relevant when providing health care to maintain a healthy society. If one understands

health to be an absence of disease, it upholds the main health concern to be the cure of illness, as opposed to the maintenance of good health. Therefore curative treatment becomes the focus of a health care system (Humphreys, Mathews-Cowey & Weinand, 1997) and money is spent on acute and chronic disease management as opposed to primary care and health promotion (Coster & Gribben, 1999).

These attitudes are exemplified by oral rural health research. In particular, research by Brennan, Spencer and Szuster (1998) showed that dental care received by metropolitan patients was preventative and maintenance, as opposed to non-metropolitan patients, whose teeth were replaced by dentures. This would appear to support research by Elliott-Schmidt & Strong (1997) which found rural people placed less emphasis on cosmetic and appearance medicine, but is also indicative of the relative lack of access to dental services. Aged people in rural areas were found to make use of dental services on an ad hoc basis, and often for pain relief only (Short & Patterson, 1994). Rural children's visits to dentists were at a comparable level to metropolitan children, but male adults from rural and remote areas visited the dentist less often than their metropolitan counterparts. (AIHW, 1998). Avoiding the dentist was often put down to "financial burden" (AIHW, 1998, p. 76), providing evidence for the complex interplay of causal factors that drive rural health inequities.

Individual definitions of health and wellness are also issues that affect utilisation of health care services. Humphreys and Rolley (1991) state that "the potential consumer's willingness to seek care depends, in part, on an individual's attitude towards health, knowledge about health care, learned definitions of illness (social and cultural), and perceptions of need for health care service" (p. 61). Rural people have been specifically identified as having a perception of health and well being that is different to metropolitan dwellers. Well being is often linked to productivity (Elliott-Schmidt & Strong, 1997; Weinert & Long, 1987) and sickness and pain are de-emphasised, while importance is attached to being able to carry out daily tasks. The response of people in rural areas to illness is dependant upon the effects that it has on productivity (Elliott-Schmidt & Strong, 1997) and illness is ignored or tolerated despite discomfort or risk (Rosenblatt & Anderson, 1981). Rather than concerns over pain or cosmetic attractiveness, Elliott-Schmidt and Strong (1997) found that "maintaining performance or productivity, despite adversity, is an important concept for well-being amongst rural dwellers" (p. 63). Rural dental health data indicates that rural people are more likely to seek dental treatment for problems, rather than check-ups (Stewart, Carter and Brennan, 1998). Medicare data indicates that rural people utilise health services less than people in metropolitan areas do (AIHW, 1998). The question of whether this is solely because of a lack of quality services or because of other behavioural factors that inhibit utilisation is yet to be answered..

### **Social capital**

One idea that has been explored as a possible way of addressing the problems of a health differential in rural areas is that of improving social capital. (Strasser, Worley, Hays & Togno, 1999). Social capital is a term that is becoming prolific in the literature (Braun, 1999, 1999a; Astone, Nathanson, Schoen & Kim, 1999). This does not mean that the term is not used in a contradictory way, nor that all researchers agree on a precise definition (Leana & Van Buren, 1999). One way of describing social capital is to refer to "the resources that emerge from one's social ties" (Portes &

Landolt, 1996, cited in Astone et al, 1999). In Australia, Eva Cox has promoted social capital as a remedy to public policy's emphasis on market control through the Australian Broadcasting Corporation's Boyer Lecture Series (Baum, 1999a; Cox, 1995). Despite wide usage, the concept is still not without debate (Baum, 1999a). Yet the commonalities indicate that social capital is made up of "social and civic trust, thick and thin or embedded and autonomous networks and the encouragement of co-ordination and co-operation for mutual benefit" (Baum, 1999, p. 2). It reflects "a collective dimension of society external to the individual" (Lochner, Kawachi & Kennedy, 1999, p. 259). Social capital is defined by the World bank as the "norms and social relations embedded in the social structures of societies that enable people to coordinate action to achieve desired goals" (World Bank website). It is a concept that finds favour across political and ideological boundaries.

The role of social capital in creating and maintaining healthy communities is one that deserves attention (Baum, 1998). Empirical studies suggest that social capital may be a mediating factor in the effects of health promotion programmes (Kreuter, Young, & Lezin, 1998). The realisation that the outcomes of health promotion programmes have limited outcomes in areas of low socioeconomic status (Baum, 1999a; Raeburn & Beaglehole, 1989) has bought with it the recognition of the possible role of building and strengthening community capacity to increase effectiveness of health promotion programmes (Kreuter et al, 1998). Social capital is not only relevant to health on a micro level, affecting individual health outcomes, but also at the level of population health (Baum, 1998). Research by Kawachi and Kennedy et al (1996) indicated that lower levels of social capital in a society is one of the reasons income inequality leads to increased mortality.

