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**Mental Capital and Wellbeing:
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**State-of-Science Review: SR-B10
The Influence of Social, Demographic, Physical and any other Risk Factors
on the Prevalence and Consequences of Personality Disorders**

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*This review has been commissioned as part of the UK Government's Foresight Project,
Mental Capital and Wellbeing. The views expressed do not represent the policy of
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Summary

Personality disorders are among the most controversial of all mental disorders. Nevertheless, the term is indispensable to clinical practice because of its predictive utility. Four per cent of the population have a personality disorder and individuals experience significant disability and excess mortality and morbidity. Consequently, people with personality disorder place a high demand on health, criminal justice and social services and are expensive to manage.

A genetic diathesis acted on by adverse environmental experience seems to be necessary for the development of personality disorder. Moreover, environmental factors of aetiological importance are highly prevalent in British society. It is, therefore, reasonable to speculate that, over the course of time, in turn, the prevalence of personality disorder within British society will increase. Nevertheless, currently, there is no good evidence for a significant change in the prevalence in the UK. One possible explanation for this might be that any increase in prevalence has been offset by a corresponding increase in mortality, which is raised among those with personality disorder.

1. What are personality disorders?

The *International Classification of Mental and Behavioural Disorders (ICD-10)* (World Health Organization, 1992), defines a personality disorder as: *'a severe disturbance in the characterological condition and behavioural tendencies of the individual, usually involving several areas of the personality, and nearly always associated with considerable personal and social disruption'*. The fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)* (American Psychiatric Association, 1994) defines a personality disorder as: *'an enduring pattern of inner experience and behaviour that deviates markedly from the expectations of the individual's culture'*.

There are nine categories of ICD-10 personality disorder and 10 categories of DSM-IV personality disorder. DSM-IV groups the subcategories of personality disorder into three broad 'clusters' of personality disorder:

1. Cluster A (the 'odd or eccentric' types): paranoid, schizoid and schizotypal personality disorders. These are characterised by oddness, difficulty mixing with others and paranoid thinking.
2. Cluster B (the 'dramatic, emotional or erratic' types): histrionic, narcissistic, antisocial and borderline personality disorders. These are characterised by problems with impulse control, and affect regulation and relationship instability.
3. Cluster C (the 'anxious and fearful' types): obsessive-compulsive, avoidant and dependent. These disorders are characterised by anxiety, excessive dependency on others and obsessional behaviour.

The above grouping system is based on descriptive similarities and has not been consistently validated.

2. A controversial but necessary diagnosis

Personality disorders are among the most controversial of all mental disorders. The current classification system for personality disorder lacks a robust scientific foundation (Widiger & Costa, 1994). In the absence of detailed knowledge about aetiological factors, the current taxonomy relies completely on descriptive features – a situation akin to the pre-Sydenham era in medicine, when fever and rashes were studied as separate diseases. However, this problem is not unique in the field of mental disorder, and some of the concerns about the classification of personality disorder may be addressed in the forthcoming revision of

DSM (Widiger, 2000). Even so, firmer grounds for diagnosis based on more objective criteria are urgently needed.

Another serious concern with the diagnosis is that, historically, the label of personality disorder may have resulted in the stigmatisation and therapeutic neglect of some individuals (Lewis and Appleby, 1988; Ramon et al., 2001). Nevertheless, it is widely acknowledged that the construct of personality disorder is indispensable to clinical psychiatry because of its predictive utility. A series of studies have shown that personality disorder is associated with considerable added burden in terms of suffering, disability and mortality.

3. The prevalence of personality disorder

In a recent community survey, the prevalence of personality disorder in the British population was reported to be 4% (Coid et al., 2006). Personality disorders tend to be more frequent among single individuals from the lower socioeconomic classes living in urban locations (Torgersen et al., 2001). The figure of 4% is equivalent to approximately 2.4 million people, although the prevalence of clinically significant problems within this subpopulation is likely to be far smaller. Indeed, the nature of the problems experienced by people with personality disorders varies considerably; whilst some are able to negotiate life reasonably successfully, others suffer greatly and place a heavy burden on those around them.

With specific regard to borderline personality disorder (BPD), this is a condition thought to occur throughout the world (Pinto et al., 2000), although outside of the Western world, its prevalence in community settings has been relatively under-explored. Only three published surveys have used large representative samples of adults and systematically assessed them using a structured interview for personality disorder (Coid et al., 2006; Torgersen et al., 2001; Samuels et al., 2002). The median prevalence of BPD across these three studies was 0.7%. BPD is significantly associated with younger age, living in a city centre and not living with a partner.

