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A Selection of Topics in Clinical and Forensic Psychology

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An independent academic psychologist, based in England, who has written extensively on different areas of psychology with an emphasis on the critical stance towards traditional ideas.

A complete listing of his writings at http://kmbpsychology.jottit.com.

CONTENTS

1. MENTAL DISORDERS AND FEMALE SURVIVORS OF HUMAN TRAFFICKING

Human trafficking is "the recruitment and movement of people by force, coercion or deception, for the purposes of exploitation" (Abas et al 2013) [1] [2]. People are moved for activities including sex work, domestic work, work in farming and manufacturing, or begging. Ostrovschi et al (2011) described it as a "modern form of slavery".

Just under 90% of female survivors of trafficking have been found to suffer from a mental disorder on their return home, for example (Ostrovschi et al 2011) [3] [4].

Abas et al (2013) studied a sample of 120 ethnic Moldovan women [5] who had returned to Moldova (figure 1.1) after a trafficking experience outside the country [6], and registered with the International Organisation for Migration (IOM) Assistance and Protection Programme (APP) in 2008 [7].

(Source: Perconte)

Figure 1.1 - Location of Moldova in Europe.

[1] Tsutsumi et al (2008) defined it as "the exploitation of human beings in ways that include sexual exploitation, other forms of forced labour, slavery, servitude, or the removal of human organs through the threat or use of force; coercion, abduction, fraud, deception, abuse of positions of power or abuse of positions of vulnerability" (p1841).

[2] International Labour Organisation (ILO) calculate that 2.5 million individuals have been trafficked globally at any time (Abas et al 2013), while the US Department of State estimated that 600 000 - 800 000 individuals (80% female) were moved per annum (Tsutsumi et al 2008).

[3] Abas et al (2013) is based on the same sample as this study.

[4] However, there are a very limited number of such studies, and methodological problems exist including the stage of trafficking when the measurements are taken (Abas et al 2013).

[5] Age range of 18-44 years and mean of 25 years old.

[6] The most common destinations of trafficking were Turkey and Russia followed by the European Union.

[7] This programme saw 2340 women in Moldova between 2000 and 2008, which is estimated to be about 80% of the returning women to Moldova.

The researchers followed a strict ethical code of conduct because of the women being classed as a vulnerable research population. This included:

- Exclusion of women under 18 years old, or considered too distressed or unwell by IOM social workers.
- Full informed consent was obtained.
- The voluntary nature of participation was emphasised, particularly that the APP support was not linked to taking part.
- Initial recruitment by IOM staff, and then an interviewer who showed an identification care.
- Confidentiality was maintained throughout.
- The interviews took place at the IOM Rehabilitation Centre or place of the participants choosing.
- The interviewers worked in teams of two for their safety.
- All interviewers were female, had studied psychology at university, and were experienced in working with female trafficking survivors. They were also given six days of training.
- To avoid too much distress the participants were not asked directly about the trafficking experience. This information was taken from the registration documents of the APP in an anonymised form.

The interview used the official translated Romanian Non-Patient version of the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID) (First et al 2002) to diagnose post-trafficking mental disorders. The women also completed a self-administered 18-item questionnaire on childhood abuse [8], and were asked about their current social support (eg: "I get chances to talk to someone I trust about my personal and family problems").

Overall, 54.2% of the women (n = 65) were diagnosed with a mood or anxiety disorder using DSM-IV criteria. The most common disorder was PTSD (just over one-third of the sample [9]) followed by depression (12.5%) and anxiety (5.8%). The symptoms of PTSD changed in some cases between the immediate return home and the later interview (eg: six months after return) (table 1.1), as did the numbers diagnosed (figure 1.2).

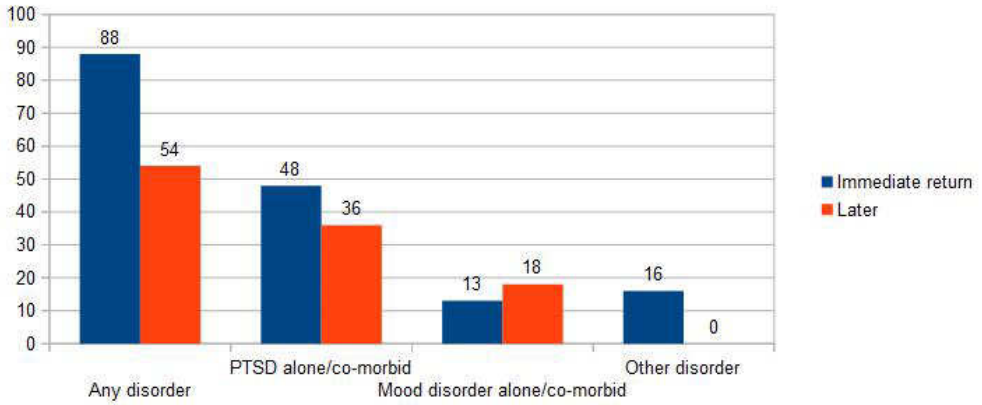
Those women with a mental disorder were significantly more likely to have a lower educational level (eg: left school at 15 years old), been unemployed pre-trafficking and/or post-trafficking [10], lived in the