How does this relate to rural communities who suffer health problems at a higher rate than their relations in urban areas do? Baum, (1999) argues that a "crucial aspect of the creation of healthy communities lies in achieving a balance between economic and social factors in public policy" (p. 1) and that "equity and fairness cannot be left to the market" (p. 9). She encourages discussion over issues of equitable distribution of resources, and government support of communities, despite economic decline.

### **Social support**

Social support is one aspect of social capital that has been shown empirically to be linked to health status. Social support networks are an important feature of social capital (Kreuter et al, 1998). Social support has long been seen as a predictor of health status (Hemmingway & Marmot, 1999), and some would say that maintaining a network of social support is one of the "single most powerful phenomena in health promotion" (Rosenfeld, 1997, p. 3). Research has shown that social networks, including marriage, family and group involvement, are linked to mortality and incidence of specific disease, both at an individual level and a community level (Kreuter et al, 1998). Whilst evidence is still to be explicated as to the effect of social support, studies have consistently shown that low social support predicts mortality (Hemmingway & Marmot, 1999) and the correlation between social support and health status is widely accepted (Rosenfeld, 1997).

Social support can be defined as a social resource provided by another person, or the degree to which the comfort and esteem needs of a person are met (Rosenfeld, 1997;

Sarafino, 1998). Such support can come from a variety of sources, including family, friends, workmates, the family doctor, or community organisations (Sarafino, 1998). Social support can be specified into the particular needs that it may meet, such as emotional support, esteem support, tangible assistance, information and network support (Sarafino, 1998).

Social support can modify the effects of stress and ill health upon an individual (Sarafino, 1998), and can in fact benefit health (Rosenfeld, 1997). A well-known study by Berkman and Syme (1979) demonstrates the benefits of social support to health status. Based in Alameda County, California, Berkman and Syme randomly sampled 6928 adults and followed up the study nine years later. Their findings indicated that people with who lack ties to the community were more likely to die than those with social support networks were (Rosenfeld, 1997). For each age category sampled subjects with minimal contact with friends and family had a higher rate of mortality (Sarafino, 1998).

Receiving and accessing social support tends to have gender differences. Some research shows that women receive more social support from their female friends than from their partners (Sarafino, 1998), and that women access more formal support such as counselling services than men (Rosenfeld, 1997).

How exactly does social support influence health? Two theories have been proposed – the 'buffering' hypothesis, and the 'direct effects' hypothesis (Sarafino, 1998). The buffering hypothesis supposes that social support protects people against ill health, either by the person assuming that the situation will not affect them too badly, or by them modifying their response to a stressful situation. According to the direct effects hypothesis, social support may be beneficial to health and thereby making individuals resitant to illness. Furthermore, it is suggested that individuals with high levels of social support will live a healthier lifestyle (Sarafino, 1998).

As is the case with social capital, the literature that translates social support theory into practice that addresses and seeks to remedy deficits in social support is under-represented (Rosenfeld, 1997). Self-help groups are seen as a cost-effective psychosocial intervention that can change the structure of people's social networks (Rosenfeld, 1997) as are social support groups.

Cultural appropriateness is an issue that interventions to improve social support need to address, and one relevant to rural health. It is important that the background of the potential consumers and their ethical and value systems are taken into account (Rosenfeld, 1997), a point that Elliot-Schmidt and Strong (1997) make in relation to the importance of health service providers in rural areas understanding such differences. The concept of social support does have a negative side. Whist rural communities are often known for their high levels of cohesive community support, this can be reflected in a negative way. "Strong social rules exist which both limit people's behaviour and close off opportunities for support" (Stevens, 1998). In illustration of this point, Brown, Young and Byles (1999) describe difficulties with health service providers being personally known by the consumer, while Warr & Hillier (1997) identify privacy issues over accessing adolescent sexual information in a small town.

However, social support can be seen as a valuable tool to build social capital, and to possibly improve the health of both individuals and communities .

### **Improving rural health (Conclusion)**

A number of issues have been raised with regard to the current status of health experienced by people in rural and remote areas. The issues highlight the importance of adequately resourced ongoing research, appropriate rural health policy, and the recognition of the diversity of rurality.