In primary care, the prevalence of BPD ranges from 4-6% of consecutive primary attenders (Moran et al., 2000; Gross et al., 2002). Compared to non-personality-disordered attenders, BPD patients are more likely to visit their GP frequently and to report psychosocial impairment. In spite of this, BPD appears to be under-recognised by GPs (Moran et al., 2001).

In mental health care settings, the prevalence of all personality disorder subtypes is high, with many studies reporting a figure in excess of 50% of the sampled population. BPD is generally the most prevalent category of PD in non-forensic, mental health care settings. It is particularly prevalent among patients suffering from drug and alcohol dependence, eating disorders (Zanarini et al., 1998) and also among patients presenting with chronic self-harming behaviour (Linehan et al., 1991). Antisocial personality disorder (ASPD) has been the most consistently studied personality disorder in surveys of psychiatric morbidity. It appears to be recognised in most societies and has a prevalence of about 1% (Torgersen et al., 2001). In the community, the prevalence of ASPD is higher among males, younger single individuals and those from educationally-disadvantaged backgrounds. It is a chronic condition associated with a number of medical and social problems, including substance abuse, self-harm and criminal behaviour (Moran, 1999).

In England and Wales, the highest prevalence of ASPD is found in the prison population, where it has been estimated that as many as 49% of male sentenced prisoners and 31% of female prisoners meet diagnostic criteria for ASPD (Singleton et al., 1998). However, it is unclear how many prisoners with ASPD have problems that might benefit from psychiatric treatment. Moreover, we lack robust evidence to form firm conclusions about the treatability of this condition. Whether such individuals are better managed by the Criminal Justice System or the Health Service remains unclear and has been the subject of intense debate and speculation (Moran, 2002).

4. The impact of personality disorder on individuals and society

Longitudinal research has shown that people with personality disorder experience significant disability (Skodol et al., 2005) and excess mortality (Hiroeh et al., 2001; Harris & Barraclough, 1997). Part of the explanation for this finding lies in the fact that people with personality disorder are vulnerable to accruing additional health problems such as substance misuse (Moran et al., 2006), self harming behaviour (Krysinska et al., 2006) and depression and anxiety (Mulder, 2004). Other research has shown an association between personality disorder and physical health problems such as cardiovascular disease (Moran et al., 2007); the increased risk is not explained by differences in social economic status or life style. The management of co-morbid mental illness is more complex in the presence of personality disorder. For example, a recent meta-analysis has shown that combined depression and personality disorder is associated with a poorer outcome than depression alone (Newton-Howes et al., 2006) and, in the management of psychosis, the presence of comorbid personality disorder predicts the occurrence of incidents of violence to self and others (Moran et al., 2003; Moran et al., 2003).

Given the extent of the above problems, unsurprisingly, people with personality disorder place a high demand on health and social services and are expensive to manage (Rendu et al., 2002; Bender et al., 2001). In addition to these excess economic costs, other wider effects of personality disorder include associations with offending behaviour (Hodgins et al., 1996), homelessness (Koegel et al., 1988) and domestic violence (Dinwiddie, 1992). Living with someone with a personality disorder can be an extremely stressful experience, and informal carers require unique support (Hoffman et al., 2005). Moreover, because people with personality disorder experience great difficulty in negotiating relationships with others, they frequently come into conflict with the professionals who are trying to help them. Consequently, individuals with PD are over-represented among populations of 'difficult patients' (Hinshelwood, 1999).

5. Aetiological research into personality disorders

5.1 *Physical risk factors*

For some time now, it has been known that there is a genetic contribution to the development of both normal and abnormal personality characteristics (Bouchard., 1994). In 2000, Torgersen and colleagues from Oslo University published the first twin study to investigate the complete range of DSM personality disorders (Torgersen et al., 2000). The main part of their sample was ascertained by matching the Norwegian Twin Register with the National Register for Mental Disorder. Thus, their sample was largely derived from a clinical population. Zygosity was determined by means of a questionnaire. Based on twin and patient registries, 92 monozygotic and 129 dizygotic twin pairs were interviewed with a structured interview to assess for personality disorder. Structural equation modelling was used to determine heritability estimates.

The best fitting models produced a heritability of 0.60 for personality disorders generally (i.e. 60% of the variation in PD across this population was the result of differences in participants' genotype). Heritability for cluster A PDs (see above) was 0.37, 0.60 for cluster B PDs, and 0.62 for cluster C PDs. As the study was drawn from a clinical sample, this limits the ability to generalise the findings to other samples. Nevertheless, this work confirmed that personality disorders are genetically influenced and, in particular, that there is a strong genetic influence, especially for the emotional and fearful clusters of personality disorder.

