Clinical Guidelines for the Physical Care of Mental Health Consumers

Report

Susanne Stanley &
Jonathan Laugharne

Foreword

"People with mental illness remain one of the most marginalised groups in society"

(Lawrence, Holman & Jablensky, 2001, p.1)

The Clinical Guidelines for the Physical Care of Mental Health Consumers project was instigated in February of 2009 by the former Western Australian Department of Health – Mental Health Division, in response to the alarming morbidity and mortality rates, from common physical health disorders in the mentally ill.

This report represents 12 months of effort in compiling both national and international literature and research. The result is the development of evidence-based clinical guidelines and protocols addressing the assessment and ongoing monitoring of the physical health of people with a mental illness.

Consultation and feedback on the first draft of the Clinical Guidelines package was sought across the health sector in Western Australia. An invited Reference Group discussion was held, and feedback from general health and mental health service representatives, consumers and carers was obtained.

The Clinical Guidelines for the Physical Care of Mental Health Consumers package affords a preventative, best-practice framework for mental health services, and facilitates effective coordination of care between health providers, and with mental health consumers.

I would like to thank Dr Steve Patchett, Dr Rowan Davidson, Dr Elizabeth Moore, Neil Guard, and the many health service representatives, consumers and carers for their commitment to improved physical health for people with a mental illness.

Finally, I would like to commend the authors of this report for their work and dedication to this important initiative. We look forward to the continued support provided to this project by the newly formed WA Mental Health Commission.

Aleksandar Janca

**Winthrop Professor and Head
School of Psychiatry and Clinical Neurosciences
University of Western Australia**

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Background Information

"Of the 16 million Australians aged 16–85 years, almost half (45% or 7.3 million) had a lifetime mental disorder, i.e. a mental disorder at some point in their life"

(Australian Bureau of Statistics - ABS, 2007a).

The Duty to Care report on preventable physical illness in mental health consumers (Lawrence, Holman & Jablensky, 2001) demonstrated markedly elevated rates of a range of physical disorders.

As a consequence, people with a severe mental illness are 2.5 times more likely to die from preventable physical illness than people in the general population.

This awareness of high ill health and mortality rates led to the 2004 Who is your GP? report (HealthRight Advisory Group, WA Office of Mental Health), advocating that mental health professionals take more responsibility for the physical health of their patients.

In February 2009 the Western Australian Department of Health - Mental Health Division, commissioned a review of both national and international literature to identify existing research, clinical guidelines and protocols addressing the physical health of mental health consumers.

A systematic search using multiple data bases from a variety of disciplines adhered to the specific inclusion criteria of; 1) a focus on physical conditions occurring in people with a mental health diagnosis, 2) currency of publications and research, 3) evidence-based studies, and 4) adult samples. Exclusion criteria included papers on expert opinion, and research that did not focus upon clinical or patient-relevant outcomes (adhering to the National Health and Medical Research Council's (NHMRC,) 'relevance of the evidence' principle). Older studies were included based on relevance to the topic and the dearth of research in specific areas.

The literature review to follow is not exhaustive, but aims to identify significant differences in physical health between the general population and mental health consumers. These differences highlight areas requiring examination and ongoing monitoring, and allow for the development of a physical health assessment package for use in clinical and community settings with mental health consumers.

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Factors Affecting the Physical Health of Mental Health Consumers

The following investigation will cover five major dimensions; medication, alcohol and illicit drug use, physical disorders (pre-existing or developing), lifestyle, and psychosocial factors. These dimensions reveal an holistic approach to the complex and interactive factors associated with the poor physical health of people with a mental illness.

One of the most prevalent health issues found in mental health consumers is that of the metabolic syndrome. Once thought to be primarily evident in people diagnosed with psychoses and mood disorders, the metabolic syndrome is now shown to be relatively common across all mental health diagnoses. Metabolic syndrome is related to several of the dimensions considered here – medication use, lifestyle factors, psychosocial factors and comorbid physical illness are all relevant.

The metabolic syndrome is a recognised cluster of features predictive of both cardiovascular disease and type 2 diabetes (Barnes et al., 2008). Central obesity, glucose intolerance/insulin resistance, hypertension, and dyslipidemia characterise the syndrome, yet only a small number of consumers are regularly screened (Meyer & Stahl, 2009; Taylor et al., 2005). Waterreus and Laugharne (2009) have recently developed an algorithm to assist clinicians in screening of the metabolic syndrome, highlighting waist circumference, blood pressure, fasting lipids, and fasting blood glucose.

Psychotropic medication is the first line of treatment for mental illness in the Western world and, unfortunately, the side-effects of drugs can be quite detrimental to the physical health of consumers (Schwartz et al., 2004; White, Gray & Jones, 2009; Zimmermann et al., 2003). This is compounded by risk factors such as smoking and a lack of exercise (Morris et al., 2006; Porter & Evans, 2008), and alcohol and illicit drug use (Hilton, 2007). Existing or developing physical conditions such as hepatitis C and B or gastrointestinal complaints can then hinder efforts to provide adequate health care, and psychosocial supports are needed to ensure that consumers and clinicians are effective in addressing health problems.

2.1 MEDICATION EFFECTS

The severity of known medication side effects is often downplayed, evidenced by the inadequacies in physical health screening for mental health consumers (Barnes et al., 2008). Informative literature on adverse drug reactions is generally presented in reports of clinical drug trials, individual cases, or drug safety monitoring, and studies are typically short-term in duration.

Voluntary reporting of side effects often depends upon the practicing clinician's vigilance, awareness and initiative. In this respect, "adverse events may be under diagnosed or not reported and, when they are reported, they usually serve as no more than a warning of a possible adverse reaction" (Edwards & Anderson, 1999, p.512). Poor health and increased risk of mortality can arise from any of the four major categories of psychotropic medications; antidepressants, anxiolytics, mood stabilizers / anticonvulsants, and antipsychotics.

As new drugs are introduced onto the market, research on contraindicated medications needs to be continually updated to keep practitioners informed of best practices and adverse effects, along with the strict monitoring of side effects that patients experience, and informing patients of foodstuffs and beverages that will adversely interact with medications.

2.1.1 Antidepressants

Antidepressant medications, commonly used for depressive and anxiety disorders (American Society of Health-System Pharmacists, 2009; NAMI, 2009), can be divided into several different classes; Selective Serotonin Reuptake Inhibitors (SSRI's), Tricyclics, Monoamine Oxidase Inhibitors (MAOI's), Serotonin and Noradrenaline Reuptake Inhibitors (SNRI's), and Reversible Inhibitors of Monoamine Oxidase A (RIMA's).

All have a number of common side effects such as nausea, diarrhoea, dizziness, tremor, headaches, dependence/withdrawal reactions (Edwards & Anderson, 1999), sexual dysfunction (Cohn & Rickels, 1989), and hyperglycemia (Yamada, Sugimoto & Inoue, 1999). Fatalities occur through more serious issues such as Serotonin Syndrome (Prator, 2006), weight gain leading to type 2 diabetes (Schwartz et al., 2004; Zimmermann et al., 2003), and cardiotoxicity (American Society of Health System Pharmacists, 2009).

Marked weight gain is related to many physical health issues such as type 2 diabetes and cardiovascular disease, and is common with antidepressants, particularly tricyclics (Zimmerman, 2003). SSRI's were thought to induce weight loss rather than weight gain and, as such, have generally been overlooked. More recently, it has been shown that weight loss can occur during the first few weeks of drug administration, but over the long term, weight gain is a typical result.

Drugs in other classes such as isocarboxazid (MAOI) and mirtazapine (NaSSA) are also associated with moderate to marked weight gain over time.

2.1.2   Anxiolytics

Anxiolytics such as benzodiazepines are widely prescribed for the treatment of anxiety disorders, insomnia and epilepsy (Barnes et al., 2008; NAMI, 2009). Sedation, rebound anxiety on withdrawal, risk of dependence, light-headedness, impairment of psychomotor performance and memory, confusion, and cognitive impairment are all listed as side effects for this class of drugs.

Due to the central nervous system side effects, benzodiazepines have also been associated with workplace injuries and traffic accidents (Choy, 2007). Long half-life benzodiazepines (e.g. diazepam and chlordiazepoxide) are not recommended in the elderly as falls and excessive sedation may occur (Mort & Aparasu, 2002).

Long-term users (four months or longer) account for the majority of anxiolytics and hypnotics taken, and efficacy is uncertain (Griffiths & Weerts, 1997). Long-term risks involved with the use of these drugs suggest lowered cognitive functioning, some of which may not be reversible, and may represent a cumulative drug effect (e.g. psychomotor speed, speed of cognitive processing and verbal memory) (Barker, Greenwood, Jackson & Crowe, 2004; Choy, 2007).

Barker et al. (2004) conducted a meta-analysis examining all available research on the cognitive effects of long-term benzodiazepine use. They found consistent impairment in all cognitive domains for long-term users (minimum use of 12 months) when compared to control subjects. The small number of studies and, at times, lack of methodological vigour suggests a need for further research in this area.

Other benzodiazepine effects reported in the literature are treatment-emergent depression, paradoxical reactions (i.e. behavioural disinhibition, anxiety, insomnia), and delirium.

2.1.3   Mood Stabilisers/Anticonvulsants

Medications categorised as mood stabilisers/anticonvulsants are generally used in the treatment of bipolar disorder, anxiety and seizures (Barnes et al., 2008; NAMI, 2009). Along with issues such as nausea, vomiting, diarrhoea, weight gain, sedation, and tremor (American Society of Health-System Pharmacists, 2009; NAMI, 2009), tolerance/dependence can develop with these medications (Zimmermann et al., 2003).

Some medications such as valproic acid, carbamazepine, and lithium carbonate can lead to severe, even fatal consequences (Zimmermann et al., 2003). These include hepatoxicity, alopecia, pancreatitis, severe skin reactions, thrombocytopenia, involuntary movements, toxicity – renal impairment or failure, cardiac arrhythmias, and long term issues such as cognitive impairment and moderate to marked weight gain (American Society of Health-System Pharmacists, 2009; Mental Illness Fellowship Victoria, 2003; NAMI, 2009; Zimmermann et al., 2003).

Newer anticonvulsants looking to avoid the severe effects of older drugs are associated with their own side effects that need to be monitored such as hepatic (liver) failure and aplastic anaemia with felbamate (Ortinski & Meader, 2004).

Bootsma et al. (2009) evaluated discontinuation due to drug side effects in 1066 inpatients and outpatients who had been treated with lamotrigine (336 patients), levetiracetam (301 patients), and topiramate (429 patients). The most commonly reported side effects for lamotrigine were dizziness (14.9%), positive mood disorders (e.g. agitation, aggression, hyperirritability) (11.7%), rash (10.6%), and sleepiness (6.4%) or sleeplessness (7.4%). For levetiracetam the most common complaints dealt with positive mood disorders (13.8%), tiredness (13.8%), negative mood disorders (depression, apathy) (13.1%), and sleepiness (8.5%). Finally, people taking topiramate reported many more negative effects such as mental slowing (27.8%), word-finding difficulties (dysphasia) (15%), positive and negative mood disorders (13.2% and 5.7% respectively), gastrointestinal complaints (10.6%), paresthesia (7.5%), appetite loss (7%), skin complaints (6.6%), weight loss (6.2%), headaches (5.7%), and dizziness (5.3%). Overall, adverse drug events resulted in discontinuation for 35.9% of people taking topiramate, 22.5% of people prescribed levetiracetam, and 15.5% of people taking lamotrigine.