[8] Ten questions about physical abuse, six about emotional abuse, and two about sexual abuse (eg: "before the age of 17 did an adult or older child touch you in a sexual way?").
[9] PTSD alone - 15% of sample, and PTSD with another disorder - 20.8%.
[10] 68.3% of the sample unemployed pre-trafficking and 36.7% post-trafficking.

Diagnosis on immediate return home	Later - no PTSD	Later - PTSD only	Later - PTSD and other disorder	Other mental disorder
No PTSD = 15	9	1	0	5
PTSD = 42	25	9	18	0
PTSD and other disorder = 16	3	2	11	0
Other disorder = 47	18	6	6	17

(Based on Ostrovschi et al 2011 table 4)

Table 1.1 - Number of women suffering from PTSD immediately and later after returning home.

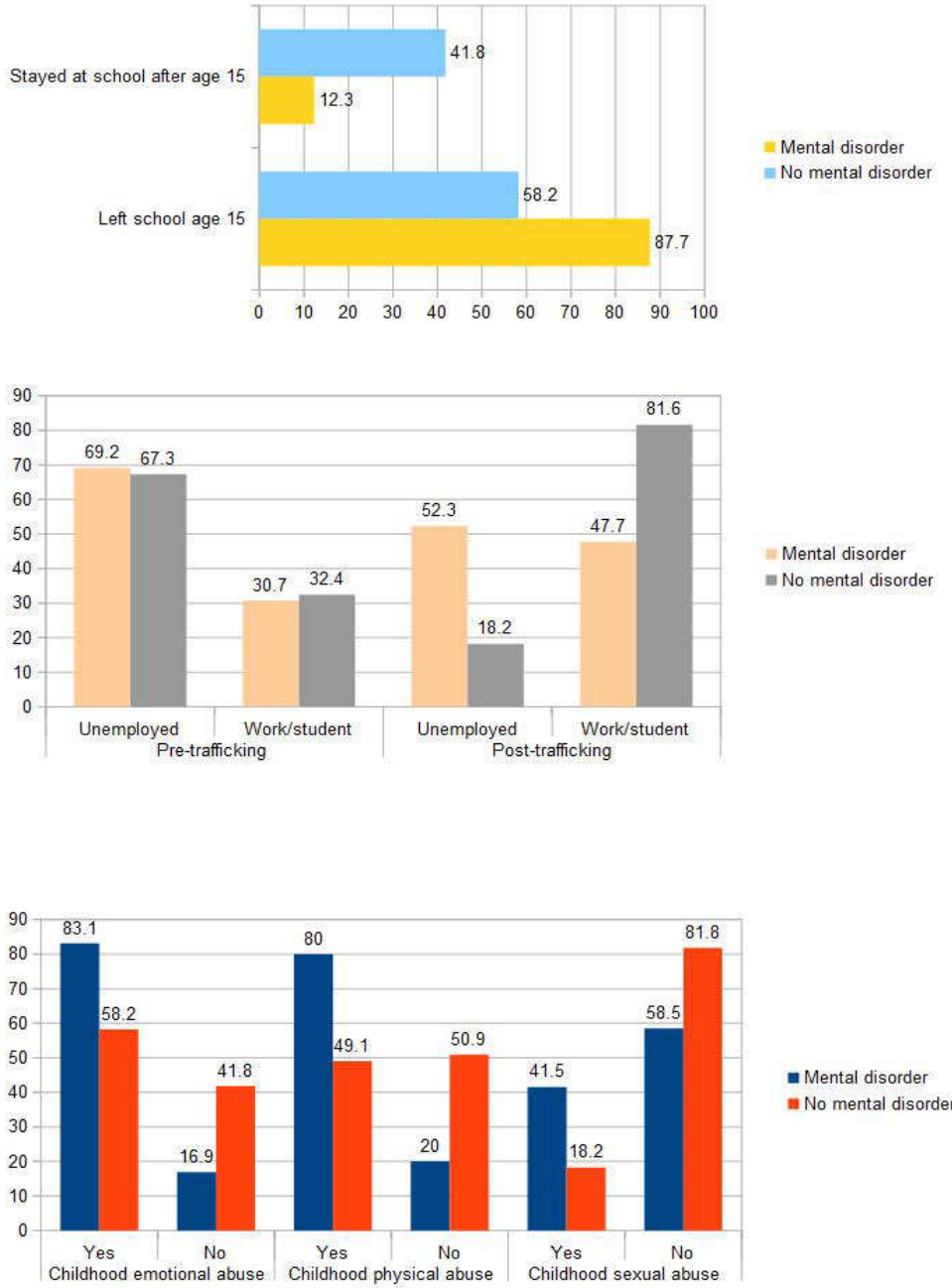


(Data from Ostrovschi et al 2011 table 3)

Figure 1.2 - Percentage of women diagnosed with mental disorders immediately on return home and later.

country pre-trafficking, experienced childhood abuse [11] [12] (figure 1.3), had experienced a longer period of trafficking [13], to not be married or co-habiting post-trafficking, and to have unmet needs (eg: accommodation or financial problems [14]) [15] and less current social support [16]. The type of exploitation (sexual or labour), time since returning to Moldova, and pre-trafficking living situation (eg: alone) were not significant.

[11] Overall, 79.2% of the sample reported abuse.
[12] Increased risk of mental disorder three-fold.
[13] The duration varied from two to thirty-one months (mean 9.6 months).
[14] There was a mean of 3.8 unmet needs in the study.
[15] Increased risk two-fold.
[16] Higher level of social support reduced risk by nearly half.



(Data from Abas et al 2013 table 1)

Figure 1.3 - Percentage of women and significant selected variables.

Combining all the variables in a multivariate regression model found that four variables significantly predicted mental disorders among the participants - childhood sexual abuse, less current social support, more current unmet needs, and a longer duration of trafficking.

Table 1.2 summarises the methodological issues involved in this type of study and how the researchers attempted to deal with them.

Methodological issue	Strategy to deal with it
Recall bias about childhood abuse.	Use of standardised questionnaires asking about specific behaviours.
Observer bias.	The interviewer who diagnosed mental disorders was blind to the rest of the interview information.
Measurement of mental disorders.	Used validated instrument - SCID.
Validity of translated SCID.	Officially translated version used, and SCID is commonly used instrument.