5.2 *The impact of childhood adversity*

Many patients with personality disorders report histories of childhood abuse or neglect. Although of clinical significance, taken alone, this fact does not provide robust epidemiological evidence for an aetiological role of adverse early experience in the development of personality disorder, as the findings might be explained by recall bias. Data from longitudinal studies, however, provide much stronger epidemiological evidence for the association.

In a series of publications (Johnson et al., 1999; Johnson et al., 2000; Johnson et al., 2001), Johnson and colleagues have produced longitudinal evidence showing that childhood maltreatment and neglect independently increases the risk of developing personality disorder in early adulthood. In this cohort study, a representative community sample of 639 youths and their mothers from New York was followed up over a 16-year period. Evidence of childhood abuse and neglect was obtained from official records, supplemented by self-report.

Those with documented childhood abuse or neglect were more than four times as likely as those who were not maltreated to be diagnosed with personality disorder. This was the case even after controlling for the effects of age, parental education and parental psychiatric disorder. Supervision neglect was specifically associated with increased risk for cluster B PDs, while children who experienced maternal verbal abuse were more than three times as likely to have borderline, narcissistic, obsessive-compulsive and paranoid personality disorders during early adulthood. Other longitudinal research has led to the identification of potential protective factors in the environment that can militate against early negative experience. For example, longitudinal studies of the natural history of juvenile delinquency have shown that the formation of a stable relationship and moving away from a high crime area reduces the likelihood of persistent antisocial behaviour continuing (Farrington and Coid, 2003). This finding is of relevance in considering the aetiology of antisocial personality disorder.

Other longitudinal research suggests that the presence of key 'other persons' such as close peers and teachers, and additional caregivers besides mother can all protect against adverse, adult psychosocial outcome (Werner, 1982).

5.3 *Gene-environment interaction*

Virtually all psychiatric disorders are the result of a complex interplay between genetic and environmental factors (Rutter, 2002). In this respect, personality disorders are no different; recent research has shown that a genetic diathesis acted on by adverse environmental experience is necessary for the development of personality disorder (Gabbard, 2005).

Caspi and colleagues recently examined whether genetic susceptibility to maltreatment modifies the influence of maltreatment on children's development of antisocial behavior (Caspi et al., 2002). As part of a large New Zealand birth cohort study (n = 1,037), they studied a sample of male children from birth to age 26 years, to determine why some children who are maltreated grow up to develop symptoms of antisocial personality disorder, whereas others do not.

A functional polymorphism in the gene encoding the neurotransmitter metabolising enzyme monoamine oxidase A (MAOA) was found to moderate the effect of maltreatment. Maltreated children with a genotype conferring high levels of MAOA expression were less likely to develop antisocial symptoms – a finding that has more recently been replicated in a meta-analysis (Kim-Cohen et al., 2006). Taken together, these findings provide robust evidence that genotypes can indeed moderate children's sensitivity to environmental insults.

6. Possible effects of societal trends on the prevalence and impact of personality disorders

The above review indicates that the prevalence of personality disorders is increased in areas of poverty and in urban locations. Moreover, childhood adversity and poor parenting have been clearly shown to be important risk factors (particularly for cluster B personality disorders). In the light of these facts, the following UK societal trends could increase the prevalence of these disorders:

- Widening income inequality over recent years.
- An increase in the number of homeless families living in temporary accommodation.
- The highest teenage birth rate in Europe.
- An increasing number of lone parent families.

(see: www.statistics.gov.uk; www.unicef-icdc.org)

These vital statistics indicate that the environmental exposure variables of importance in the aetiology of personality disorder are highly prevalent in British society. In some cases, their prevalence even seems to be steadily increasing. It is, therefore, possible to speculate that, over the course of time, in turn, the prevalence of disturbances in personality and frank personality disorder within British society could increase.

Nevertheless, it should be emphasised that, at the present time, there is no good evidence for a significant change in the prevalence of personality disorder in the UK. One possible explanation for this might be that any increase in prevalence has been offset by a corresponding increase in mortality which is raised among those with personality disorder (Hiroeh et al., 2001). The effect of recent increased numbers of migrants on the prevalence of personality disorders in Great Britain has yet to be determined. In the future, primary prevention strategies might offset an increase in prevalence. These would include both 'high risk' prevention strategies (such as the provision of evidence-based parenting programmes (Scott et al., 2001) to the families of children displaying antisocial behaviour) and also population-based interventions. The latter approach requires policy designed to strengthen the family unit, to improve access to health, education and social services, and to reduce income inequalities within British society.

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First published September 2008.

The Government Office for Science.

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