2.1.4   Antipsychotics

Atypical antipsychotic medications were introduced to lower the incidence of extrapyramidal symptoms such as Parkinsonism and tardive dyskinesia, yet it is becoming increasingly evident that they are associated with metabolic disturbances such as cardiovascular disease and type 2 diabetes.

Many of the physical health problems related to antipsychotic medications are similar to those cited for mood stabilisers and antidepressants. Generally prescribed for schizophrenia, antipsychotics have been increasingly used for treating bipolar disorder,

anxiety and depression (Schwartz et al., 2004). Metabolic disturbances leading to type 2 diabetes and cardiovascular disease are markedly elevated when compared to the general population. The prevalence of metabolic syndrome among people taking antipsychotic medications in Australia is high, affecting approximately 19% to 29% of adults (Zimmet, Alberti & Shaw, 2005).

Typical or first generation antipsychotics such as chlorpromazine, haloperidol, and loxapine are associated with extrapyramidal side effects such as tardive dyskinesia, and impaired cognitive functioning (Kiraly, Gunning & Leiser, 2008). The newer atypical (or second generation) antipsychotics are associated with adverse metabolic affects such as moderate to marked weight gain, glucose intolerance and type 2 diabetes, and hyperlipidemia.

Clozapine shows the greatest weight gain (McIntyre et al., 2005; Zimmermann et al., 2007), and cardiotoxic adverse effects such as myocarditis, cardiomyopathy, and pericarditis (Layland, Liew & Prior, 2009). Disturbances in glucose homeostatic mechanisms are also found with olanzapine, zotepine, quetiapine, chlorpromazine, thioridazine, perphenazine, trifluoperazine, risperidone, clopenthixol, and sulpride associated with moderate to marked weight gain (Zimmermann et al., 2007).

Many antipsychotic medications have also been linked with QT interval prolongation, adverse cardiac effects (John, Koloth, Dragovic & Lim, 2009; Kiraley et al., 2008; Marder et al., 2004; Schwartz et al., 2004; Zimmermann et al., 2003), and antipsychotic –induced hyperprolactinaemia causing sexual dysfunction, fertility problems, and bone mineral density reduction (Montejo, 2008).

2.2   LIFESTYLE

Major lifestyle factors are often outlined when citing determinants of poor physical health in people with a mental illness. A lack of exercise, poor diet, and smoking tobacco (Elmslie et al., 2001; Osborn, Nazareth & King, 2007; O'Sullivan, Gilbert & Ward, 2006; Porter & Evans, 2008; Soundy, Faulkner & Taylor, 2007) have been identified as unhealthy behaviours leading to chronic disease and mortality, along with high cholesterol levels (Jow, Yang & Chen, 2006; Ojala et al., 2008; Troisi, 2009), and poor dental hygiene (Dickerson et al., 2003; Sjogren & Nordstrom, 2000).

2.2.1   Exercise

Low levels of physical activity have been reported in Australia, with around 70% of the population exercising at low to sedentary levels (ABS, 2006). Low levels of physical activity in people with a mental illness have been reported in many studies (Elmslie et al., 2001; Porter & Evans, 2008; Soundy, Faulkner & Taylor, 2007). This is supported by a study in which people with bipolar disorder were twice as likely to not engage in physical activity at all as compared to a matched control group, reasoned to be due to the known sedating effects of medications (Elmslie et al., 2001). Jerome et al. (2009) examined levels of exercise and found that people with mental health issues tend to engage in sporadic physical activity rather than sustained physical activity.

An in-depth, qualitative study conducted in 2007 (Soundy et al., 2007) suggests that walking is the most common form of exercise undertaken, and that people with mental health problems are more physically active than commonly thought. The authors found that patients were receptive to the promotion of physical activity, but were ambivalent about engaging in physical exercise. Barriers such as a lack of social support, poor social skills, poor self-image, and coping with current emotional issues tend to prevent behaviour change and adoption of a healthier lifestyle.

2.2.2   Diet

For people with mental health disorders, a major factor contributing to obesity is often thought to be diets high in saturated fat (Jerome et al., 2009; Porter & Evans, 2008). Poor dietary habits in the mentally ill though, are not conclusively supported by the literature.

Stokes and Peet (2004) conducted a pilot study of 20 patients diagnosed with schizophrenia. They used a seven day weighed intake method along with patient diet histories supplied by nursing staff. Results suggested that patients had diets high in sugars and saturated fats.

Osborn et al. (2007) found that people with a psychotic disorder had diets low in fibre, but when compared to a matched sample, there was no difference in levels of saturated or total unsaturated fat intake between the two groups. This finding was similar to that of a New Zealand study, although the latter study also found that sucrose levels (particularly those derived from non-alcoholic beverages such as sweetened drinks, cakes etc.) were higher in people taking antipsychotic medications (Elmslie et al., 2001).

Finally, in the USA Strassnig, Brar and Ganguli (2003) examined a 24 hour diet recall of 146 outpatients with schizophrenia. They then compared this with the general population using the Third National Health and Nutrition

Examination Survey. Dietary choices were no different to the general population as the relative percentage of calories derived from proteins, carbohydrates and fats were similar between groups. There were also no differences in cholesterol or fibre intake between groups. In general though, people with schizophrenia tended to eat more than people in the general population.

2.2.3 Tobacco Smoking

The Australian Bureau of Statistics (2008) data indicate that for the 2007-2008 period, 20% of Australian adults smoked cigarettes. Figures for smoking prevalence for people with a mental illness vary, but they are significantly higher than prevalence rates for the general population. In a large American study (over 100,000 people with a mental illness) overall tobacco smoking rates of around 39% (Morris, Giese, Turnbull, Dickinson & Johnson-Nagel, 2006) were found. Lower overall rates have been established in Australia.

The 2007 National Survey of Mental Health and Wellbeing (SMHWB) (ABS, 2007a) found that for people who had identified as having a mental disorder within the past 12 months, 32.4% smoked tobacco. Diaz et al. (2009) found that 66% of people with bipolar disorder, 74% of people with schizophrenia, and 57% of people with major depression smoke tobacco. Strine et al. (2008) investigated tobacco smoking prevalence in anxiety and depression. Tobacco smoking rates for people with a diagnosis in their lifetime of anxiety were approximately 26%, similar to depression at 25.5%. Figures were higher for comorbid diagnoses of anxiety and depression at around 37%.

Morris et al. (2006) conducted a statewide population survey of all people with a mental illness within the public mental health system. They found that males were more likely to smoke tobacco than females, and that people with a diagnosis of bipolar disorder, schizophrenia, or schizoaffective disorder were more likely to smoke tobacco than people with other diagnoses. Finally, they also found differences between ethnic groups with Asian people, Pacific Islanders and Hispanics less likely to smoke tobacco than whites, African Americans or American Indians.

When considering 'quit smoking' programmes within the mental health system, care needs to be taken. Hilton (2007, p.221) cautions that "abstinence from nicotine inhibits liver enzyme production, which can significantly increase levels of prescribed medication". For example, lithium levels need to be monitored as they could fall, whereas clozapine levels could rise and become toxic. Monitoring blood levels before and during smoking cessation is advised. The potential interactions of psychotropic drugs with drugs prescribed to aid cessation is also an issue for clinicians to be mindful of.

2.2.4 Cholesterol

Second generation antipsychotic medications such as olanzapine and clozapine are associated with dyslipidemia, a physical health condition that manifests abnormal concentrations of lipids or lipoproteins in the blood (Ojala et al., 2008). Dyslipidemia is noted through high serum levels of Total Cholesterol (TC), low serum levels of High-Density Lipoprotein Cholesterol (HDL-C), and high Low-Density Lipoprotein Cholesterol (LDL-C) and Triglyceride (TG) levels. Ojala (2008) suggests that statins can be used to effectively lower TC, LDL-C and TG levels in people taking antipsychotic medications.

Levels of leptin, a hormone thought to speed up the body's metabolism and suppress appetite, have been assessed along with Total Cholesterol levels in patients with schizophrenia and patients with major depressive disorder (Jow et al., 2006). Low TC and leptin levels were found in people with major depression, whereas high TC and leptin levels were found in people with schizophrenia. An association was found between the length of illness in schizophrenia and mean leptin and TC levels, possibly suggesting that the longer a person takes antipsychotic medications the higher their leptin and TC levels become.

High cholesterol levels are a major risk factor of coronary heart disease, and Walldius and Jungner (2004) suggest that TC and LDL-C levels may not be the best indicators of coronary artery disease. Some people who manage to dramatically reduce their TC and LDL-C levels still go on to develop cardiovascular disease. In order to reduce this risk, physicians need to aim for higher concentrations of apolipoprotein A1 (apoA1) (the major protein component of high density lipoprotein (HDL) in plasma) and HDL-C, as these components of lipoproteins appear to have better predictive value.

The effects of medication on cholesterol levels have been indicated to differ between races. Daumit et al. (2008) assessed 1125 patients with a diagnosis of schizophrenia over an 18 month period. They were randomly assigned to receive treatment with olanzapine, quetiapine, risperidone, perphenazine or ziprasidone. The double-blind study found an interaction between race and treatment. For Caucasians, HDL-C levels decreased when patients were taking olanzapine or quetiapine, but increased significantly when taking perphenazine. For hispanics, HDL-C levels decreased

when taking olanzapine or perphenazine, but increased when taking ziprasidone.

2.2.5 Dental

Oral health is generally poor in people with mental illness (Burchell et al., 2006; Dickerson et al., 2003; Sjogren & Nordstrom, 2000). They are less likely to report visits to the dentist or to a dental hygienist, yet their needs for dental services are great (Dickerson et al., 2003; Griffiths et al., 2000). In examining the oral health status of psychiatric patients, Sjogren and Nordstrom (2000) found that people experienced problems such as a bad odour coming from their mouth, ulcerated, bleeding and/or inflamed mucous membranes, lips or gums, decayed and/or fractured teeth, calculus on teeth, and an absence of saliva. Results of their study showed that patients in long-term psychiatric care displayed worse oral health status than people in short-term (shorter than three months) psychiatric care.

Burchell et al. (2006) cite reasons such as personal neglect, other medical conditions, poor nutrition, low income, the consumption of sugary foods and drinks, and medication effects such as dry mouth (causing xerostomia). Xerostomia increases the risk of periodontal disease, dental caries, and oral infections (e.g. generalised stomatitis, candidiasis, glossitis, etc.) (Griffiths et al., 2000).

Difficulties in treating this client group include the need for breaks during treatment, the complexity of treatment, unpredictable behaviour, and medical histories that are difficult to obtain resulting in additional consultation with health professionals from other areas (Burchell et al., 2006; Griffiths et al., 2000). Dickerson et al. (2003) cite some perceived barriers from the clients' perspective as a lack of transport and affordability.

Importantly, drug interactions may occur between psychotropic medications and drugs commonly used for oral health conditions (Griffiths et al., 2000). Many result in enhanced sedation, and some produce abnormal responses such as increased heart rate and blood pressure. Dental teams must take these factors into account during treatment, along with other psychotropic drug effects such as dyskinesia and dystonia, which pose problems for denture construction and interfere with the wearing of dentures for mental health consumers.

2.3 PHYSICAL DISORDERS

Physical health disorders that people with a mental illness may have (pre-existing) or may acquire after they receive a diagnosis and treatment can adversely affect both physical health and continuing treatment regimes. A 2007 report by the ABS suggests that 11.7% of the population, or 1.9 million Australians, had both a physical condition and a mental health disorder at the time of data collection (ABS, 2007a).