Other questionnaires.	Based on validated questionnaires and translated by local informants - eg: Camberwell Assessment of Need Short Appraisal Schedule (CANSAS-SF) (Andresen et al 2000).
Use of questionnaires - ie: what people say rather than do.	Difficult to observe and record actual behaviour.
Exact event causing PTSD not asked about.	It is a fair assumption that trafficking was the cause as usually threats or actual violence involved. Abas et al (2013) said: "rather than asking women in detail about their experiences while trafficked, the psychiatrist asked 'while women are in the trafficking situation, it is common to go through very difficult experiences, such as being seriously harmed or injured, or being threatened that you or someone close to you will be seriously harmed, or another type of very horrible experience: did anything like this happen to you?'. If they reported yes, the interviewer proceeded to ask about PTSD symptoms in relation to this event".
Method of sampling.	Consecutive sampling - avoids subjectivity in selection.
Size of sample.	The study was dependent on the number of women returning to Moldova and registering with the APP. During the study period, 236 women returned - 19 were younger than 18 years old, and 39 declined the APP. This left 178, of which 2 were too unwell, 28 could not be traced, and 28 declined to participate. This left the sample of 120.
Representativeness of the sample.	Abas et al (2013) said that the sample is "unlikely to be representative of all women survivors of human trafficking returning either to Moldova or elsewhere in Eastern Europe", but is "representative of women in Moldova who accept post-trafficking services, in this case the standard IOM support package, which is used similarly in IOM post-trafficking services in other countries".
Little information about the trafficking experiences.	Not collected for ethical reasons.
Not men.	APP only funded for women, and researchers based their study in their organisation as convenient way to find sample.

Table 1.2 - Methodological issues in study by Abas et al (2013).

Tsutsumi et al (2008) interviewed 164 women returned to Nepal and being supported by non-governmental organisations in Katmandu [17]. Of the women, 44 had been trafficked for sex work and the remainder non-sex work, though the researchers observed that "there is the possibility that some of the non-sex workers group had performed sex work during the trafficking period, but hesitated to reveal this fact since prostitution (sex work) and other sexual matters are taboo and stigmatized in Nepal" (p1846).

