A Literature Review

Determinants of Psychological Distress

Report 2

The Assessment of the Determinants and Epidemiology of Psychological Distress (ADEPD) Study

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Introduction

The Assessment of the Determinants and Epidemiology of Psychological Distress (ADEPD) study seeks to understand how best to impact on the prevalence of Psychological Distress [PD] or poor mental health outcomes in the South Australian [SA] context. To reduce the prevalence and impact of PD in the SA community, SA Health knows that effective policy and program interventions are essential. The ADEPD Study has been funded through the Strategic Health Research Program 2006 – 2007, SA Health. Stage 1 of the ADEPD Study required a comprehensive review of local, national and international literature on the association of Psychological Distress [PD] and poor mental health with various socioeconomic and health determinants. In undertaking this review for the ADEPD study, the purpose is to contribute to understanding the key determinants of PD in the South Australian context.

Objectives

The objectives of this review were to:
1. Systematically search a diversity of electronic data bases
2. Collate qualitative and quantitative research and grey literature
3. Perform a synthesis of evidence collated
4. Thematically analyse recurring views within evidence collated
5. Compare data sources that investigate PD and social and health determinants with SA Health databases
6. Identity any gaps within literature collated and SA data collections
7. Offer commentary about determinants of PD and the incidence of chronic disease within SA context.

Search strategy

All effort has been made to conduct an explicit and transparent review method. In so doing:
- a review protocol to guide the review process has been produced
- a comprehensive search strategy was developed
- inclusion criteria have been made explicit
- data has been gathered from a diversity of sources.

The following electronic databases were searched
- Australian Resources (Humanities & Social Science Collection, Meditext, Health & Society Database, Rural & Remote Health Database, and Australian Public Affairs)
Search terms used included:

- ‘Psychological wellbeing’, ‘psychological distress’ (or ‘psychological’ if these terms were too narrow);
- ‘K10’, ‘Kessler’ or ‘psychological measures’;
- Social determinants;
- Socioeconomic determinants;
- Health determinants;
- ‘Determinants of health’; and
- ‘Chronic conditions’, ‘chronic disease’ or ‘chronic illness’.

Using a Google web search, a number of government and organisational reports have been sourced using the same search terminology. Each Australian state government web site was searched for recent relevant reports. Poor mental health outcomes in the context of this search referred to self-reported mental health status, anxiety and depressive symptoms (medically diagnosed or not diagnosed).

Selection criteria

Publications were included in this review if they were:

- Local, national and international published literature
- English language articles
- Based on quantitative and qualitative research - all types of research methodologies
- All types of evidence – research based evidence, clinical practice guidelines, expert opinion, case studies, editorials, letters to editors etc.
- Both genders, across all age groups
- Addressed socioeconomic determinants – employment status, education, income, housing tenure, social capital and major life events
• Addressed health determinants (indicators) – chronic disease, risk factors like obesity, smoking, physical inactivity, alcohol consumption, nutrition, high blood pressure and high cholesterol, health service usage, K10 – depression, anxiety, quality of life
• Indigenous and non-indigenous adults (ATSI people where possible)
• Within a ten year span (1998 – 2008).

Full details of all publications reviewed are in the Reference List.

**Data collection and synthesis**

The evidence base for this review has been drawn from a diversity of sources, disciplines and different methods. It is though incomplete. No effort has been made to rule out any form of evidence and data a priori. Direction given to the reviewer was to commit to methodological pluralism and epistemological variability, understanding that there are different ways of knowing. This direction is supported by Bonnefoy et al (2007) in a report to the WHO.

Collated papers have been synthesized by:
1. Looking across articles retrieved to identify what recurring statements in terms of agreements and disagreements/points of tension/conflict exist. That is, what is agreed on and not agreed on and what are the recurring tensions;
2. Looking across articles retrieved and identify what work has been completed and note what work (research and policy even education) is said still to be done;
3. Identifying what is said or agreed as being issues needing consideration within the debate about psychological wellbeing and chronic conditions; and
4. Identifying what issues are said to be outside the debate about psychological wellbeing and chronic conditions.

All publications in the reference list were read for patterns and repeating descriptive statements. While not all referenced articles are cited specifically in the results section of this review, they have all informed the text produced.