2.3.1 HIV/AIDS and STI's

The prevalence rates of Human Immunodeficiency Virus (HIV), Acquired Immune Deficiency Syndrome (AIDS) and Sexually Transmitted Infections (STI's) are elevated amongst people with mental illness (McKinnon, Cournos & Herman, 2002; Meade & Sikkema, 2007; Mijch et al., 2006). Little research has been conducted in Australia to determine prevalence rates of HIV among the mentally ill, but Meade and Sikkema (2007) give a US seroprevalence rate ranging from 1.7% to 5% for people with a mental illness as compared to 0.6% in the general population of the US.

An Australian study gave a rate of 17.6% of the HIV-positive population in Victoria as having a mental disorder, where the most common conditions were affective disorder and substance dependence/abuse (Mijch et al., 2006). According to McKinnon et al. (2002), the HIV risk of different mental disorders is predominantly based on assumption rather than evidence, with the majority of the small number of studies that have been conducted finding no relationship between being sexually active and diagnosis and a few finding a relationship with schizophrenia but not bipolar disorder. Positive symptomology does appear to result in greater sexual activity, and sex trading is more likely with people diagnosed with schizophrenia than other diagnoses.

Davidson et al. (2000) assessed sexual risk behaviours in 234 outpatients in Melbourne community mental health clinics. They found that 43% of mentally ill men and 51% of mentally ill women gave reports of sexual activity over the past 12 months as compared to 72% of men and 73% of women in the general population of Australia. Multiple sex partners (three or more) were reported by 32% of mentally ill men and 10% of mentally ill women for the past 12 months. Despite the apparent lower rates of sexual activity in people with a mental illness as compared to the general population, risk factors such as unprotected sex, sex trading (trading sex for money, drugs or other goods) and illicit drug use are more common in self-reported behaviours, resulting in HIV/AIDS and other STI's (Meade & Sikkema, 2007).

Interestingly, in Meade and Sikkema's study (2007), social support emerged as both a preventative factor

and a risk factor. The more social support a mentally ill person had, the more likely they were to engage in sex trading and have multiple sexual partners, but the less likely they were to have unprotected sex. Senn and Carey (2009) conducted a literature search for years up to 2007 investigating HIV testing rates for people with a mental illness. Findings were varied ranging from 17% to 47% of people who had been tested in the past year of each study the authors reviewed, and people who engaged in high risk sexual behaviour or drug use appeared to be most likely to be tested.

2.3.2 Hepatitis B and C

Like HIV and STI's, prevalence rates of the hepatitis B and C viruses are higher among people with a psychiatric disorder as compared to the general population (Rosenberg et al., 2001). Both hepatitis B and C are major causes of liver disease, such as cirrhosis and hepatocellular carcinoma (which develops 10 to 30 years after the person is initially infected), and while a vaccination is available for hepatitis B, none exists for hepatitis C. In the US, prevalence rates for hepatitis C in mental health patients have been described as 11 times higher (19.6%) than rates in the general population (Dinwiddie, Shicker & Newman, 2003). Australian studies examining the prevalence of hepatitis C in mental health consumers are scarce.

Lacey, Ellen, Devlin, Wright and Mijch (2007) evaluated prevalence, risk behaviours and testing rates among 71 psychiatric inpatients of Alfred Hospital in Melbourne between August 2002 and January 2003. Of interest in this study was that one of the criteria for admittance was that participants did not have a known hepatitis C infection. From their sample, the authors obtained a prevalence rate of 19.4% as compared to approximately 1% of the general Australian population (Department of Health and Ageing, 2008). Drug-taking behaviours and multiple sexual partners emerged as the most common risk factors (Lacey et al., 2007).

Goldberg and Seth (2008) examined 108 people with schizophrenia spectrum disorder, a psychotic disorder or bipolar disorder to assess hepatitis C screening and follow-up practices. Previous testing of hepatitis C was reported by 32% of the sample, and there were low rates of immunization. At baseline 31% of people in this study tested positive, with 18 new cases identified. At the six month follow-up, of those new cases, only nine people reported receiving an hepatitis C specific medical follow-up. These findings seem surprising in view of the fact that people within the mental health system already have

contact with health service providers. Rifai et al. (2006) found that despite receiving a referral for treatment once hepatitis C had been confirmed, only 33% of people actually received treatment. Reasons for this were nonadherence to treatment, psychiatric symptoms, and the presence of illicit drugs or alcohol – 11% of their sample died during the study and all of those people had a comorbid alcohol use disorder. The interaction of drugs during treatment does need to be taken into account, and this study found that interferon-α in combination with ribavirin can be safely administered to psychiatric patients.

2.3.3 Cancer

There appears to be conflicting research on cancer incidence and mortality in people with mental illness. Most studies, though, suggest that while many incidence rates are similar to those of the general population, mortality rates are much higher (Kisely et al., 2008; Lawrence et al., 2000; Levav et al., 2009).

A population-based record-linkage study conducted in Nova Scotia, Canada, examined data from 247,344 people who had been in contact with health services for psychiatric problems between the years 1995 and 2001 (Kisely et al., 2008). It found that the incidence was higher than that in the general population for most cancers. Exceptions were ovarian cancer in females, prostate and colorectal cancer in males, and skin melanoma and bladder cancer in both sexes where similar incidences were found between mental health patients and the general population. Overall, the authors found that cancer mortality rates were 70% higher in male and 59% higher in female mental health patients when compared to the general population. In men, the highest cancer mortality rate was for cancers of the brain and for women it was cancer of the uterus.

Lawrence et al. (2000) conducted a population-based linkage study in Western Australia examining data from 172,932 mental health patients. They found no difference in the incidence of cancers in psychiatric patients as compared to the general population. A much higher incidence of cancers of the brain were found, although further investigation revealed that the majority of these cases were of older people and possibly resulted from a misdiagnosis of symptoms as psychiatric disorders rather than brain tumours. The study showed a 40% higher cancer mortality rate in males and a 20% higher cancer mortality rate in females when compared to the general population.

The higher rates of tobacco smoking found in people with a mental illness (ABS, 2007) suggest that there should

be a higher incidence of lung cancer. Evidence for this is mixed as the Canadian study found both incidence and mortality to be higher in a mental health population as compared to the general population (Kisley et al., 2008), whereas the Western Australian study found similar incidence but raised mortality levels for lung cancer (Lawrence et al., 2000). According to a separate study, the highest cancer mortality rates for people with schizophrenia were shown to be lung cancer for men and breast cancer for women (Tran et al., 2009).

Reasons for increased cancer mortality rates have been put down to delays in detection or initial presentation, and difficulties in communication or accessing physical health care, along with lifestyle issues such as tobacco smoking (Kisely et al., 2008; Lawrence et al., 2000). These delays in cancer detection could also be responsible for similar incidence rates between mental health consumers and the general population. It could be that incidence is actually higher amongst mental health consumers, but due to the lack of physical health screening, the different types of cancer are not identified.

2.3.4   Irritable Bowel Syndrome/ Gastrointestinal Dysfunction

Irritable bowel syndrome is characterised by abdominal discomfort or pain, bloating, and diarrhoea and/or constipation (Talley, 2006). The incidence of irritable bowel syndrome in western populations is around 10-15%. For mental illness populations it is somewhat higher. A study examining irritable bowel syndrome symptomology and anxiety and depressive disorders found rates of 25.8% for people with generalised anxiety disorder, 21.7% for people diagnosed with panic disorder, 25% for people with major depressive disorder, 16% for people with obsessive-compulsive disorder, and 11.4% for people diagnosed with social anxiety disorder (Gros et al., 2009). Research on schizophrenia has also found a much higher prevalence rate of 19.5% when compared to a matched control sample of 2.5% (Gupta et al., 1997).

A contentious disorder, irritable bowel syndrome has often been dismissed as a non-organic problem or rather, a psychological problem (Heitkemper & Jarrett, 2001). It is now thought to result from hypersensitivity in the bowel wall, and has been cited as a neurological bowel disease (Talley, 2001), and tends to affect women more so than men. This then leads to a disruption of typical intestinal muscle functioning. Tally cites evidence of central dysregulation, serotonin dysregulation, inflammatory bowel disease, and bacterial overgrowth in detailing the pathophysiology of the disorder (Talley, 2006). Of interest to mental health is serotonin dysregulation, where people who display constipation-predominant irritable bowel syndrome show a reduction in levels of plasma serotonin, yet these levels are increased in people who experience diarrhoea. As 95% of the body's serotonin resides in the gut, "an up or down regulation of the serotonin-norepinephrine system could result in alternating dominance of the signalling pathways, and hence fluctuating symptoms" (Talley, 2001, p.2062).

Karling et al. (2007) found that SSRI's (49%) and benzodiazepines (38%) were more commonly taken among people with a diagnosis of depression who had low irritable bowel symptom scores (as determined by the Gastrointestinal Symptom Rating Scale for irritable bowel syndrome). They also found a strong association between symptoms of irritable bowel syndrome and symptoms of anxiety and depression. Patients in remission showed an equivalent frequency of gastrointestinal symptoms to the comparison group of physically and mentally healthy subjects.

The authors did not state the levels or types of medications patients in remission were taking (if at all), although a meta-analysis conducted by Jackson et al. (2000) found that subtherapeutic doses of antidepressant medications in treating irritable bowel syndrome appeared to be more effective than higher dose trials. Karling et al. (2007) concluded that there was an association between symptoms of irritable bowel syndrome and symptoms of anxiety and depression. It may be suggested then that the more physical discomfort and pain a person experiences, the more anxious and emotionally distressed a person becomes.

2.3.5   Type II Diabetes

Type 2 diabetes occurs when either the pancreas does not produce sufficient insulin, or cells become resistant to insulin. Causal factors have been linked to both genetics and environmental issues such as high blood pressure, a lack of exercise and poor diet which, in turn, result in a person becoming overweight or obese (Diabetes Australia, 2009). The ABS (2008) outlines a rising trend in Australia, with 3.5% of the general population reporting that they had been diagnosed with diabetes (88% had type 2 diabetes) in 2004/2005 to 4% in 2007/2008. The actual figure is likely to be higher in 2009, particularly as many cases remain undiagnosed (ABS, 2008; Diabetes Australia, 2009). Blood glucose control and a healthy lifestyle can prevent type 2 diabetes and in many cases, can improve complications associated with this condition.

The prevalence of diabetes is much higher in consumers of mental health services than in the general population, and elevated levels of blood glucose can be associated with the administration of psychotropic medications.. Cohen et al. (2006) found that of 200 patients diagnosed with schizophrenia or schizo-affective disorder, 7% had hyperglycemia and 14.5% had diabetes. Measurements of fasting glucose in all patients, regardless of prescribed antipsychotic medication, showed a significant increase in prevalence as compared to the general population. Levels of risk appear to increase again when more than one atypical antipsychotic is prescribed, or when quetiapine, clozapine, olanzapine or risperidone are used when compared to people receiving typical antipsychotics alone (Citrome et al., 2004).

Basu and Meltzer (2006) highlight patterns in diabetes mellitus in relation to typical and atypical antipsychotic medications. They suggest that in the pre-atypical antipsychotics era (1979 to 1989) and short-term post-atypical antipsychotics era (1990 to 1995) the occurrence of diabetes in people with a diagnosis of schizophrenia was similar to that of the general population. By 2001, approximately 70% of patients in the US were prescribed the newer, atypical medications. Between 1996 and the year 2001 there was a 0.7% increase per year in diabetes mellitus in patients diagnosed with schizophrenia. Saddichha et al. (2008) conducted a randomized, double blind controlled prospective study in people diagnosed with first episode schizophrenia. They too found that problems have emerged with second generation pharmacotherapy, where antipsychotic treatment had led to the development of diabetes mellitus in 10.1% of patients within six weeks. They suggest that "… the presence of treatment-emergent glucose intolerance and frank diabetes mellitus" is a direct result of atypical antipsychotic medication (Saddichha et al., 2008, p.342).