The following measures were used:

a) The Hopkins Symptom Checklist-25 (HSCL-25) (Derogatis et al 1974) - ten items on anxiety and 15 items on depression. Each item is scored 1-4, and a mean of 1.75 is the cut-off for diagnosis. Of this basis, 43 of the 44 sex workers had anxiety and all were diagnosed with depression compared to 87.5% and 80.8% respectively for the non-sex workers.

b) The PTSD Checklist Civilian Version (PCL-C) (Weathers et al 1991) - 17 items (scored 1-5) and a cut-off of 51 for the total score. Using this instrument, 29.5% of sex workers and 7.5% of non-sex workers were diagnosed with PTSD.

Hossain et al (2010) surveyed 204 sexually exploited women in post-trafficking support services within ninety days of returning home to a selection of European countries (Belgium, Bulgaria, Czech Republic, Italy, Moldova, Ukraine, and UK). Using the Brief Symptom Inventory (Derogatis and Spencer 1993), 48% of the women were diagnosed with anxiety and 55% with depression, while 77% suffered from PTSD (using the Harvard Trauma Questionnaire; Mollica et al 1992). Longer duration of trafficking was associated with twice as much depression and anxiety (after controlling for violence experienced) (Oram et al 2012).

Studies have interviewed trafficked women in other situations than after returning home:

i) At work - eg: in brothels in Israel, 19% of respondents were diagnosed as depressed and 17% as suffering from PTSD (Chudakov et al 2002).

ii) Awaiting deportation - eg: Cwikel et al (2004) interviewed 47 Russian-speaking women [18] in a detention centre in Israel awaiting deportation for working

[17] It is estimated that 12 000 women and children are trafficked per year from Nepal (mostly to India) (Tsutsumi et al 2008).

[18] The women were from Moldova, Ukraine, Asian Republics of Former Soviet Union, and Latvia.

illegally.

Of the women, 17% scored above the cut-off point for PTSD on the PTSD Checklist (PCL) (Stein et al 2000) [19], but 79% were classed as depressed based on the Short Depression scale [20]. PTSD symptoms and depression correlated significantly with trauma during trafficking, and trauma experienced before age of 18.

In terms of the general consequences of trafficking, Oram et al (2012) reviewed nineteen studies on the effect of trafficking published up to the end of August 2011. The majority of studies were in Asia, on women and girls, and sexual exploitation.

The researchers drew out a number of conclusions (other than mental health):

- The experience of violence reported by the women trafficked for sex was high (up to 95% of interviewees in one study), and was greater than that found among non-trafficked women doing sex work (mean: 48.3% vs 25.1% respectively).

- Trafficked women reported multiple physical health problems when interviewed in post-trafficking support services (eg: headaches, back pain, fatigue).

- Sex-trafficked women had rates of HIV infection of about one-third in studies in Nepal and India in post-trafficking support services.

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[19] This has 17 items (eg: "In the past month, how much have you been bothered by repeated, disturbing memories, thoughts or images of a stressful experience from the past?"), scored 1-5 (not at all - extremely), and a cut-off total score of 51.

[20] This used 6 questions from the CES-D scale (Radloff 1977).

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2. NON-SUICIDAL SELF-INJURY

"Parasuicide" is a term used to describe "all non-accidental, self-poisoning (appendix 2A) or self-injury that did not result in death, regardless of the intention of the act" (Butler and Malone 2013 p324). "Deliberate self-harm" is also used, but "deliberate" was seen by some patients as pejorative, and so "self-harm" is the label. In the USA, deliberate self-harm refers to superficial harm (called "self-injury" in the UK), and "attempted suicide" is the common term (whether the act has suicidal intent or not) (Butler and Malone 2013).

The question is whether self-harm is a "failed" suicide or a specific behaviour in its own right. In the latter case, the label "non-suicidal self-injury" (NSSI) is proposed in DSM-5 [21]. It is "the direct destruction of one's own body tissue in the absence of intent to die" (Butler and Malone 2013). NSSI is distinct from attempting suicide in a number of ways including (Butler and Malone 2013)(figure 2.1):

i. Motivation/intention.

ii. Lethality - less dangerous methods used in NSSI.

iii. Methods - NSSI includes cutting, scratching, biting, or excessive rubbing.

iv. Cognitions prior to and associated with the behaviour.

v. Demographics - eg: around one-quarter of 14-17 year-olds in Germany had performed at least one act of NSSI (Plener et al 2009) (table 2.1) [22] [23].

vi. Aftermath including reaction of others.