**Results**

**Introduction**

This review of collated literature was requested to provide an understanding of the key determinants of psychological distress [PD] in the South Australian context. Relationships are reported between psychological distress or poor mental health outcomes and chronic diseases by social and health determinants requiring policy and program interventions to reduce PD.
Attempts at understanding experiences of PD have produced an extensive amount of literature (see reference list) though there is no agreed definition. There are no natural boundaries defining PD. Debate exists about whether PD is antecedent to or a consequence of, an event (illness for example, or chronic pain) and there is concern not to conflate distress and disorder. Some authors have considered the implications of defining PD within a biomedical or illness model given their understanding of PD as a lived experience (see for example Adame et al, 2007, Masse, 2000). Additionally, the way in which different social contexts may influence experiences of PD and then in turn how this experience can be usefully measured is contested. Statistical measurements are the most common to gauge psychological distress and tools used include QOL measurements, HADS, K6, K10, K12, PANAS, GHQ-12, SF-12, and RAND-12. In literature collated, there exists a diverse discussion on the application and limitations of using K-10, RAND-12 and SF-12 to measure psychological distress (see for example, Carra et al, 2008, Brooks et al, 2006). There is a reasonable amount of agreement that K6 and K10 are well accepted as tools to measure psychological distress and both tools are argued as more appropriate to GHQ-12. K10 is not a measure of psychosis and phobias and is considered to be limited to being a measure of current anxiety and depression symptoms experienced by an individual in the month leading up to being interviewed in a survey like for example the South Australian Monitoring and Surveillance System (SAMSS).

SA Health is currently being informed by a diversity of evidence collected through SAMSS using K10.

**South Australian Monitoring and Surveillance System (SAMSS)**

Since 2000, the Population Research and Outcome Studies (PROS) Unit has conducted the South Australian Monitoring and Surveillance System (SAMSS) to systematically monitor the trends of diseases, health related problems, risk factors and other health services issues relevant to SA Health. The PROS Unit develop the topics and questions to be included in SAMSS in consultation with key personnel within SA Health, including relevant experts and these topics are congruent with the diversity of literature collated for this review.

SAMSS enables data to be collated from participants 16 years and over on the following:

**Demographic profile**

- postcode
- age
- gender
- education
- household income
- money situation
• employment status
• household profile
• family structure profile
• ethnicity

**Health status, chronic conditions and co-morbidity**
• diabetes,
• asthma,
• other respiratory conditions,
• cardiovascular conditions,
• arthritis,
• osteoporosis
• disability
• injury
• multiple chronic conditions derived by accumulating the seven health conditions reported
• overall health status

**Health risk factors**
• high blood pressure,
• high cholesterol,
• body mass index,
• smoking status,
• alcohol consumption,
• sunburn
• nutrition
• physical activity
• multiple risk factors derived by accumulating the eight health risk factors reported

**Mental health**
• self-reported mental health condition
• anxiety
• depression
• stress related problems
• any other mental health problem
• current mental health condition treatment
• multiple mental conditions were derived by accumulating the following conditions reported – anxiety, depression, a stress related problem, or other mental health problem
• suicidal ideation
• child mental health problems
• child mental health treatment
Health services utilisation

- visits to the general practitioner or specialist
- clinic visits or visits to Hospital A&E
- Hospital admissions
- visits to a district nurse or other community nurse
- visit to the optometrist
- visits to the physiotherapist
- visits to chiropractor
- visits to the occupational therapist
- visits to the audiologist
- visits to an alternative therapist
- visits to a psychologist
- visits to a psychiatrist
- visits to any other community mental health service
- visits to dentist or dental health service
- experience of major psychosocial events in last 12 months using K10

Psychosocial events

- unplanned loss of job
- new job
- family or domestic violence
- death of somebody close
- discrimination
- moved house
- robbed or home burgled
- marriage/relationship breakdown
- serious injury
- serious illness
- illness in family member/friend
- birth or pregnancy
- financial stress
- family issues/problems
- mental illness – family member
- surgical operation
- other major event
- no event
- multiple psychological events derived by accumulating the psychological events that were asked about
Social capital

- neighbourhood safety
- neighbourhood trust
- home safety
- locus of control – control over decisions that affect life
- problems with transport

Day's loss or limited because of Health

- days off from usual activities due to health status
- limited in the amount of work done due to health

Data obtained from SAMSS from July 2002 – June 2004 demonstrated associations between PD and chronic conditions (Avery et al 2004; Dal Grande et al, 2004) based on the Kessler Psychological Distress Scale (K10). Findings highlighted in the South Australian context and reported are similar to findings in the extant literature and these are now outlined.