There is also increasing awareness of the effects of antidepressants on blood glucose regulation. Serotonin (5-HT) contributes to glucose regulation, and medications such as fluoxetine and fluvoxamine have been shown to induce hyperglycemia through an inhibition of insulin release (Yamada, Sugimoto & Inoue, 1999). Increased risk of developing type 2 diabetes according to antidepressant medication has been given at 44% for tricyclics alone, 38% for SSRI's alone, 49% when administered multiple antidepressants, and 60% if tricyclics are taken concurrently with SSRI's (Brown, Majumdar & Johnson, 2008).

Andersohn, Schade, Suissa and Garbe (2009) conducted a large observational study of over 160,000 patients diagnosed with depressive disorder between 1990 and 2005. They found that with long-term use (24 months), tricyclic and SSRI antidepressants given in moderate to high daily doses increase the risk of diabetes by 84%. Other antidepressants such as SNRI's increase the risk of diabetes by 80%.

Assessment of blood glucose levels may need to take sex differences into account. Magliano et al., (2008) found that men with impaired glucose tolerance were more likely to progress to diabetes than women as men have higher fasting plasma glucose. This is despite more women showing impaired glucose tolerance than men. They also found that women with impaired fasting glycemia were more likely to develop diabetes as women have a higher 2-h plasma glucose than men. Again, this is despite more men revealing higher levels of impaired fasting glycemia. The authors suggest that these sex differences may result from measurement issues where a fixed glucose load is used rather than adjusting for average height differences between men and women.

2.3.6   Cardiovascular Disease

Cardiovascular diseases, or diseases of the circulatory system, account for 36% of all deaths in Australia, with stroke and ischaemic heart disease being the two most common causes (ABS, 2006a). In 2004/2005, 3.5 million people (18%) in Australia reported having a long-term cardiovascular condition.   High blood pressure was most commonly reported - 11% of people.

Key risk factors include dyslipidemia (an abnormal concentration of fatty acids, oils, waxes, triglycerides and sterols in the blood), obesity, smoking, hypertension (high blood pressure), and hyperglycemia (high blood sugar) (Newcomer, 2007).

Increased levels of morbidity and mortality from cardiovascular disease can be seen in people with a diagnosed mental illness when compared to the general population (Newcomer, 2007). In addition to the above-mentioned risk factors, research has also examined treatment effects for people with a mental illness. Slordal and Spigset (2006) examined research on non-cardiac drugs that are identified as being associated with the development or worsening of heart failure. Tricyclic antidepressants have well recognised effects on blood pressure, heart rate, and cardiac rhythm, and there is also a suspected direct effect on cardiac contractility. The effects of SSRI's are unclear and mixed at best, and generally thought to have little influence upon myocardial function.

In 2009, Whang et al. examined this further in a cohort of 63,469 female nurses. The study covered a span of nine years, and the authors found an elevated risk of sudden cardiac death associated with antidepressant use in women who had no baseline cardiovascular disease and antidepressant use prior to the commencement of the study. This elevated risk was not associated with severity of depressive symptoms, and possible proarrhythmic effects were implicated. By the year 2000, 61% of these women were taking SSRI's and 39% were taking other antidepressants, and a secondary analysis conducted on data between 2000 and 2004 found that both SSRI use and other antidepressant use were associated with increased risk for sudden cardiac death.

Antipsychotic medications also have well-known effects associated with cardiovascular disease. Slordal and Spigset (2006) cite myocarditis/cardiomyopathy (inflammation and/or disorder of the heart muscle) to be associated with both typical (e.g. chlorpromazine, fluphenazine, and haloperidol) and atypical (e.g. clozapine and risperidone) antipsychotics.

Ray et al. (2001) conducted a retrospective cohort study of 481,744 people, investigating the risk of sudden cardiac death among antipsychotic users who had no evidence of a life-threatening non-cardiac illness. Typical antipsychotics such as haloperidol, thioridazine, chlorpromazine, thiothixene showed at least a 60% greater incidence of sudden cardiac death at a moderate dose (> 100mg thioridazine or its equivalent) than the incidence for sudden cardiac death in non-users.

The CATIE schizophrenia study, conducted between 2001 and 2004, examined data on 1125 people who had been taking psychotropic medication for an average of 14 years before entering the study (Daumit et al., 2008). The baseline risk of cardiac heart disease ranged from 8.1 to 9.1% across all antipsychotic medications. Patients were randomly assigned to receive olanzapine, quetiapine, risperidone, perphenazine, or ziprasidone (added to the study in 2002). Despite the already established baseline risk, after only a few months exposure cardiovascular heart disease risk showed significant changes across antipsychotic medications. Patients taking olanzapine and quetiapine resulted in the highest risk, whereas ziprasidone, risperidone, and perphenazine were associated with a lower overall risk. In addition, 36% of people prescribed quetiapine, ziprasidone, or olanzapine showed an increase in their blood pressure as compared to 27% of people prescribed risperidone or perphenazine. Ethnic differences were also found, with HDL levels significantly increased for caucasians taking perphenazine, whereas HDL levels were significantly increased for non-caucasians taking ziprasidone.

2.3.7   Respiratory Disease

Respiratory disease accounted for 8.4% (11,577 people) of all registered deaths in Australia in 2007 (ABS, 2007b). The majority of these deaths were from chronic lower respiratory diseases (or Chronic Obstructive Pulmonary Disease - COPD) (4.2%) such as asthma, bronchitis and emphysema. There is little reliable information on the prevalence of COPD, but a 12 country international study examining prevalence rates of COPD found that in Australia, 10.8% of people suffered COPD symptoms (Buist et al., 2007). Approximately 11% of Australian adults (15% of children) have asthma (Asthma Foundation Australia, 2009), and almost 1 in 5 people over 40 years of age have COPD (Lung Foundation, 2009).

As a large number of people with a mental illness smoke tobacco (see 2.2.3 Tobacco Smoking), it is likely that respiratory disorders would be more prevalent in this population. Kendrick (1996) interviewed 101 people with long-term mental illness (two years or more) and found prevalence rates of 20.8% for cough and daily sputum, 23.8% for shortness of breath, and 10.8% for wheezing. New Zealand study evaluated prevalence rates of a number of physical health conditions in people diagnosed with a mental illness across ethnic groups. Respiratory disease and mood disorders were evident in 13.9% of Maori people, 17.9% of Pacific Islanders, and 10.3% of people from other ethnicities (British and European). Respiratory disease and anxiety disorders were found in 21.6% of Maori people, 17.8% of Pacific Islanders, and 18.3% of people from other ethnic backgrounds. It appears then that the prevalence of respiratory disease is much higher in people with a mental illness than in the general population, and certain ethnic groups may be more likely to present with respiratory health problems than others.

Frith, Esterman, Crocket and James (2004) examined 283 patients who smoked cigarettes (identified as the most important risk factor for COPD) and displayed respiratory symptoms. Only nine of these patients had been diagnosed with COPD despite the authors' findings that 31% met diagnostic criteria for COPD. They suggest that COPD is often mistaken for asthma, or is simply unrecognised.

2.4   ALCOHOL & ILLICIT DRUG USE

Illicit drug use is a major issue when assessing the physical health of mental health consumers. Although it is a legal substance, alcohol will be included in this section as it is often associated with mental illness. Other substances such as amphetamines, cannabis, cocaine, ecstasy, hallucinogens, heroin, inhalants and anabolic steroids are also prevalent and poly-drug use is common. Through the use of licit and illicit drugs, physical health often deteriorates, and comorbid drug use and resulting physical conditions can cause difficulties in management (Hilton, 2007).

From 2006 to 2007 Australian law enforcement officers seized 5,443 kgs of stimulants (e.g. amphetamines), 4,782 kgs of cannabis, 647kgs of cocaine, and 86kgs of heroin, arresting over 82,300 people on drug offences (Australian Crime Commission, 2009). The quantity of illicit drugs seized nationally is rising in all areas, with amphetamine-type stimulants increasing in weight by 320%, heroin by 192%, cocaine by 1300% and other drugs such as steroids increasing in weight by 63% from 2005/06 to 2006/07. In Australia, cannabis is still the most widely used illicit drug, accounting for 69% of all national drug arrests. In 2004, around 84% of the population had consumed alcohol in the past 12 months (Australian Institute of Health and Welfare, 2007), and 38% of Australians 14 years of age and over had used an illicit drug at some point in their lives.

Substance use disorders are often comorbid with mental illness, in particular, psychotic disorders (Jane-Llopis & Matytsina, 2006). There is some evidence for the self-medication hypothesis in that many people prefer particular substances over others in an attempt to alleviate particular emotional problems they may be experiencing (Khantzian, 2003; Suh et al., 2008), while other theories posit that the emotional problems occur after the person starts abusing licit and illicit substances.

Hambrecht and Hafner (1996) suggest that bidirectional causality is probable, as there is evidence for both and, at times, drug abuse and symptomology emerge simultaneously. In their study of 232 people diagnosed with schizophrenia, they found that 24% of people abused alcohol and 14% of people abused drugs, twice the rate of abuse found in their matched control sample. The temporal order given for those people abusing alcohol or drugs revealed that 32.7% of people had an alcohol problem at least one year before (commonly more than five years before) the first symptoms of schizophrenia appeared, 18.2% of people had an alcohol disorder and the first symptoms of schizophrenia

appear at the same time (within the same month), and 49.1% of people developed an alcohol disorder after the first symptom of schizophrenia appeared. For drug abuse, 27.5% of people abused drugs before the first symptoms of schizophrenia appeared, for 34.6% drug abuse and schizophrenia appeared concurrently, and for 37.9% of people drug abuse occurred after the first symptoms of schizophrenia appeared. This suggests that alcohol and drugs may play a major role in inducing psychosis, but they may also be used in an attempt to alleviate emotional distress.

2.4.1   Alcohol

Alcohol consumption rates in Australia see 21% of people drinking at a level that poses a high risk to their health (ABS, 2008). When broken down into specific age groups, the highest level of reported risk in drinking behaviours was seen in the 25yrs to 34yrs age group for males, and the 45yrs to 64yrs age group for females.

Alcohol use disorders are often associated with anxiety disorders, and relapse rates following treatment are difficult to predict (Kushner et al., 2006; Kushner et al., 2009). It has been suggested that more often than not, the anxiety disorder precedes the alcohol disorder and, therefore, should be treated first. An opposite temporal direction is seen with depression, with a recent review of the literature suggesting that alcohol disorders often precede depression (Jane- Llopis & Matytsina, 2006).

Chronic health complications can be seen with long-term alcohol abuse. Liver dysfunction can typically occur, along with possible brain damage (Hilton, 2007). Wernicke's encephalopathy, a degenerative brain condition, results from vitamin B1 (thiamine) deficiency, and failure to treat this can in turn, result in the irreversible damage of Korsakoff's syndrome. Dependence and withdrawal symptoms such as delirium tremens and seizures can also occur, and detoxification for moderate to severe symptoms needs close monitoring.

Oral, throat and oesophageal cancers have also been associated with chronic alcohol consumption (Australian Institute of Health & Welfare, 2005), and alcohol abuse can also affect the metabolism of prescription drugs, resulting in cardiotoxicity, sedation, and lowering of the seizure threshold (Hilton, 2007).

