The Australian Standard Geographical Classification – Remoteness Areas (ASGC-RA) is a geographic classification system that was developed by the Australian Bureau of Statistics (ABS) in 2001, that is a statistical geography structure used to make quantitative comparisons between ‘city’ and ‘country’ in Australia. Based on data from census Collection Districts (CDs), the ASGC-RA classifies these CDs into broader geographical categories, known as Remoteness Areas (RAs). Remoteness refers to the physical distance of a location from the nearest Urban Centre (access to goods and services) based on size of the population. (Australian Government, Department of Health). Using a public health approach, the implications of remoteness for the health of the community of Alice Springs, which has a ‘remote’ RA category, will be discussed, taking the social determinants of health into consideration. The strengths and weaknesses of the health promotion initiative Healthy School-Age Kids (HSAK), which is implemented in Alice Springs, will also be discussed (Department of Health and Community Services, 2007).

Alice Springs has a population of 28,667 people, and Aboriginal Australians make up a large portion of this population - 18.8%. There is only one hospital in Alice Springs (ABS, 2006), and also a high prevalence of chronic health conditions at young ages in the Aboriginal populations of remote regions in Northern Territory (NT) such as Alice Springs. It has been reported that by fifteen years of age, 8.6% of this population have renal disease, 0.4% have type 2 diabetes, and 0.3% have ischaemic heart disease, with obesity being an important risk factor. As a result of this, the burden of disease is nearly four times higher for Aboriginals living in NT than it is for all Australians (Zhao, Connors, Wright, Guthridge, & Bailey, 2008). The health of people living in rural and remote areas such as Alice Springs is generally lower than for those living in major cities. They tend to live shorter lives and experience higher levels of illness and disease, with Aboriginal Australians dying approximately 20 years earlier than non-aboriginal Australians (Australian Institute of Health and Welfare, 2011).

These health disadvantages can be explained by the social determinants of health. The World Health Organization (WHO) describes the social determinants of health as the circumstances in which people are born, grow, live, work and age. These circumstances are defined by the distribution of money, power and resources at global, national and local levels. The social determinants of health are the main cause of health inequities, which are the unfair and avoidable differences in health seen between and within countries (WHO, 2010).

Some significant social determinants of Aboriginal health in remote Australian communities such as Alice Springs include the lack of equal access to primary health care and the lower quality of health infrastructure, such as housing, food, safe drinking water and effective sewerage systems and rubbish collection services. Aboriginal Australians also experience a socioeconomic disadvantage compared to non-Aboriginal Australians. The 2001 National Census reported that the gross household income for Aboriginal Australians was 62% of the rate for non-Aboriginal Australians. The unemployment rate was also three times higher for Aboriginal Australians, and Aboriginal students were half as likely to continue school to year twelve (ABS, 2001). These determinants lead to poorer health outcomes for Aboriginal Australians in Alice Springs compared to non-Aboriginal Australians. Poor education and literacy lead to poor health outcomes, as it leads to a lower socioeconomic status, and poor income makes healthcare services and medicines less accessible. Overcrowded, unsanitary housing also contributes to poverty and the spread of communicable diseases. Smoking and other high-risk behaviours are also associated with lower socioeconomic status, and also lead to poor health outcomes (Wilkinson & Marmot, 2003).

Although people living in remote areas generally experience lower levels of health, the aspect of culture is a potential benefit of rural health, particularly within Aboriginal communities of Australia such as Alice Springs. Aboriginal Australians highly value social relationships, their physical and emotional bonds to the country, and the connection to the spirit of their ancestors (Lohoar, Butera, & Kennedy, 2011). Aboriginal culture thus revolves around a ‘collectivist’ kinship, which means that people identify themselves through their relations with other people, their community, and their culture. As a result, Aboriginal Australians care for and protect their family and community members, bringing them closer together (Yeo, 2003). Strong social networks can enhance health through providing emotional and material support, and access to health information. It also results in less risky health behaviour (Kawachi & Berkman, 2001), benefiting the health of Aboriginals in Alice Springs.