Neither definitions of rural health nor solutions to the problems of rurality are made with ease. As Keleher (1999) noted, "the [rural health] debate is so heavily politicised and dominated by the discourse of curative services that any coherent vision for the health and social futures of non-urban Australia is obscured" (p. 342). The call for establishing a set of benchmarks against which urban – rural differentials in health status can be monitored is imperative (Humphreys, 1999). Other researchers see the need for more research into definitions of health, specifically how certain groups, such as youth, define health (Wyn, Stokes & Stafford, 1997). Calls have been made for the rural health debate to be 'reframed' within a holistic view, to include different ways of looking at matters of development, sustainability and planning (Keleher, 1999). Policy needs to take notice of the way that rural people define health to achieve optimal outcomes (Jones, 1996). As well as this, the issue of rural health policy being devised by people with limited rural knowledge needs to be addressed. Currently, the vast majority of administrative and planning decisions that affect rural people are made by people in urban areas with little, or no direct experience of conditions in the country (Strasser, Harvey, & Burley, 1994;Stevens, 1998,).

One of the challenges that the national health care system faces is to meet the diverse needs of rural Australia. "Rural Australia is characterised by extraordinary diversity, and this is one of the lasting challenges to be met in the design of health services" (National Rural Health Alliance (NHRA), 1996). This observation evokes the questioning of the effectiveness of health services that are often structured according to city needs. Rural areas have a diversity of health service requirements, and such diversity requires an equally diverse range of services to meet its needs (Humphreys & Rolley, 1991).

The issue of diversity is complex, for it not only means difference between rural and urban areas, but also difference within rural areas. The implications for health care services are similar - "not only do rural service models need to be different on many occasions to city models; they also need to be different from one area to another" (NRHA, 1996). Research illustrates the inadequacy of blanket health policies in dealing with the diverse nature of rural Australia (Coakes & Kelly, 1997). Injury research by Wolfenden and Sanson- Fisher (1993) identified the need for industry based approaches to injury prevention, due to the nature of different patterns on different types of farms. Overall, solutions to the problems will need to be diverse.

## References

Astone, N. M., Nathanson, C.A., Schoen, R., Kim, Y.J. (1999). 'Family demography, social theory, and investment in social capital' in *Population and Development Review*, 25(1):1-31.

Auon, A.(1997). 'General practitioner's needs and perceptions in rural mental health care' *The Australian Journal of Rural Health*, Volume 5 Number 2, May 1997.

Australian Institute of Health and Welfare (1998). AIHW Cat. No. PHE 6, "Health in rural and remote Australia," Canberra: AIHW.

Brown, W.J., Young, A.F. & Byles, J.E. (1999). Tryanny of distance? The health of mid-age women living in five geographical areas of Australia. *Australian Journal of Rural Health*, 7, 148 – 154.

Baum, F. (1999). 'Social capital and health: Implications for health in rural Australia'. Paper given at the 5th National Rural Health Conference, Adelaide, South Australia, 14 – 17th March, 1999.

Baum, F. (1999a). 'The role of social capital in health promotion: Australian perspectives'. Paper submitted to the *Health Promotion Journal of Australia*.

Baum, F. (1998). 'The new public health: An Australian perspective' Oxford University Press.

Bellar, S (1991) The Role of ATSIC in the National Aboriginal Health Strategy, 1st National Rural Health Conference Toowoomba 14th - 16th February 1991, Proceedings

Coster, G. & Gribben, B. (1999) Primary Care Models for delivering population based health outcomes Discussion paper for the National Health Committee August 1999. Available on-line <http://www.nhc.govt.nz/pub/phc/phcmodels.html>

Coakes, S.J., & Kelly, G.J. (1997) 'Community competence and empowerment: Strategies for rural change in women's health service planning and delivery' in "The Australian Journal of Rural Health," Volume 5 Number 1, February 1997

Cox, E. (1995). 'A Truly Civil Society'. Australian Broadcasting Corporation, Sydney.

Elliot-Schmidt and Strong (1997) 'The concept of well-being in a rural setting: Understanding health and illness' in "Australian Journal of Rural Health," 5, 59-63.

Fragar, L. (1997). 'A Picture of Health?' National Rural Public Health Forum, 12- 15 October 1997, Proceedings.

Haberkorn, G., Hugo, G., Fisher, M., & Aylward, R. (1999) "Country Matters: Social Atlas of Rural and Regional Australia," Bureau of Rural Sciences, Commonwealth of Australia, Canberra.

Hegney, D. (1996) Rural Nursing: A Definition. 3rd Biennial Australian Rural and Remote Health Scientific Conference, Toowoomba, Queensland, 8- 9 August 1996, proceedings

Hemmingway, H. & Marmot, M. (1999). 'Psychosocial factors in the aetiology and prognosis of coronary heart disease: systematic review of prospective cohort studies' in British Medical Journal, Vol. 318, 29 May, 1999, p. 1460 – 1467.