Age

Population research utilises different age brackets as they attempt to distinguish the prevalence of psychological distress between age groups. According to the SAMSS data, the proportion of respondents with high or very high PD in the 25 to 34 years was higher and the proportion of respondents in the 65 to 74 year and 75 years plus age group with high or very high PD years was lower (Avery et al, 2004). Reading across the various age brackets, it appears there is consensus in the literature showing a graduated decrease in psychological distress as people age past 55 years (Andrews, 1999, Australian Institute of Health and Welfare, 2006, Department of Human Services, 2005, Phongsavan, 2006).

The National Depression Index demonstrated a downward trend although there was an increase in men aged 45 to 64 years (Mackinnon et al 2004). The NSW Population Health Survey 2003, identified the prevalence of high to very high psychological distress among those aged 30 to 49 years as 12.8% and those aged 16 to 29 years as 12.6% (Phongsavan et al, 2006). More recent NSW data employing changed age groupings, demonstrated the 45 to 54 years age bracket, followed by the 16 to 24 years having the peak prevalence of high and very high psychological distress, with 13.4% and 12.5% respectively (Centre for Epidemiology and Research, 2007). The Victorian Population Health Survey 2005 identified the peak prevalence of high to very high psychological distress among people aged between 18 and 24 years 16.5%, as compared to 15.4% of 25 to 34 year olds (Department of Human Services, 2005). The Western Australian annual report in 2006 demonstrated these same age brackets as having 11.2% and 6.7% respectively. Likewise, the Health of Queenslanders
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The report of 2006 found the lowest age bracket (18 to 29 year olds) as having the highest prevalence of high and very high psychological distress (Queensland Health, 2006).

SAMSS though only includes people 16 years and over or asks parents or caregivers about younger children. Compelling evidence exists in collated literature that common mental disorders (phobias for example) are disorders of the young and these young people are at a greater risk of developing chronic diseases. Andrews (2006) argues that there is no escaping the conclusion that common mental disorders begin early. Knowing that the young are slow to seek treatment, Andrews (2006) says prevention programs aimed at school age children are vital.

Dal Grande et al (2004) have reported on data from SAMSS that focussed on parents or caregivers self-reported views about the mental health problems and treatments of their children 2 – 15 years. Parents or carers of children living in the lowest SEIFA IRSD quintile were statistically significantly more likely to report their child as having quite a lot or very much trouble with emotions, concentration or getting on with people (17.3%) and for their child to have been treated for this problem (15.2%). This lowest SEIFA IRSD quintile was also parents or caregivers of children 2 – 15 years who were statistically significantly more likely to report problems with transport.

**Gender**

Women are statistically more likely to experience high or very high psychological distress than men (12.4% compared to 8.7% respectively) (Avery, et al, 2004). Gender influence in relation to psychological distress is widely documented (Australian Bureau of Statistics, 2001; Australian Institute of Health and Welfare, 2006; Baille, 2005; Cairney & Krause, 2005; Centre for Epidemiology and Research, 2007; Department of Health, 2006; Department of Human Services, 2005; Phongsavan, 2996; Taylor, 2007) with no clear understanding of the underlying aetiology. Predictors in PD may have a biological basis in sex hormones but are considered to be also reinforced through a lifetime of gender socialization (Hagedoorn et al 2000). PD in female patients and partners is known to be more then in men. Studying couples’ adjustment to cancer, Hagedoorn et al (2000) have demonstrated that psychological distress and quality of life associated with the cancer experience not only depend on someone’s role (patient or partner), or on someone’s gender, but on the combination of role and gender. As well, Emerson and Llewellyn (2006) examined the association between risk of child disability and maternal mental health. Elevated rates of psychological distress indicative of serious mental illness were found among mothers, but not fathers of children at risk of disability.

In an Australian rural population study using the K10 and the Hospital Anxiety and Depression Scale (HADS), no gender differences in psychological distress were found.
(Kilkkinen, 2007). There are however two potential explanations for this: (1) the population was taken specifically from rural settings identifies there is no gender differences with this population group, and (2) questions have been raised in the literature as to whether the HADS “overestimates the prevalence of depression in men and/or underestimates it among women” (Nortvedta, 2006). Alternatively, the use of the K10 has been associated with only a very small predictive bias, if it is indeed statistically significant (Baillie, 2005).

Franz et al (2003) identified for the first time in Germany within a large epidemiological sample different subgroups of higher distressed single mothers. Socioeconomic status (income, education) of single mothers was lower while PD (SCL-90-R) was elevated compared to the control group. Single mothers without additional personal support for their child, younger, as well as poor single mothers showed higher values of psychological distress.