2.4.2   Other Illicit Substances

Substance use disorders are often comorbid with psychotic disorders (Lambert et al., 2005; Tucker, 2009). Lambert et al. (2005) evaluated 643 patients aged from 15

to 19 years who entered the Early Psychosis Prevention and Intervention Centre (EPPIC) between 1998 and 2000. They found that 74.1% of people presenting with early episode psychosis had a lifetime prevalence of substance use disorder, 61.6% at baseline. Of the 385 people experiencing a first episode psychosis who also had a baseline substance use disorder, 70.6% had cannabis-related disorders, 16.4% had polysubstance use, and 13% used other substances such as opiates, alcohol or amphetamines.

Of note, a review of this research suggests professional unease with the concept of 'drug-induced psychosis' (Tucker, 2009). Crebbin et al. (2009) found little difference in levels of violence and hospitalisation between a drug-induced psychosis group and a first-episode schizophrenia group who were also illicit drug users. One third of the drug-induced psychosis group went on to develop a schizophrenia-spectrum disorder. In a review of longitudinal studies on cannabis use and psychosis, Degenhardt and Hall (2006) found that regular cannabis use was a strong predictor of the reporting of symptoms of psychosis, and an increased risk of schizophrenia emerged.

The physiological effects of amphetamines and related drugs such as ecstasy and cocaine tend to be quite similar, although some drugs are addictive whereas others such as ecstasy are not (Kalant, 2001). Acute effects such as muscular tension, bruxism (teeth grinding), jaw clenching, restlessness of the legs, and increased body temperature tend to occur when the drug is taken. Two to three days after taking the drug, pain and stiffness in the lower back, headache, nausea, dry mouth, blurred vision, loss of appetite, insomnia, and a fluctuating heart rate and blood pressure tend to follow. For some people, hyperactivity, inability to focus, mild hallucinations, depersonalisation, and anxiety can occur. Longer-term use or residual effects can result in serotonin neurotoxicity, impairments of memory, decision making, information processing, greater impulsivity, panic attacks, recurrent paranoia, and psychotic episodes. Major physical toxicity (hepatic, cardiovascular, cerebral, and hyperpyrexic) and even death can result.

McKetin et al. (2008) found that methamphetamine users tended to show poorer physical health if they injected the drug, were long-term users (10 years or more), or had impaired mental health (e.g. an anxiety or depressive disorder). People who were engaged in polydrug use e.g. heroin or pharmaceutical opioids such as prescription analgesics or methadone, and benzodiazepines or antidepressants also showed poorer physical health.

The physical health risk from opioids such as heroin are considerably lower than other drugs (Kalant, 2001). Much of the physical harm produced by heroin is caused from unsterilized needles, needle swapping (e.g. HIV/AIDS, hepatitis C), the intravenous use of drug preparations intended for oral use only (i.e. respiratory death occurring from overdose), and abscesses and cellulitis which tend not to reoccur once drug injection has ceased (Kalant, 2001; Williamson et al., 2008).

Poor physical health can also result from the lifestyle and psychosocial factors with which drug addiction is associated, such as poverty, tobacco smoking, and poor nutrition. In a 24 month longitudinal study of 615 heroin users in Australia, the only significant predictor of physical health status was the amount of time spent in residential rehabilitation (Williamson et al., 2008). Residential rehabilitation provides the basic requirements for good health such as stable accommodation and regular meals which are generally lacking in the lives of heroin addicts.

Anabolic steroids are known performance enhancers, and although they are considered to be controlled substances in countries such as Australia, they are readily available for non-medicinal purposes via e-mail orders and the internet from other countries (Kicman, 2008). The most commonly used steroids in sport are stanozolol, nandrolone, testosterone, and methandienone, and veterinary medications such as trenbolone and boldenone have also been used to enhance performance.

Significant changes in anxiety, aggression, and sexual behaviour have been noted, primarily due to irregular serotonergic and GABAergic transmission (Clark & Henderson, 2003). Cardiovascular events (e.g. myocardial infarction, stroke, sudden cardiac death), cholesterol dysregulation (e.g. high LDL levels, low HDL levels, low apolipoprotein-1 levels), impaired liver function, liver tumours and jaundice, hypomania and depression are among the many adverse effects prominent in the abuse of anabolic steroids (Kicman, 2008).

2.5   PSYCHOSOCIAL

The links between physical and mental health are well established, and have been shown to be bidirectional. People with poor physical health often show lower levels of mental well-being (Kendall-Tackett, 2009; Thomas, 2008). For example, weight gain can seriously impair social relationships through stigmatisation. Alternatively, people with poor mental health tend to have more physical health issues than people with

better mental health (Lawrence et al., 2001; Osborn et al., 2007). Family and intimate relationships, community involvement and friendships, socio-economic status and employment, and culture and religion can all impact upon the physical health of mental health consumers.

Coping resources and processes affect both mental and physical health, and social support is viewed as a key factor in a person's management of stressful events (Taylor & Stanton, 2007). Social support can generally be defined as the provision or receipt of emotional support, intimacy, affection, appraisal and affirmation (Hale et al., 2005). In some cases though, social and emotional support are considered separate entities, with the latter term reserved for feelings and emotions and the former term referring to relationships and interaction in general.

The connection between social and emotional support and physical health has been widely researched, with findings revealing that the lower the levels of emotional and social support, the higher the levels of physical and mental distress (e.g. anxiety and depressive symptoms) (Strine, Chapman, Balluz & Mokdad, 2008). To this end, the provision of social supports for people experiencing health problems is vital.

Jacobson (1986) encourages consideration of the types and timing of social supports linked to the process of coping with psychological and physical health problems. Stressful situations occur in the form of crises, transition, and deficiencies. A crisis is a situation which occurs suddenly and is of limited duration. It is severely threatening to the person's well-being, and results in marked emotional arousal. Transition is where a person goes through a time of change, both personal and relational. This involves a shift in meaning, resulting in changes to the person's way of thinking about themselves and the world around them. Deficiency is defined by chronically excessive demands and a lack of resources to meet those demands. The association between these three kinds of stressful situations is not necessarily linear, as Jacobson suggests. For example, there will be individual differences in the amount of time it takes to typically progress from one situation to the next, some situations may not occur (e.g. transition and/ or deficiency after a crisis), certain situations may occur simultaneously, or a person may start with a deficiency that over time develops into a crisis.

Figure 1 links stressful situations with appropriate types and timing of supports. Support for a person experiencing distress may be given via emotional (i.e. fostering feelings of comfort, care, and security), cognitive (i.e. information,

knowledge, advice), and/or material means (goods and services) (Jacobson, 1986). Although the receipt of support engenders coping and eases stress, it is the timing of these supports that also determine their effectiveness and perceived helpfulness.

Emotional support for a person in crisis allows the expression of feelings – fear, anxiety, emotional distress. On the other hand, a person going through a transitional period in their life would find information helpful, assisting them with decision making and personal direction. Finally, a person experiencing a deficiency (e.g. housing and homelessness) would greatly benefit from material supports (e.g. rent assistance, hostel accommodation).

2.5.1   Familial Relationships

Social and emotional support is associated with a reduced risk of morbidity, mental illness, and mortality, and affects the way in which people cope with stressful events and situations (Uchino, 2006; Strine et al., 2008). The structure and functions of interpersonal relationships reveal how social support provides two distinct pathways of influence upon physical health.

A behavioural pathway facilitates healthy activities such as good nutrition, not smoking, and exercise, whereas a psychological pathway facilitates areas such as positive mood states or feelings of control (Uchino, 2006). Both pathways are linked together and influence each other. For example, a stressed person may reduce their exercise routine due to other pressures in their life, yet exercise may assist in reducing the amount of stress the person feels. Both pathways also have a reciprocal influence on social support processes e.g. psychological distress may influence perceptions of support, and these perceptions may negatively contribute to social interactions.

Taking a lifespan approach, Uchino (2009) suggests that children who experience more parental support and less familial conflict tend to develop a 'positive psychosocial profile'. That is, their levels of perceived support, control, and self-esteem are higher, thus enabling them to cope with life stressors in a more effective, flexible and proactive manner. This is supported by earlier research, where perceptions of close social support from significant others, family, and friends equates to lower levels of depressive symptoms, hassles, and substance abuse (Jackson, 2006). These people also tend to have a healthier diet, show better adaptive care-seeking behaviours, and for women, higher levels of physical exercise.

Hale, Hannum and Espelage (2005) examined the relationship between social support and physical health. The authors found that women reported higher levels of social intimacy such as closeness, emotional self-disclosure, warmth and validation, and more physical symptoms of ill health than men did. Men who reported higher levels of belonging (i.e. connection to groups) tended to report fewer physical symptoms of ill health. This association between feelings of belonging and physical symptoms of ill health was not found with women. Rather, women who reported higher levels of belonging and self-disclosure tended to report better overall health perceptions, yet no association was found with the reporting of physical health symptoms.

The importance of family networks and social supports cannot be understated. Yet appropriate supports for patient needs may not always be provided. Fleury et al. (2008) examined this in 186 outpatients diagnosed with schizophrenia or delusional disorder. For patients in contact with their family, 37% had physical health problems. Despite familial contact, 61% reported a need for daytime activities and social company, 31% revealed a need for intimate relationships, and 33% had a need for sexual expression. No help was obtained from relatives or services in regard to their health for 10.5% of people, social needs (31%), or information and utilities (31%). Patients not in contact with family reported a similar percentage of physical health problems (35%), a lower need for daytime activities (44%), a slightly lower need for social company (50%), a similar need for intimate relationships (26%), and a much lower need for sexual expression (14%). No help was received from relatives or services in relation to health for 10.6% of people, social needs (42%), or information and utilities (27%). This suggests that despite contact with family, many people with mental health issues do not receive adequate supports from either their family or relevant services. It also shows that needs for intimacy and sexual expression are not necessarily being met, regardless of whether the person is in contact with their family or not.

Fan et al. (2007) investigated sexual functioning and quality of life in patients with a diagnosis of schizophrenia. They found high rates of sexual impairment (desire/interest, frequency of desire, sexual arousal, orgasm, sexual pleasure) across clozapine, olanzapine, and typical antipsychotic groups. Overall, 60% of men and 80% of women had impaired sexual functioning.

A review of the sexual side effects of SSRI's and other medications reveals sexual impairment in 24% to 73% of people (Schweitzer, Maguire & Ng, 2009). The authors explain the large variation to be dependent upon the sensitivity of the measure, concluding that it is likely that at least half of the people taking SSRI's experience some form of sexual side effect. Other medication groups that can have adverse sexual side effects are benzodiazepines, antipsychotics, mood stabilisers, antihypertensives, antiepileptics, prostate medications, and recreational drugs.

Effective treatment strategies need to address issues such as perceptions of close emotional and social support, intimacy, and sexual dysfunction, and how this may impact upon the physical health of patients. Family contact in itself is not enough as the supports given may not meet the needs of the person.

2.5.2   Community Involvement

Hale et al. (2005) advised that a sense of belonging impacts upon physical symptoms and perceived overall physical health. Belonging is not restricted to intimate relationships, but can also apply to community engagement and group activities, where a connection to others and having someone to talk to appears to protect people against physical symptoms of ill health.