The HSAK program is a joint health promotion initiative of the Department of Health and Community Services and the Department of Employment, Education and Training for school-age children in remote regions of the Northern Territory. The program is part of the health promoting school (HPS) model, which primarily aims to assure children are healthy so that they can learn to the best of their ability. This is achieved by the joint collaboration of health and education staff working with children, families and community members for health promotion, education and provision of health services. In this program, children learn the traditional and western ways of how to stay healthy and prevent sickness, and the targets for health promotion include injury prevention, behaviour problems, mental health, smoking, substance misuse, nutrition, hygiene, sexuality education, physical activity and sport. The program also addresses health problems at school such as hunger and anaemia to improve general health, classroom behaviour and school attendance, which in turn improves the level of general education. Another aspect of this program is the school-aged health check, which is a screening process for health problems or risk factors for adult health problems in children. This aims to prevent adult health problems such as diabetes, high blood pressure and kidney disease, as these often start in childhood (Department of Health and Community Services, 2007).

The HSAK has a number of strengths and weaknesses. One strength of the HSAK is that it targets the health of children, as the WHO highlights the importance of childhood experiences on health later in life. This is because many non-communicable diseases, mental disorders, and injuries can be prevented when they are targeted in childhood and adolescence, and also because healthy children obtain better educational outcomes, which results in better health outcomes, as previously discussed (Suhrcke, De Paz Nieves, 2011). Another strength of the HSAK is that it is part of the HPS model, which has evidence to support its efficacy in improving health outcomes. Evidence suggests that the way a school is managed, the experiences of the students and the way they are treated by teachers can develop many protective factors for health and reduce high-risk health behaviours. This is most effective when HPS programs are involved and innovative in many domains, involving the curriculum, the school environment, and the community (WHO, 2006). This is a strength of the HSAK, as it is implemented in schools and applies the Ottawa Charter action areas to health promotion, which emphasize strengthening community action and creating supportive environments. As a result, it engages members of the local community, and also implements health promotion in the curriculum and influences the physical school environment.

Research also suggests that adults who undertook school-based physical activity are significantly more active as adults than those who did not. The HPS model has also been shown to be more effective at addressing the issue of physical activity than the curriculum-based approach, and as a result, addressing the overweight/obesity issue. Evidence suggests that school is also an effective environment to promote healthy eating, as students consume over one-third of their daily energy intake at school, and a framework approach such as HPS appears to work best (Bell & Swinburn, 2004). This provides support for the efficacy of the HSAK, as it addresses the issues of physical activity and healthy eating in the school environment of remote communities such as Alice Springs, leading to better health outcomes. A recent systematic review of the effectiveness of the HPS model also found that it was effective at reducing BMI and increasing physical activity, as well as reducing smoking, however, a weakness was that no evidence suggested that it was effective at reducing alcohol use, fat intake, drug use, violence, depression, or bullying of others (Langford et al., 2015).

Another weakness of the HSAK is that some aspects of the school-aged health check do not have a good evidence base for their efficacy. A systematic review of the evidence for the efficacy of child health screening by the National Health and Medical Research Council (NMHCR) found that very few health issues could be recommended for screening. It found that stand-alone measures of height and weight are useful when calculating body mass index (BMI), which is a typical estimate of overweightness and obesity, however, this measure did not appear to result in health benefits. There was also no evidence that screening for visual impairment leads to improved visual acuity, compared with no screening, and insufficient evidence to recommend oral health screening (Oberklaid, Wake, Harris, Hesketh, & Wright, 2002). However, it found that screening for eye infections such as trachoma was effective in Aboriginal communities of Australia such as Alice Springs, and pneumatic otoscopy was effective at identifying otitis media in Aboriginal Australian children (Oberklaid, Wake, Harris, Hesketh). These are also strengths of the HSAK, as the school-aged health check screens for these issues.

Another potential weakness of the HSAK is that it teaches Aboriginal Australian children the traditional and Western ways of staying healthy and preventing sickness, while failing to take into consideration the potential differing cultural practices of health found in remote Aboriginal communities. Communities such as Alice Springs with a large Aboriginal population consist of people with differing cultural values, which influences their values and practices of health, and failing to recognize these threatens the cultural safety of the HSAK. Cultural safety refers to the recognition and respect of differing cultural identities of others in the delivery of health services (Nursing Council of New Zealand, 2002), and teaching Aboriginal children the Western ways does not recognize the differing cultural values and practices of health, and thus poses a threat to the cultural safety of the HSAK.