Lorenz et al (2006) showed that the years immediately after their divorce (1991-1994), divorced women reported significantly higher levels of psychological distress than married women but no differences in physical illness. A decade later (in 2001), the divorced women reported significantly higher levels of illness, even after controlling for age, remarriage, education, income, and prior health. Compared to their married counterparts, divorced women reported higher levels of stressful life events between 1994 and 2000, which led to higher levels of depressive symptoms in 2001. (Lorenz et al, 2006)

**Area of Residence**

Avery et al (2004) highlights complexity in the association between area of residence and psychological distress. While the ARIA classification demonstrated no statistically significant differences between categories, when various regions within South Australia were examined there was an increase in high and very high psychological distress for people who lived in the metropolitan area (11.2%) as compared to country areas in general (9%). These findings are supported by the Victorian population health survey of 2005 (Department of Human Services, 2005). The National Survey of Mental Health and Well-Being identified a greater prevalence of “mental ill health” in larger rural and urban areas (Korten & Henderson, 2000).

The Western Australian, Queensland and New South Wales state health reports have identified no significant regional association with psychological distress between metropolitan and non-metropolitan residents (see for example Centre for Epidemiology and Research, 2007; Department of Health, 2006; Queensland Health, 2006). Smaller studies that focused on the rural experience of psychological wellbeing and mental health, have demonstrated an increase in the number of rural residents receiving a mental health diagnosis (Campbell, 2006), and a general escalation in psychological distress to almost one third of the rural population (Kilkkinen, 2007).
Some major state reports on health do not comment on area of residence as a significant factor in psychological distress (Centre for Epidemiology and Research, 2007), and consider the socioeconomic status as the more relevant key. It has been observed within the NSW metropolitan area, the prevalence of high and very high psychological distress will increase in certain regions of Sydney; correlating with socioeconomic disadvantage (Centre for Epidemiology and Research, 2007). Gender and place of residence has been reported to contribute to disparities in the use of mental health services. Hauenstein et al (2006) found that rural women are less likely to receive mental health treatment either through the general healthcare system or through specialty mental health systems when compared to women in metropolitan statistical areas (MSA) or urbanized non-MSA areas. Rural men receive less mental health treatment than do rural women and less specialty mental health treatment than do men in MSAs or least rural non-MSA areas. Reported mental health deteriorates as the level of rurality increases.

Community and individual resilience in rural Australians has been found to increase psychological wellbeing (Hegney et al, 2007). A connection to the land, which is strongly embedded in the literature on Indigenous peoples (eg human ecology) and acknowledged as part of Indigenous culture and cosmology, may also be a factor that enhances the resilience of non-Indigenous people who have built up a relationship with the land over time.

Results from a study by Gonyea and Bachman (2008) identified the need to screen and treat mental health problems in older residents in low-income public housing given they are more likely to have a psychiatric disorder prevalence rates more than two times the rate found among community-dwelling elders in the United States.

Wells and Harris (2007) conducted a longitudinal study that examined the relation between housing quality and psychological distress among a group of low-income women relocating from inadequate to newly constructed homes. Significant improvements occurred from pre-move to post-move in all variables measured including housing quality, psychological distress, and social withdrawal. Longitudinal results indicated that changes in housing quality predict post-move psychological distress, after controlling for pre-move psychological distress. Social withdrawal was found to mediate the relation between housing quality and mental health.

An investigation of the relation between housing, socioeconomic status, and self reported general and mental health, using a cross sectional telephone survey (Dunn, 2002) found that the influence of housing demand and control variables superseded a well known correlate of health status, educational attainment, attesting to their importance. The findings of this paper lend support to the hypothesis that features of the domestic environment, especially as they pertain to the exercise of control and the experience of demand, are significant predictors of
self reported general and mental health status. Housing is argued as a concrete manifestation of socioeconomic status, which has an important part to play in the development of explanations of the social production of health inequalities (Dunn, 2002).

**Country of Birth**

It appears people born in Australia have a statistically lower likelihood of experiencing high to very high levels of psychological distress (Avery et al, 2004). When categorised as Australian born, United Kingdom/Ireland born or born elsewhere, people born elsewhere are 1.61 times more likely to experience high to very high psychological distress. From the Australian perspective, consensus within the literature is reached suggesting non-Australian born residents are more likely to experience high or very high psychological distress (NSW Department of Health, 2006). In particular, people born in Greece and Lebanon and women born in Italy had significantly higher levels of psychological distress (NSW Department of Health, 2006). The Victorian health survey was not able to identify a statistically significant difference between Australian or overseas born individuals (Department of Human Services, 2005).