A qualitative evaluation of a heath programme aimed at reducing obesity in people with severe mental illnesses found that material supports to access fitness facilities, cognitive supports to facilitate understanding of food and nutrition, and emotional supports to develop new friendships provided the most benefit to participants (Shiner et al., 2008). Kindness, being in a non-stigmatizing environment, and having others listen to them allowed participants to gain self-confidence and develop new social skills.
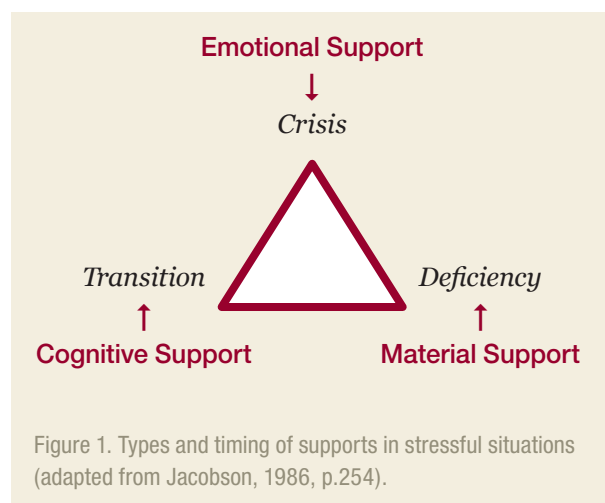

Figure 1. Types and timing of supports in stressful situations (adapted from Jacobson, 1986, p.254).

The advantages provided by the receipt of social support can also be seen in the provision of social support. That is, the mental and physical health of people with a severe mental illness can benefit greatly by providing assistance to others who also have mental health concerns (Bracke, Christiaens & Verhaeghe, 2008).

Bracke et al. (2008, p.453) suggest that mental health services should provide a balance in the receipt and provision of peer support. A peer support network affords a crucial resource that a person can turn to in their time of need. It offers them the opportunity to redefine or interpret their experiences in accordance with others who have had similar experiences. It offers a sense of belonging, love, care, and self-worth. The reciprocal nature of peer support also enhances feelings of self-worth, self-esteem, belonging, and personal and social competence. It affords the person the acknowledgement of their ability to problem-solve, and hence, enhances coping skills and the recovery process.

Davidson et al. (2006) adds that the availability of peer supporters enhances the credibility of the service provider in that the peers offering support drew upon their own experiences of mental illness in order to engage and assist others. It may be then, that the peer supporter's alliance with the support service engenders understanding and acceptance of the client's distress, lending credence to the service provider's ability to offer effective treatment.

A 12 month peer support trial was undertaken in Western Australia to improve the physical health of people with a mental illness (Bates, Kemp & Isaac, 2008). Peer supporters assisted clients to find a GP, increase their physical activity levels (walking), lose weight, link up with community exercise services, quit smoking, and change their diet by adopting healthier eating habits. The peer supporters themselves showed improvement in their own physical and mental health, increased confidence and self-esteem, and some also managed to stop smoking. Pre-trial concerns expressed by clinicians were alleviated, as peer supporters showed a high level of professionalism by maintaining confidentiality and responsibility in their roles. Clinicians could clearly see that the mental health of peer supporters had improved rather than deteriorated. A number of barriers to the success of the trial were noted, such as the rigidity of the organisational culture of mental health, and the insufficient training and insecurity of clinical staff resulting in a lack of understanding and staff reluctance to promote peer support. By the end of the trial clinicians saw the importance of attending to the physical health needs of their clients, and how this improvement promoted better mental health and recovery.

2.5.3 Socio-Economic Status and Employment

The overwhelming majority of the main indicators of health status (e.g. self-rated health, functional impairments, disease-specific morbidity, and mortality) are inversely associated with Socio-Economic Status (SES) (Schnittker & McLeod, 2005). For example, cardiovascular disease is more pronounced in low socioeconomic areas, with 5.2% of people reporting a stroke, heart and/or vascular disease as compared to 2.7% of people in higher socioeconomic groups. Death rates from cardiovascular disease for low SES areas are 20% higher than the more prosperous areas (ABS, 2006).

Unfortunately, low SES has a consistently negative relationship to mental illness (Hudson, 2005). That is, the lower a person's SES, the higher their risk of mental illness. In examining links between SES and mental illness during young adulthood, Miech et al. (1999) found high prevalence rates of anxiety and antisocial disorders but surprisingly, not depressive disorders in low SES areas. Educational attainment, and therefore future prosperity, was not affected by anxiety and depressive disorders, but antisocial disorders showed a high risk of failure in educational pursuits. These results concerning depression don't necessarily hold for people later in life though. Koster et al. (2006) reveal that low education or income levels result in a 50% increased risk of depression in older adults (aged 55yrs to 85yrs). Psychosocial factors such as self-efficacy and social networks tended to be lower and smaller than those of people from higher SES areas.

A low SES also affects the affordability of medications and essential health services. Rising medication costs and changes in co-payments under the Australian Pharmaceutical Benefits Scheme has seen a variation in the scripts being filled by patients (Hynd et al., 2008). No change or an increase was observed in the dispensing of psychotropic medications, yet decreases in medications dealing with physical health side effects such as insulin, statins, and anti-Parkinson's drugs are worrying. A significant decrease in dispensing to people on social security payments suggests a greater potential for adverse health outcomes in people with mental health problems.

While employment generates greater affordability, employment is beneficial to health in many other ways. A recent study on psychoses and employment found unemployment to be associated with more negative symptoms and a poorer quality of life (Turner et al., 2009). Interestingly, people involved in non-labour force work such as students, homemakers, trainees, retirees and volunteers were more like the employed group than the unemployed group in regards to symptoms, quality of life, and functioning. These associations suggest that negative symptoms in psychosis may disable people to the extent that they cannot be gainfully employed. Alternatively, it also suggests that engaging in activity of some sort, whether paid or unpaid, is more beneficial than having no purposeful work at all, and may possibly alleviate some of the negative symptoms of psychosis.

2.5.4   Culture/Religion

Living in a society that is in complete contrast to the values and belief systems of a person or group can be highly stressful and challenging. Differences between religious and cultural beliefs, values and meaning, and practices and customs can result in alienation, discrimination and abuse, serving to isolate the person or group from the rest of society. "Culture includes, but is not restricted to, age or generation; gender; sexual orientation; occupation and socioeconomic status; ethnic origin or migrant experience; religious or spiritual belief; and disability" (Nursing Council of New Zealand, 2009, p.4). Individuals belong to and identify with many different groups. Culture then, is not static but continuously evolving, resulting in diversity not only between cultures but within cultures.

Multiculturalism and religious diversity highlight the need to incorporate culture and religion into the understanding, treatment and support of mental and physical health. The need to respect and consider the views of a client embodies the realisation that different people require different therapeutic assistance. It is essential then, to employ an holistic approach which takes into account the social, emotional, spiritual, and cultural wellbeing of the person and the community as a whole (Pyett, Wapless-Crowe & van der Sterren, 2008).

Language

Communication and understanding are often hindered through language barriers. The Office of Multicultural Interests in WA (2008) note that 27.1% of WA's population were born overseas, with 49.2% of people having at least one parent born in a country other than Australia, and 11.4% of WA's population speak a language other than English at home. In WA, diversity is highlighted through the identification of over 100 religious faiths, and around 270 different languages. The proportion of people who were born overseas and did not speak English very well (or not at all) was 5% as compared to the Australian total of 10%. As many people do not speak English well, the use of interpreters enables better communication and understanding between client and practitioner. In many cases though, the client may prefer to have a family member to assist with their understanding and expression.

The Self and Family

Notions of the interconnectedness of self and family differ throughout the world. Hofstede (1984) introduced the one dimensional structure of individualism versus collectivism, where cultures emphasising autonomy (western) were compared to cultures that emphasise dependence (non-western). This line of thinking was furthered by Markus and Kitayama (1991), proposing independent and inter-dependent self-construals. Sato (2001) offers two self-systems – autonomy and relatedness. In western cultures, high levels of autonomy and moderate levels of relatedness are valued. It is believed that individuals require a strong sense of control, achievement, competence, agency, independence, uniqueness, and separateness from others to maintain emotional/mental health. People in collectivistic (primarily non-western) cultures tend to place greater value upon relatedness, with only moderate levels of autonomy needed to maintain emotional/mental health. Collectivistic cultures emphasise communion, affiliation, connectedness, harmonious relationships, interdependence, and sociality. Fusion with others and emotional attachment throughout life results in a strong sense of unity and is essential to ensure well-being.

The lack of importance placed upon relatedness in western cultures may be quite detrimental to the physical and mental well-being of people who do not hold those same values. For example, indigenous Australians hold very strong beliefs of kinship, community, and spirituality (O'Brien, Boddy & Hardy, 2007). Diagnosis and treatment must be meaningful and relevant to the person and their significant others. Therefore, the clinician must engage not only the ill person, but their family, extended family, and in many cases, their community as well. Issues of relatedness may also arise within western cultures as, although a person may be raised within an individualistic society, their personal values and indeed their family's values may align more strongly with relatedness than with autonomy.

Mental/Physical Health Ideology and Treatment

Values and beliefs also differ between people and cultures on notions of mental and physical illness. Individual variation within cultures suggests that no universal explanation of mental illness can be applied to an entire cultural group (Tyson & Flaskerud, 2009). Individuals and groups consider emotions, thoughts and behaviours within the context of their own society when making determinations of who is and who is not mentally ill.

Western medical explanations and treatments for illness may not carry the same meaning or relevance for people from other cultures. For example, practicing Muslims focus their attention on the soul, and although caring for the body is viewed by Muslim people as essential, it is secondary to the soul (Haque, 2004). Treatment then may incorporate balance, or restoring the flow of energy in the person's social, familial, personal and spiritual life (Tyson & Flaskerud, 2009). In multicultural societies, groups and individuals tend to blend (to differing extents) both modern and traditional explanations and understandings of illness, which are influenced by their political, social, economic, medical, and religious experience.

Health treatments and supports may also differ between communities. Definitions of support are dependent upon beliefs surrounding autonomy, dependency and reciprocity, and these beliefs in turn, shape the way in which people and groups give, receive, accept or reject support (Jacobson, 1986). Culturally adapted interventions and supports allow insight into the lived experience of physical and mental illness, and provide alternative methods of assisting people in need.

An example of this is Motivational Care Planning (MCP), designed for indigenous Australians with mental illness living in remote communities (Nagel, Robinson, Condon & Trauer, 2009). This particular intervention focused on understanding and incorporating local perspectives of mental health through collaboration. The importance of family, a story-telling approach, and traditional and cultural activities emerged for this particular group of people, and MCP revealed improved outcomes when compared to 'treatment as usual'. Importantly, these gains were sustained over an 18 month period.

Cultural Safety

Egalitarian practices where all people are treated equally regardless of their culture can actually work to disempower minority cultures as they do not recognise differences between or within cultures (Australian Government Department of Health and Ageing - AGDHA, 2004; Haswell-Elkins, Sebasio, Hunter & Mar, 2007).

Cultural awareness is viewed as a 'first step' in the understanding of difference, where people learn about cultural groups, behaviours, rituals and practices other than their own (Nguyen, 2008). However, it doesn't acknowledge diversity within groups, or indeed, that culture is dynamic and in a process of continual change. Notions of cultural sensitivity go one step further in that they accept the legitimacy of differences in the experiences and realities of others (e.g. historical, political, economic, emotional, social), yet it still asserts one world view over another, and doesn't provide clients with control and power over their own mental and physical health.

Cultural Safety, on the other hand, is a safe environment for people where there is no denial, assault or challenge to their identity or needs (Williams, 1998). Cultural Safety deals with the process of collaboration – shared respect, meaning, knowledge and experience – where people learn together with dignity, and actually listen to each other. Ball (2008) gives five principles that generate Cultural Safety (see Table 1).

The resulting cultural competence of the integration of Cultural Safety into mental and physical health practice ensures that behaviours, attitudes and policies come together and work effectively in a system, agency or among health professionals (Nguyen, 2008).

Table 1. The five principles of Cultural Safety.