Huggins, A.K. (1997). Men's health in rural Australia: Death, injury and illness by socialisation and location'. National Rural Public Health Forum, 12- 15 October 1997,

### **Papers.**

Humphreys, J.S. (1999). 'Past Conferences, Future Strategies' Address given to 5th National Rural Health Conference, Adelaide, South Australia, 14th – 17th March, 1999.

Humphreys, J.S. (1998) 'Rural health and the health of rural communities' "Worner lecture series" [online]. Available  
<http://www.bendigo.latrobe.edu.au/rahdo/research/worner98.html>

Humphreys, J. S. (1998) 'Delimiting 'rural': implications of an agreed 'rurality' index for health care planning and resource allocation' in "The Australian Journal of Health" Volume 6 Number 4, November 1998

Humphreys, J.S., Mathews-Cowey, S., & Weinand, H.C. (1997) Factors in accessibility of general practice in rural Australia "Medical Journal of Australia Vol 166," 2 June.

Humphreys, J. S. and Rolley, F. (1991). Health and health care in rural Australia: a literature review. Armidale: University of New England.

Jones, J (1996) Understandings of health: the Background to a study of rural men's perceptions of health. 3rd Biennial Australian Rural and Remote Health Scientific Conference, Toowoomba, Queensland, 8- 9 August 1996, proceedings

Keleher, H. (1999) 'Rural public health matters' in "Australian and New Zealand Journal of Public Health," 23, 4. p. 342.

Kreuter, M.W., Young, L.A., and Lezin, N.A. (1998) Measuring social capital in small communities. Health 2000 Inc., Atlanta.

Leana, C.R. and Van Buren, H.J. (1999). 'Organizational social capital and employment practices' in Academy of Management Review, Vol. 24, No. 3: 538-555.

Lochner, K., Kawachi, I. & Kennedy, B.P. (1999). "Social capital: A guide to its measurement' in Health & Place, 5: 259-270.

National Rural Health Policy Forum (1999). Healthy Horizons: A Framework for improving the health of rural, regional and remote Australians.

National Rural Health Alliance (1996). *The Journey to Rural Health: A July Journal*. Canberra.

National Rural Health Alliance (1998). *Rural Health Information Paper No: 4 "Drugs and Alcohol in Rural Australia"* August 1998.

Raeburn, J. & Beaglehole, R. (1989). Health promotion: How can it redress the health effects of social disadvantage? *"Community Health Studies,"* Vol XIII, No. 3, 289 – 293.

Rosenblatt, P.C. & Anderson, R.M. (1981) 'Interaction in farm families: Tension and stress.' In Coward, R.T. and Smith, W.M. *"The family in rural society"* Westview Press Inc., Colorado, USA

Rosenfeld, E. (1997). "Social support and health status: A literature review" South Australian Community Health Research Unit, Adelaide, Australia.

Sarafino, E.P. (1998) *"Health psychology: Biopsychosocial interactions."* John Wiley and Sons, New York.

Short, L. & Patterson, A. (1994) 'Strategies to improve equity in oral health care for the rural aged' in *"Proceedings of the 2nd Biennial Australian Rural and Remote Health Scientific Conference,"* 1994 August; Toowoomba, Queensland. Bailey, J. & du Plessis, D. (eds)

Stevens, S (1998) 'Nursing culture, bush culture: Change and survival' *Proceedings, 4th Biennial Australian Rural and Remote Health Scientific Conference, Toowoomba, Queensland, 27-28 August 1998.*

Stewart, J.F., Carter, K.D. and Brennan, D.S. (1998). "Adult Access to Dental Care: Rural and Remote Dwellers" Australian Institute of Health and Welfare, Catalogue No. DEN 41.

Turrell, G., Oldenburg, B., McGuffog, I., Dent, R. (1999) "Socioeconomic determinants of health: Towards a national research program and a policy and intervention agenda." Queensland University of Technology, School of Public Health, Ausinfo, Canberra.

Warr, D. & Hillier, L. (1997). That's the problem with living in a small town: Privacy and sexual health issues for young rural people. *Aust. J. Rural Health* (1997) 5, 132-139.

Weinert, C., & Long, K. A. (1987). Understanding the health care needs of rural families. *Family Relations*, 36, 450-455.

Wyn, J., Stokes, H., Stafford, J. (1997) 'Challenges and Resilience Factors For Young People Living in Rural Australia in the 1990s'. *National Rural Public Health Forum 12- 15 October 1997, Proceedings*