People who speak a language other than English at home are significantly more likely to experience psychological distress (Avery et al 2004).

Considering the international perspective, utilising the K10 within the National Health Interview Survey in the United States of America (US), native born Americans are more likely to experience psychological distress than those who have immigrated to the US; in fact it is heightened as the length of residence increases for immigrants (Bratter & Eschbach, 2005).

An Australian study (Schweitzer et al, 2006) exploring the impact of pre-migration trauma, post-migration living difficulties and social support on the current mental health of resettled Sudanese refugees showed that resettled refugees evidenced a history of trauma. Results indicated that social support - particularly perceived social support from the migrant's ethnic community - plays a significant role in predicting mental health outcomes.

**Level of Education**

The SAMSS data reflects a graduated decrease in high to very high psychological distress as a person’s level of education increases, namely there is a statistically significant increase in levels for people who haven’t completed high school and a significant decrease for people with a bachelors degree or higher. There is consensus within the literature demonstrating an increased prevalence of psychological distress as the level of education decreases (Department of Human Services, 2005). Grywacz et al (2004) argue that although better
Educated individuals reported more daily stressors, stressors reported by those with less education were more severe.

Using the 12-Item General Health Questionnaire, Korten and Henderson did not find an association between mental health symptoms and education level (Korten & Henderson, 2000).

**Employment Status**
Psychological wellbeing has been related to the capacity of an individual to access latent benefits of employment, including social support, structured daily activity, meaningful productivity, and having a collective purpose and role identity (Creed & Muller, 2006). Avery et al. (2004) identified both employed and self-employed people have a significantly lower likelihood of experiencing high and very high psychological distress, while people classified as unemployed, unable to work or who perform home duties are statistically more likely to experience distress. In other studies, unemployed people are twice as likely to experience high or very high psychological distress as compared to employed people; the Victorian health survey demonstrated a 2.58 times increase (Department of Human Services, 2005).

Gender differences in the effects of unemployment on mental health to assess whether such effects are associated with interactions among gender, family roles, and social class, were examined by Artazcoz et al. (2004). Findings show that unemployment had more of an effect on the mental health of men than on that of women. Gender differences in effects were related to family responsibilities and social class. Authors conclude that understanding the effects of unemployment on mental health requires consideration of the interactions among gender, family responsibilities, and social class.

Klose and Jacobi (2004) note higher rates of mental disorders in unemployed of both sexes, especially among young adults and Talala et al (2008) also found that employment status was associated with several measures of psychological distress.

Choi et al (2008) attempted to determine whether an ecological association exists between job strain and common mental disorders at the occupational level and whether the association is a confounding effect of socioeconomic status. Male occupations from Belgium (N=184) and the United States (US) (N=120) were chosen from the BELSTRESS study (Belgian job-stress study) (1994-1998) and quality of employment surveys (1972-1977), respectively. Choi et al (2008) concluded that job strain is associated with common mental disorders at the occupational level, and not explained fully in the context of the association between socioeconomic status and mental disorders.
**Income**

Utilising the SAMSS data from 2002 – 2004, it was found that people with a household income of less than $20,000 per annum were statistically more likely to experience psychological distress, while households with above $60,000 are statistically less likely to experience distress. There appears to be agreement within the major state studies, that there is a graduated decrease in psychological distress as the household income increases (Department of Human Services, 2005). There appears to be links made within the literature between increased psychological distress with rising socioeconomic disadvantage (Centre for Epidemiology and Research, 2007).

Psychological well-being has been argued as being more a function of an individual's perception of their financial situation rather than their employment status (Creed and Muller, 2006). While there seems to be a need for a structure to one's day through employment, the view is emerging that decreasing shame is being associated with unemployment. Perceptions of financial wellbeing or financial distress are said to be becoming the best predictor of well-being (see Creed & Muller, 2006). Dal Grande et al (2004) reporting on data from SAMSS by SEIFA IRSD scores state that the prevalence of PD for adults in SA did not differ by SEIFA.

**Physical Activity**

Avery et al (2004) has demonstrated a correlation between sufficient physical activity and psychological distress. People who reported no physical activity had a 16% chance of experiencing psychological distress whereas only 8.4% of people who undertook sufficient exercise to benefit their health experienced psychological distress. 11.8% of people who participated in activity, but not sufficient for health benefits, experienced high to very high psychological distress. The Victorian health survey demonstrated some increase in psychological distress, 1.21 times that of sedentary individuals (Department of Human Services, 2005).