Remoteness typically has a detrimental effect on health due to the social determinants of health such as lower socioeconomic status and education, and poorer health infrastructure and access to healthcare services. This leads to poorer health outcomes for Aboriginal Australians, as they comprise a large part of the population in remote areas. However, the collectivist culture found in remote Aboriginal communities such as Alice Springs is a benefit to health, as people support and promote the health of one another. In order to be effective, health promotion initiatives in Alice Springs should be culturally safe by recognizing and respecting the differing cultural values and practices of health in this community when implementing programs based on Western culture. They should also signify the collectivist culture, as it is a benefit to health.

**References**

Australian Bureau of Statistics (2001), *2001 Census data.* Retrieved from http://www.abs.gov.au/websitedbs/censushome.nsf/home/historicaldata2001?opendocument.

Australian Bureau of Statistics (2006), *2006 Census data.* Retrieved from <http://abs.gov.au/websitedbs/censushome.nsf/home/historicaldata2006>.

Australian Government, Department of Health (2006), *Australian Standard Geographical Classification – Remoteness Area (ASGC-RA 2006),* Retrieved from <http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/content/ra-intro>.

Australian Institute of Health and Welfare (2011), *Indigenous Australian.* Retrieved from <http://www.aihw.gov.au/indigenous-australians/>.

Bell, A., & Swinburn, B. (2004). What are the key food groups to target for preventing obesity and improving nutrition in schools? *European Journal of Clinical Nutrition, 58*(2), 258. doi: 10.1038/sj.ejcn.1601775.

Department of Health and Community Services & Department of Employment Education Training (2007). *Healthy School-Age Kids* (2nd ed.). Retrieved from <http://remotehealthatlas.nt.gov.au/hsak_manual.pdf>.

Kawachi, I., & Berkman, L. F. (2001). Social ties and mental health. *Journal of Urban Health, 78*(3), 458-467. doi: https://dx.doi.org/10.1093%2Fjurban%2F78.3.458.

Langford, R., Bonell, C., Jones, H., Pouliou, T., Murphy, S., Waters, E., … Campbell, R. (2015). The world health organization’s health promoting schools framework: A Cochrane systematic review and meta-analysis. *BioMed Central Public Health, 15*(130). doi: 10.1186/s12889-015-1360-y.

Lohoar, S., Butera, N., & Kennedy, E. (2011). *Strengths of Australian Aboriginal cultural practices in family life and child rearing.* Melbourne: Australian Institute of Family Studies.

Nursing Council of New Zealand (2002). *Guidelines for cultural safety, the treaty of Waitangi, and Maori health in nursing and midwifery education practice.* Wellington: Nursing Council of New Zealand.

Oberklaid, F., Wake, M., Harris, C., Hesketh, K., & Wright, M. (2002). *Child health screening and surveillance: A critical review*. Melbourne: National Health and Medical Research Council.

Suhrcke, M., & de Paz Nieves, C. (2011). *The impact of health and health behaviours on educational outcomes in high-income countries: A review of the evidence.* Europe: World Health Organization.

Wilkinson, R., & Marmot, M. (2003). *Social determinants of health: The solid facts* (2nd ed.). Europe: World Health Organization.

World Health Organization (2010). *Social determinants of health*. Retrieved from <http://www.who.int/social_determinants/sdh_definition/en/>.

Yeo, S. S. (2003). Bonding and attachment of Australian aboriginal children. *Child Abuse Review, 12*(3), 292-304. doi: 10.1002/car.817.

Zhao, Y., Connors, C., Wright, J., Guthridge, S., & Bailie, R. (2008). Estimating chronic disease prevalence among the remote Aboriginal population of Northern Territory using multiple data sources. *Australian and New Zealand Journal of Public Health, 32*(4), 307-313. doi: 10.1111/j.1753-6405.2008.00245.x.