Protocols	Addresses cultural forms of engagement (e.g. informed consent/permission), seeking and sharing cultural knowledge.
Personal Knowledge	Being mindful of your own cultural identity, socio-historic location/power in relation to the client, and personal ideology and commitment to ways of conceptualising mental health and well-being, sharing personally relevant information creates equity and trust.
Partnerships	Sharing knowledge versus 'telling', collaborative practice where those seeking help share in the problem solving versus expert/authority models.
Process	Ensuring equity and dignity, negotiating goals and activities, talking less and listening more, frequent checking to ensure that proposed solutions fit with the client's values, preferences and lifestyle.
Positive Purpose	Building on strengths and avoiding negative labelling, ensuring confidentiality, being accountable, doing no harm, making it matter and ensuring real benefits.

The physical health assessment and ongoing monitoring of mental health consumers involves collaboration and partnership between mental and physical health staff and consumers. The literature review revealed five major domains of physical health prevalent for mental health consumers. Within these domains, key components for assessment were identified:

1) *Medication effects - antipsychotics, antidepressants, anxiolytics, mood stabilisers*

2) *Lifestyle issues - exercise, diet, smoking, dental, cholesterol*

3) *Pre-existing or developing physical conditions – including HIV/AIDS and STI's, hepatitis C and B, cancer, irritable bowel syndrome, type 2 diabetes, cardiovascular disease, respiratory disease*

4) *Alcohol and Illicit drug use - alcohol, other substances*

5) *Psychosocial issues - familial relationships, social/ community involvement, Socio-Economic Status and employment, culture and religion*

The ongoing monitoring of these key areas of health ensures equality of health care across Australia's diverse population. The intricacies of the monitoring process can be eased through the guidance and application of a user-friendly, time-efficient, cost-effective, and informative assessment package based upon best practice methodology. Coordination of services involving mental health clinicians, general practitioners and physicians at the local level is crucial.

3.1 INPATIENT / OUTPATIENT AND COMMUNITY PHYSICAL HEALTH CARE

The assessment protocols proposed here take a biopsychosocial approach to physical health assessment. The Clinical Guidelines for the Physical Health Screening of Mental Health Consumers package can be used and/ or adapted for inpatient, outpatient, or community care situations. This package serves as an aid to mental health clinicians and GP's in the physical care of mental health consumers. It focuses on screening and monitoring, not specific treatments, which should be carried out by qualified clinicians In order to assess the key dimensions of physical health for mental health consumers, three avenues of investigation are to be taken:

• *Medication monitoring*

• *Physical investigations, and*

• *Lifestyle and psychosocial assessment*

Each of these areas requires specific tools that have been either sourced or developed for the Clinical Guidelines package. A clinical algorithm wall chart for monitoring metabolic syndrome in mental health consumers starts off the package, giving indices and monitoring recommendations for waist circumference, blood pressure, fasting lipids, and fasting blood glucose[1] (see Appendix 1). This represents the basic physical assessment to be conducted. In order for an informative, individualised assessment to occur, a general screening form[2] (see Appendix 2) is provided, where all consumer results are noted. This screening form spans a time period of 24 months, allowing for an initial baseline measurement and an overall view of the consumer's physical health to reveal any changes that may be occurring over time.

Each major category of medication (and sometimes individual medications) will require specific tests. Working in collaboration, the monitoring of consumer medication and physical health examinations and investigations are to be directed and conducted by the consumer's psychiatrist and/or general practitioner. To this end, the general screening form lists the tests needed for each medication/medication category.

A second screening form has also been provided which outlines additional tests required for specific medications, and a third and separate screening form has been provided for clozapine. In the case of multiple medications being prescribed, the Psychiatrist/GP selects the general screening form plus the additional screening form. The main results are placed upon the general form and specific medication tests for the second drug that are not covered on the first form need to be highlighted and monitored on the second form.

The physical examination/investigation conducted by the consumer's GP should take note of existing and/ or developing physical health conditions common for mental health consumers. These include conditions such as Irritable Bowel Syndrome and gastrointestinal complaints, and cardiovascular disease. A Clinician Handbook is included which provides evidence-based information on specific medical tests and side-effects for each category of medication (including the normative ranges for each test), common physical conditions occurring significantly more often in mental health consumers as compared to the general population,

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1 Taken from Waterreus & Laugharne (2009). Screening for the metabolic syndrome in patients receiving antipsychotic treatment: a proposed Algorithm

2 Adapted from the PaRK Mental Health Service Screening Protocols – Shymko, Muldoon & Bruton (2009)

and a brief overview of lifestyle, alcohol and illicit drug issues, and psychosocial issues. Findings relevant to the physical examination/investigation should be noted on the general screening form.

The Psychosocial Assessment booklet (colour-coded to match the general medication screening forms) can be completed by the psychiatrist, the GP, a mental health nurse or a case worker. The booklet includes tools assessing the dimensions of lifestyle (exercise[3] and diet[4], smoking[2], dental[5], sexual activity[6]), illicit drug use (alcohol use[7] and dependence[8], other drug use[9] and dependence[10]), and psychosocial aspects (culture/religion[11], psychosocial supports[12]).

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3   Adapted from Lifescripts – Department of Health & Ageing (2008)

4   Adapted from World Health Organisation (2004)

5   Adapted from Griffiths et al. (2000) - Oral health care for people with mental health problems: Guidelines and recommendations

6   Adapted in part from Ware & Sherbourne (1992) – Medical Outcomes Study (MOS) Sexual Functioning Scale

7   AUDIT - Babor, de la Fuente, Saunders, & Grant (1992)

8   SADQ-C - Stockwell, Sitharan, McGrath & Lang (1994)

9   DAST - Skinner (1982)

10 SDS - Gossop, Darke, Griffiths, Hando, Powis, Hall & Strang (1995)

11 Based on notions of Autonomy and Relatedness (Sato, 2001), and Cultural Safety (Williams, 1998)

12 Based on Jacobson's (1986) 'types and timing of social supports', and the MOS Social Support Survey developed by Sherbourne and Stewart (1991)

The cultural/religious/spirituality component has been placed at the front of the booklet to allow the assessor to first develop rapport and gain understanding of the consumer's point of view. The psychosocial supports assessment has been placed at the end of the booklet enabling an evaluation of what kinds of supports will be needed to ensure successful monitoring of physical health (e.g. someone to offer emotional support, getting to the doctor, etc.), and encourage positive change. These surveys can be completed by either the consumer or the assessor, and the results are to be placed on the general screening form.

In essence, the Clinical Guidelines package provides an over-arching, individualised, evidence-based evaluation of each consumer's physical health status. It is recommended that wherever possible, assessment is conducted within 48hrs of the consumer's first presentation to the mental health service, and that the initial assessment results be used as a baseline from which to monitor ongoing health status.

3.2 DISTINCT POPULATIONS

The physical health care of distinct groups of people within the mental health population may require additional consideration in regard to the issues that they face. The resulting treatment plan should make allowances for issues such as age, ethnicity, pregnancy, and disability.

3.2.1 People Over 65 Years of Age

The physical healthcare of consumers who are older persons should be adjusted accordingly, as older persons more frequently suffer from interrelated medical, psychiatric and social issues. The initial assessment should have particular focus upon physical health (NSW Department of Health, 2009, p.23-25). It should be remembered that older persons are particularly at risk of problems related to:

a) *Falls*

b) *Multiple medication use*

c) *Malnutrition*

d) *Pressure areas (if they have reduced mobility)*

e) *Musculo-skeletal limitations and pain*

f) *Constipation*

g) *Cancer (Lawrence et al., 2000)*

Assessment and management must take this into account. Additional challenges to obtaining an accurate and complete history may exist in some older people. These may include hearing or visual impairment, memory impairment, and minimisation of symptoms or conditions due to perceived social attitudes or in order to please the health staff. Consent to examination and treatment can also be a complex issue with the elderly.

In new presentations and in relapse of established illness in older persons, it is important to take delirium into account and to communicate closely with community practitioners. The possibility of elder abuse should also be considered in situations of trauma.

3.2.2 Children/Adolescents

At initial assessment of a child or adolescent consumer, physical examination may include developmental assessment and specific issues such as screening for sensory deficit in developmental delay (NSW Department of Health, 2009, p.23-25). It is also important to be aware of potential issues, such as physical or sexual abuse, and to remain alert for physical signs. Particular considerations when conducting a physical examination of children or adolescents include:

a) *Organisation – having a planned approach and ensuring equipment is in good working order and close to hand will help children and adolescents to feel confident and enable the examination to go smoothly.*

b) *Flexibility – this is a critical element in the physical examination of children and adolescents and should be adopted in the overall care and treatment of this group. For example, the presence of a parent or the use of a doll (to explain a procedure) may be appropriate.*

c) *Safety – be careful of fittings and equipment in the examination area. Reviewing the environment from a 'child's perspective' (i.e. below adult eye level) may assist in this process.*

d) *Communication – explaining what is happening in age-appropriate language and reassuring the child or adolescent is vital. Obtaining feedback from them to assess their understanding of procedures is recommended and is likely to improve their co-operation.*

e) *Privacy – younger children may prefer the parent/ carer to be in the room but modesty will still be important; older children are often extremely sensitive about their bodies and may prefer privacy while taking a history and/or conducting a physical examination – this should be respected and will foster a more relaxed atmosphere.*

In Western Australia, the 1996 Mental Health Act (MHA) "…does not specifically address minors but applies to everyone, regardless of age. Whenever possible and where appropriate, legal guardians should be involved in the decision-making process when a minor is referred under the MHA" (WA Department of Health, 2009, p.2).

If there are circumstances that make it unclear if the involvement of a young person's parents or guardians is safe or practical, consultation with Child Protection Services should be sought. In circumstances where the consumer is a young person for whom the Minister or Director-General of Community Services has parental or care responsibility, a Department of Community Services caseworker should participate in the planning process.

Health staff should be familiar with the key objectives within Our Children Our Future: A framework for Child and Youth Health Services in Western Australia 2008-2012 (WA Department of Health, 2008).

3.2.3　Aboriginal and Torres Strait Islanders

The specific historical, cultural, spiritual and social issues of Aboriginal people must be taken into consideration when identifying and addressing their physical health needs (NSW Department of Health, 2009, p.23-25).

Many chronic diseases within the Aboriginal and Torres Strait Islander population such as diabetes, hypertension, cardiovascular disease and chronic renal failure are significantly more prevalent than for the general population (National Aboriginal Community Controlled Health Organisation - NACCHO, 2005). As a consequence, life expectancy is much lower. For example, the average life expectancy of an Aboriginal or Torres Strait Islander male is almost 21 years lower than that expected for all males in Australia - 56 years as compared to 76.6 years (ABS, 2001).

Many Aboriginal people's contact with government services may have been negative, which can cause suspicion and mistrust. This may be acutely important for Aboriginal people with mental health problems and disorders. It is recommended that mental health staff dealing with Aboriginal consumers should familiarise themselves with the National Aboriginal Community Controlled Health Organisation/Royal Australian College of General Practitioners' National Guide to a Preventive Health Assessment in Aboriginal People, available online at:

www.racgp.org.au/aboriginalhealthunit/nationalguide

Another recent source is the Third Edition (2007) of Murray and Couzos, Aboriginal Primary Health Care.