**Health Risk factors and PD/ mental health outcomes: Smoking**

Wagena et al (2004) set out to evaluate if employees with asthma, chronic bronchitis or emphysema can be characterized as a population of people with a high prevalence of PD and/or depressed mood. Smoking employees, who reported having asthma, chronic bronchitis or emphysema were more likely to report suffering from depressed mood compared to smokers with no long-lasting disease.

**Health Risk factors and PD/ mental health outcomes: Alcohol**

Rodgers et al (2007) aimed to determine the prevalence of affective and anxiety disorders in the Australian population (from the CIDI-A) in current abstainers and contrast results with
findings for psychological distress (K10) in the same sample. Non-/occasional drinkers had higher levels of psychological distress than light drinkers, and distress in heavy drinkers was even higher. Heavy drinkers also had the highest rates of most disorders. Avery et al (2004) based on SAMSS data reports that respondents who were non drinkers had a higher proportion of high or very high psychological distress.

The relationship between alcohol intake and psychological distress on the working population was studied by Marchand et al (2003). Results show that alcohol intake and psychological distress vary significantly at the worker and occupation levels, but they do not show a large variation at the occupation level. Occupational socioeconomic status appears to be a common factor explaining the correlation between alcohol intake and psychological distress at the occupation level. They state that semi-professionals, middle management, foreman and semiskilled clerical-sales-services occupations are particularly at risk. Gender is related to both outcomes, while work schedule and number of weekly working hours are associated only with psychological distress.

Health Risk factors and PD/ mental health outcomes: Obesity
A recent Australian study (Darby & Hay, 2007) found that disordered eating psychopathology is high in young obese women and negatively impacts upon psychological status. They argue that women with obesity had significantly higher levels of dietary restraint, eating concern, weight concern, shape concern, binge eating, misuse of diuretics, use of diet pills and fasting compared to other women in the community.

Health Risk factors and PD/ mental health outcomes: Blood pressure
An epidemiological study conducted by Carroll et al (2003) examined whether the magnitude of blood pressure reactions to mental stress was associated with future blood pressure and whether the strength of association was affected by sex, age, and socioeconomic position. The results indicated that blood reactions to mental stress predict future blood pressure status and the increase in resting blood pressure over time. The magnitude of the prediction they state, appeared to vary with socioeconomic position and sex.

Overall Health Status
According to Avery et al. (2004) respondents who rate their overall health as very good or excellent are statistically significantly less likely to experience high or very high psychological distress. When overall health is described as fair or poor, there is a statistically significantly greater report of high to very high psychological distress. As the subjective report of overall health status improves, psychological wellbeing also improves. Decreasing health status is associated with increasing psychological distress or mental health symptoms by a variety of researchers (Andrews et al, 1999; Saunders and Daly, 2000). Moussavi et al (2007) using
data from World Health Surveys, argued that depression had a greater negative impact on overall health status – greater than angina, arthritis, asthma or diabetes

Rabinowitz et al (2005) urge physicians to pay increased attention to possible psychological distress among elderly patients who perceive their health status as poor and those patients who visit more frequently could improve detection of distress among these elderly patients. Hu and Gruber (2008) state that positive and negative affect may be useful indicators of life functioning among the elderly. They argue that affect assessment might provide a valuable means for understanding how individuals view their health and symptoms of disease and illness.

Mulatu (2002) explored (1) the reciprocal relationships between socioeconomic status (SES) and health status, and (2) the degree to which health-related lifestyles/behaviors and psychosocial distress are mediating mechanisms of these relationships. A notable part of the effect of SES on health is due to differences in psychological distress, with the effects of health-related lifestyles/behaviors being much smaller.

**Chronic Conditions**

The SAMSS questionnaire collects data relating to a number of health conditions including diabetes, asthma, current other respiratory conditions, cardiovascular disease, arthritis, and osteoporosis. Avery et al. (2004) found respondents with high or very high psychological distress all reported having one chronic condition. Respondents who reported having two and three to seven chronic conditions experienced statistically significantly greater prevalence of high and very high psychological distress (Avery et al, 2004). Fortin et al (2006) evaluated the relationship between psychological distress and multimorbidity among people seen in family practice after controlling for potential confounding variables and taking into account the severity of diseases. Psychological distress increased with multimorbidity when disease severity was accounted for. Other studies have shown clear links between chronic illness and poor mental health (see for example, Scott, 2006; Chapman et al, 2005; Evans et al, 2005).

As mentioned, debate does exist about whether PD is antecedent to or a consequence of, an illness or symptoms. Many have argued the need to address poor mental health status to ensure the appropriate management of the chronic illness and to seek preventive care or engage in health lifestyle behaviours (see for example, Shih & Simon, 2008; Smith et al, 2006; Mykletun et al, 2007; Thorpe et al, 2006; Strine et al, 2004; Dimatteo et al, 2000). The question has been raised as to whether the extent of disability and supports available to a person with chronic disease has more impact on PD than the nature of the disease itself (Ormel, 1997). Shih and Simon (2008) argue that people with chronic illnesses place as
nearly as high a value on their mental health as their physical health which suggests a need for a focus on early prevention of PD.

A study conducted by Luchenski et al (2008) to estimate the potentially different health effects of changes in socioeconomic position (SEP) on changes in health for working-age women and men over a 10-year period found that health inequalities by sex/gender and by changes in SEP were present for all four outcomes in age-adjusted models; however, after controlling for time-dependent social structure, behaviour, and psychosocial factors the relationships persisted only for chronic conditions and psychological distress.

To assess the prevalence and effects of serious PD among adults with diabetes, the New York City Department of Health and Mental Hygiene (DOHMH) analyzed data from approximately 10,000 adults who participated in the 2003 New York City Community Health Survey (CHS). The results indicated that 1) adults with diabetes were twice as likely to have SPD as those without diabetes, and 2) adults with both SPD and diabetes were more likely than those with only diabetes to live in poverty, report poor health, lack access to health care, and to have lost a spouse or partner to separation, divorce, or death. (Centres for Disease Control, 2004)

Stansfeld et al (2002) study aimed to confirm the association between psychological distress and coronary heart disease and examine if it could be explained by other factors such as health behaviours, social isolation and low control at work, using a prospective occupational cohort study of London-based civil service employees (Whitehall II Study), 1985 – 1989 with 5 yr follow up. The authors conclude the experience of psychological distress confers increased risk of CHD in men that is not explained by health behaviours, social isolation or work characteristics. The increased risk of CHD associated with psychological distress is not consistently demonstrated in women.

The prevalence of serious psychological distress [SPD] and frequent anxiety or depression in adults with arthritis is significantly higher than in adults without arthritis (Shih et al, 2006). In adults with arthritis, SPD was significantly associated with younger age, lower socioeconomic status, divorce/separation, recurrent pain, physical inactivity, having functional or social limitations, and having comorbid medical conditions. Shih et al (2006) conclude that younger adults with arthritis, and those with recurrent pain or either functional or social limitations, may be at higher risk for SPD. Hyphantis et al (2006) found that psychological distress is a relatively common experience in early Rheumatoid Arthritis.

**Mental Health**

There are a number of surveys used for the acquisition of population wide information on mental health. The Composite International Diagnostic Interview (CIDI) identifies various
mental health symptoms and explores severity and other factors. It is possible from the data collected to diagnose various DSM-IV classified disorders. This instrument is used by the World Health Organisation Mental Health Consortium and the Australian National Survey of Mental Health. The World Health Organisation Mental Health Consortium (2004) utilising the Composite International Diagnostic Interview (CIDI), highlighted the significant under-treatment of serious psychiatric disorders. Goldney et al (2004) also questioned whether the Australian National Survey of Mental Health and Wellbeing appropriately estimates the prevalence of depression. Indeed they argue that this survey underestimates the prevalence of depression which results in under-resourcing for the optimum management of depression in Australia. Also Horwitz argues that there are fundamental differences between distress ‘that arises in non-disordered persons and genuine mental disorder’ (Horwitz, 2007). This raises to question those persons who self-report a mental health problem but do not have a doctor diagnosis.

The General Health Questionnaire (GHQ) may be used in addition to the CIDI (Korten & Henderson, 2000) or separately, as it explores the recent experience of thoughts, feelings and behaviours. It is important to comprehend the instrument is exploring current psychological experience rather than looking for long-term or even life-long mental health conditions.

Shih and Simon (2008) insist that mental health should be routinely assessed when addressing health needs of individuals and communities. South Australians that experience PD have been reported by Avery et al (2004) using SAMSS data. PD as measured by K10 was analysed by a number of self-reported mental health conditions to identify if any specific mental health problem was associated with PD. Overall, of those persons who self-reported mental health conditions, 47.8% self-reporting anxiety reported high or very high PD; self-reporting depression reported 50.2% reported high or very high PD; self-reporting stress related problem 38.8% reported high or very high PD; and those self-reporting any other mental health problem 61.0% reported high or very high PD. Of those respondents self-reporting that they were currently receiving treatment for their mental health problem, PD was high or very high in those receiving current treatment. Where a respondent had a number of mental health conditions, then this was associated with a statistically significant increase in high or very high PD.