Physical examination and care and treatment of physical health needs should reflect the key principles for working with Aboriginal communities, including:

a) *Services working in partnership*

b) *Holistic approach to mental health*

c) *Flexibility*

d) *Accessibility of services*

e) *Ability to follow people across areas*

f) *Respect and sensitivity for indigenous people*

g) *Involvement of family and others in care*

h) *Treating an individual as part of a family and the community*

i) *Provision of education and training*

j) *Illness prevention*

Health staff should liaise with specialist Aboriginal health representatives in their area (e.g. Aboriginal Mental Health Workers or Aboriginal Medical Services) to ensure that their approach to providing physical health care for Aboriginal consumers is consistent with the needs of the local Aboriginal community.

The process should also:

a) *Provide the consumer and family with relevant 24-hour contact numbers for assistance*

b) *Identify community liaison contact(s) who can engage additional support for the consumer such as extended family, elders and community members.*

c) *Ensure actions are taken to resolve precipitating events and other life stressors*

d) *Refer the consumer to Aboriginal health or medical services whenever possible*

e) *Enquire as to whether the consumer wishes for family to be present at the time of physical examination*

3.2.4　Pregnancy

If a consumer is pregnant, it is critical that her physical health is monitored and any health issues or disease identified early (NSW Department of Health, 2009, p.23-25). Health staff should also:

a) *Carefully weigh the potential risks and benefits of any medication the consumer may currently be taking and discuss these findings and treatment alternatives with the consumer.*

b) *Ensure the consumer is connected with antenatal services and assist with booking if required.*

c) *With the consumer's consent, liaise with appropriate maternity services (perinatal psychiatrist/perinatal mental health coordinator).*

After the birth, early childhood nurses can provide, or facilitate access to, psychosocial support, guidance and monitoring of the infant's progress. If there are concerns about the health and safety of the child, consideration may need to be given to reporting concerns of prenatal risk of harm.

3.2.5 People with Intellectual Disabilities

Cognitive and communication difficulties can make it hard for people with intellectual disability to recognise and communicate pain or other symptoms of ill health (NSW Department of Health, 2009, p.23-25). Involving family members or other support workers will support the identification of health issues and the provision of a medical history. However, these support people may be unaware of symptoms, and an accurate history may be difficult to obtain. It should also be noted that:

a) *Physical examination may be difficult due to anxiety or challenging behaviours in the person with intellectual disability*

b) *The combination of difficulties with communication, accurate history taking and physical examination may mean that assessments are lengthy, so adequate time should be allocated for this*

c) *There is a risk of 'diagnostic overshadowing', where physical or behavioural symptoms may be ascribed to the intellectual disability, and a physical or mental health disorder overlooked as a result*

The specific medical conditions and risk factors that prevalence studies have identified occur more frequently in people with intellectual disability should be considered. The International Association for the Scientific Study of Intellectual Disability (IASSID) has made recommendations for the detection and management of these conditions in people with intellectual disability (2002) (see www.iassid.org).

The IASSID Health Guidelines for Adults recommend action in the following areas:

Dental health
Sensory impairments
Nutrition
Constipation
Epilepsy
Thyroid disease
Gastro-oesophageal reflux disease and H.pylori
Osteoporosis
Medication review
Immunisation status
Physical activity and exercise
Comprehensive health assessments
Genetics
Women's health

3.2.6 People from Culturally and Linguistically Diverse Backgrounds *(CALD)*

Physical care and examinations for consumers from Culturally and Linguistically Diverse Backgrounds (CALD) requires a culturally sensitive approach (NSW Department of Health, 2009, p.23-25).

Health professionals should be aware of their own values and beliefs. It is recommended that, when working cross-culturally, staff approach CALD consumers with sensitivity and respect for the social context of the consumer's problems. It is important to understand the personal meaning of the illness for the consumer, their family, and their community. The process should take into account the following factors:

a) *Lack of proficiency in English*

b) *Impeded access to health services due to language difficulties and cultural expectations*

c) *Lack of awareness of available community services*

d) *Stressors experienced during the process of adapting to mainstream Australian culture*

CALD consumers and their families should have access to interpreter services to facilitate the treatment planning process where appropriate, including three-way telephones or conference phones for use with telephone interpreters. Health staff should refer to the WA Charter of Multiculturalism (2004).

Where complex or unknown cultural dynamics are involved, cultural advice should be sought from the Multicultural Services Centre of Western Australia Inc. (MSCWA) (see www.mscwa.com.au/).

Consultation and collaboration across the health sector has been an important part of the process in developing these Guidelines.

Once the first draft of the Clinical Guidelines for the Physical Care of Mental Health Consumers assessment and monitoring package was complete, each key stakeholder was sent a Clinical Guidelines package.

Feedback on this package was sought through reference group consultation, and if attendance was not possible, stakeholders were able to make comment via other means (e.g. email, post, phone).

Specific mental health group representation and feedback was gathered from consumers and carers, general practitioners, GP liaison officers, nursing staff and nurse practitioners, psychiatrists and psychologists.

A diverse range of general health service representatives were also consulted in the feedback process.

Service providers represented:

Dental Health WA

Department of Health, WA

Fremantle Hospital

GP Network, WA

Great Southern Mental Health Services

HealthRight

Health Networks Branch, Department of Health WA

Infant, Child, Adolescent and Youth Mental Health Service, Graylands Hospital

Multicultural Services, South Metropolitan Area Health Service

Office of the Chief Psychiatrist, WA

PaRK Mental Health Service

Personal Helpers & Mentors Program, Albany

Rural Clinical School of Western Australia

State Forensic Mental Health Service, WA

Statewide Mental Health Governance & Performance

Community, Culture & Mental Health Unit, The University of Western Australia

Western Australian Country Health Service

From the consultation process, three key areas of concern emerged. Firstly, general complaints of a lack of standardisation across services for physical health assessment of mental health consumers were received. For example, it is not currently known what each service is screening for (if at all), or how often this is occurring. In this respect, stakeholders were pleased that Clinical Guidelines had been developed and were almost ready to be initiated.

A second point of concern was how to implement the Clinical Guidelines and achieve consistency across clinics. It was suggested that each clinic may need to develop a management plan, dependent upon issues such as staffing levels and available services (e.g. regional areas may experience difficulties accessing some services). Also, success will depend in part upon coordination between health professionals to prevent repetition of screening or failure to screen.

The third issue raised during consultation was the sustainability of the Clinical Guidelines. A built-in review mechanism would be needed for all dimensions, particularly the medication testing and normative ranges as new research findings may warrant change.

Detailed feedback was also received on the structure of information in each component of the package. Changes and adaptations were made to the first draft, allowing for a better fit with the practicalities of physical health assessment of mental health consumers. In general, feedback was overwhelmingly positive and many people looked forward to the introduction of the Clinical Guidelines package on the basis that it would have a positive impact on the physical health care of mental health consumers.

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7

Appendices

Appendix 1 - Clinical Algorithm for monitoring metabolic syndrome in mental health patients

Fasting Blood Glucose

- <5.6mmol/L
- 5.6-7mmol/L → Oral glucose tolerance test or refer to GP
- ≥7mmol/L
- ≥11.1mmol/L
- <11.1mmol/L
- Diagnose diabetes
- Treat / refer to GP; Review change in medication; Consider referral to physiotherapy or group program
- Repeat monitoring - 3 monthly

Fasting Lipids

- Triglycerides <1.7mmol/L
- Triglycerides ≥1.7mmol/L
- HDL ≥1.03mmol/L (M) / ≥1.29mmol/L (F)
- HDL <1.03mmol/L (M) / <1.29mmol/L (F)
- Review medication; Treat/refer to GP; Consider referral to physiotherapy or group programme
- Repeat monitoring - 3 monthly

Blood Pressure

- <130mmHg / <85mmHg
- ≥130mmHg / ≥85mmHg
- Review medication; Treat/refer to GP; Consider referral to physiotherapy or group programme
- Repeat monitoring - 3 monthly

Waist Circumference

- <94cm (M) / <80cm (F) Europid
- <90cm (M) / <80cm (F) Asian
- ≥94cm (M) / ≥80cm (F) Europid
- ≥90cm (M) / ≥80cm (F) Asian
- Review medication; Treat/advise weight problem; Consider referral to physiotherapy or group programme (Healthy Lifestyle Group)
- Repeat monitoring - 3 monthly

Within normal range - no action required
Further action needed
Treatment is required

Based on Watereus & Laugharne (2009). Screening for the metabolic syndrome in patients receiving antipsychotic treatment:a proposed algorithm. MJA, 190 (4), 185-189.

(M) Male
(F) Female

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GENERAL SCREENING FORM

NAME: HEIGHT (CM):   DATE COMMENCED:

	DATE	Baseline	3 Months	6 Months	9 Months	12 Months	15 Months	18 Months	21 Months	24 Months
MEDICATION	BP (mmHg)	/	/	/	/	/	/	/	/	/
	f BSL (mmol/L)									
	Glucose Tolerance Test									
	LFT									
	Vitamin D									
	U & E's									
	ECG									
LIFESTYLE	Cholesterol: TC									
	TG									
	HDL-C									
	LDL-C									
	Exercise: Weight (kg)									
	BMI (kg/m²)									
	Abdo. Girth (cm)									
	Activity Level									
	Diet: Nutritionist									
	Eating Guide									
	Smoking: Yes/No									
	Dental: Last Appointment									
	Contraception:									
PHYSICAL DISORDERS & ALLERGIES										
	HIV / STI's									
	Hepatitis C / B									
	Pregnancy Test									
ALCOHOL & ILLICIT DRUG USE	Alcohol: AUDIT									
	SADQ-C									
	Other Drugs: DAST-10									
	SDS									
PSYCHOSOCIAL	Familial Support									
	Social Support									
	SES & Employment									
	Culture									

NAME: **HEIGHT (CM):**   **DATE COMMENCED:**

	DATE	Baseline	3 Months	6 Months	9 Months	12 Months	15 Months	18 Months	21 Months	24 Months
ANTIPSYCHOTICS / MOOD STABILISERS	AIMS: Facial-Oral									
	Extremities									
	Trunk									
	Global									
	Prolactin									
VALPROIC ACID	FBP									
	Prothr. Time									
	Serum Valproic Acid									
LITHIUM CARBONATE	FBP									
	Urinalysis									
	TSH									
	Serum Lithium									
CARBAMAZEPINE	FBP									
	TSH									
	Serum Carbamazepine									

NAME: **HEIGHT (CM):** **DATE COMMENCED:** **BLOOD TYPE:**

Baseline / Week	B/L 10	Week 1/11	Week 2/12	Week 3/13	Week 4/14	Week 5/15	Week 6/16	Week 7/17	Week 8/18	Week 9/19
Date										

MEDICATION

Test	B/L									
FBP										
ECG										
Troponin T										

	Baseline	3 Months	6 Months	9 Months	12 Months	15 Months	18 Months	21 Months	24 Months	27 Months
FBP (monthly)										
ECG										
Troponin T										
LFT's										
U&E's										
Vitamin D										
BP (mmHg)	/		/	/	/	/	/	/	/	/
f BSL (mmol/L)										
Glucose Tolerance Test										
Echocardiogram										
Temperature										
Pulse										

LIFESTYLE

Cholesterol: HDL-C										
LDL-C										
TC										
TG										
Exercise: Weight (kg)										
BMI (kg/m²)										
Abdo. Girth (cm)										
Activity Level										
Diet: Nutritionist										
Eating Guide										
Smoking: Yes/No										
Dental: Last Appointment										
Contraception										

PHYSICAL DISORDERS & ALLERGIES

HIV / STI's										
Hepatitis C / B										
Pregnancy Test										

ALCOHOL & ILLICIT DRUG USE

Alcohol: AUDIT										
SADQ-C										
Other Drugs: DAST-10										
SDS										

PSYCHOSOCIAL

Familial Support										
Social Support										
SES & Employment										
Culture										

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