Shih and Simon (2008) say that failure to screen and treat mental health disorders ‘may contribute to higher rates of some chronic diseases’ (p. 526).

In summary
From this review of literature what emerges is an understanding that PD is both antecedent to and a consequence of chronic illness/disability including mental illness. As much as there are determinants of PD, PD is a determinant of chronic illness/disability including mental illness. The association of PD with chronic diseases continues to place a significant emphasis on the need for SA Health to understand how best to ensure that PD does not contribute to higher rates of some chronic diseases and vice-versa.

In align with Kelly et al (2007), in a report to the World Health Organisation Commission on the Social Determinants of Health, a review of the value position which informs the model of social structure embedded in any evidence collected can inform SA Health about possible points of tension and where there is potential for change. The challenge and opportunity for SA Health is to articulate the model of social structure embedded in SA Health databases.

The following are key points from the literature.

1. Social structure, according to Bonnefoy et al (2007), needs to be described sociologically, geographically and economically. Key axes of social differences are listed as:
   - Class status
   - Education
   - Occupation
   - Income/assets
   - Gender
   - Ethnicity
   - Race
   - Caste
   - Tribes
   - Religion
   - National origins
   - Age, and
   - Residence.

2. Lynch (2008) concurs with Kelly et al (2007) arguing the need to use both absolute and relative differences between groups and individuals to reflect the variations across and within societies and the differential effects of interventions across a population.

3. Kelly et al (2007) and Lynch (2008) argue the need to measures changes in inequality over time including understanding if actions to address health inequities (unequal opportunity and unequal access to the ‘social goods’ that help generate better health’) are minimising PD and limiting the occurrence and/or the progression
of chronic diseases. Young people are one group likely to have unequal opportunity and unequal access to the ‘social goods’ that help generate better health.

4. Knowing if a child is caring for an adult or vice-versa and if a partner is caring for their spouse/partner is important. The caring role is a determinant of PD and chronic illness in children is a risk factor for PD in parents and some grandparents (see for example Silver et al 1998).

5. Perceived entrapment and exposure to chronic crime have been identified as determinants of PD (see for example Latkin et al, 2005). Length of time living in what is perceived as an unsafe neighbourhood or in a home that is not where they want to live or do not feel safe has been associated with PD.

6. Perceptions of financial wellbeing or financial distress are said to be becoming the best predictor of well-being (see Creed & Muller, 2006).

7. The degree of decision-making authority an individual feels they have at work/home the greater the decision-making authority the higher PD. Measuring the burden that is experienced in some type of work versus other work can be informative given working at the World Trade Centre, has, according to Stellman et al (2008), been identified as a burden for workers leading to chronic impairment of mental health and social functioning.

8. Skin diseases like psoriasis and atopic dermatitis are recognised as chronic diseases and have a high association with PD (see for example Evers et al, 2005; Picardi et al, 2005).

9. Though chronic pain does not predict future PD of itself, what has been described is the interaction between chronic pain and physical and psychological co morbidities (see McBeth, Maifarlane and Silman 2002). Further, Ormel et al (1997) say it is not the nature of the condition that determines psychological distress, but instead the severity of the disability and loss of psychological resources associated with the condition on the one hand and the psychological characteristics of the patient on the other. Identifying how best to monitor psychological resources as well as PD may be of value.

10. Young people are more likely to not self-identify their ethnicity (Kelly et al, 2007).

11. Co morbidity needs to include multiple mental health disorders and because of co morbidity the question becomes - is it best to reduce to principal disorder and
subsidiary disorders in epidemiological surveys? (Andrews et al, 2002). If yes, what is possible impact?

This review of systematically collated literature was based on a set protocol that guided the review process and a comprehensive search strategy. Two significant questions emerge related to data collection systems:

- Do these systems have a balanced focus on understanding the social determinants of health as well as the social determinants of health inequalities?

- Do these systems monitor for the early intervention of PD especially in young people and people with chronic disease, mental health disorders or disability?

While Kelly et al (2007) acknowledge that solutions to tackle health inequities cannot be universally applied to all contexts; it is possible to describe comprehensively what can be known and how it can be interpreted – the challenge and opportunity for SA Health.
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