Even if NSSI and suicide attempts are different behaviours, Wilkinson et al (2011), for example, reported that NSSI was a strong predictor of suicide attempts in

[21] NSSI would be a diagnosis whereby the individual could receive help without the associated diagnosis (and stigma) of borderline personality disorder or other mental disorders that go with deliberate self-harm or attempted suicide. On the other hand, the diagnosis of NSSI as an adolescent could stigmatise an individual even when the behaviour ceases in adulthood (Kapur et al 2013).

[22] But there are few studies with adults and/or outside of North America (Kapur et al 2013).

[23] Suicide rates vary between groups in society (appendix 2B).

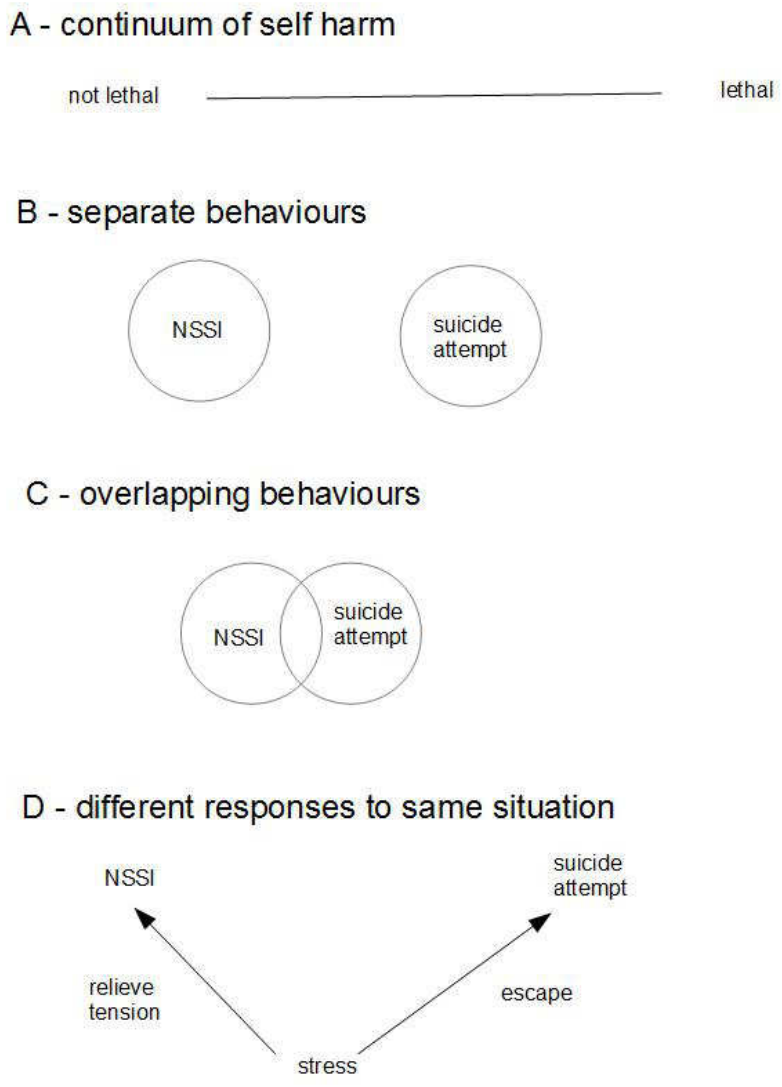

Figure 2.1 - Different ways of representing NSSI and attempting suicide.

- 664 14-17 year-olds in the Ulm area of southern Germany.
- Completed Self-Harm Behaviour Questionnaire (SHBQ) (Gutierrez et al 2001) and Ottawa Self-Injury Inventory (OSI) (Nixon et al 2002). The SHBQ measures the frequency of NSSI, and suicide attempts, threats and thoughts, while OSI is more in-depth (eg: coping strategies).
- Four groups were devised based on responses - no self-harm (n = 484), NSSI only (n = 137), suicide attempts only (n = 10), and both NSSI and suicide attempts (n = 33).
- 170 respondents reported lifetime NSSI (25.6%) and 132 in the past year (19.8%).
- 44 individuals only once, 42 twice, 21 three times, and 63 individuals four or more acts of NSSI.

Table 2.1 - Plener et al (2009).

depressed adolescents [24]. Self-cutting is the most common form of NSSI, and it is associated with later suicide more than self-poisoning in adults (eg: Cooper et al 2005 [25]) [26].

Brent (2011) suggested that NSSI desensitises an individual to pain, self-injury and death, thereby reducing any threshold that usually stops a suicide attempt [27]. Butler and Malone (2013) felt that rather than NSSI directly leading to suicide attempts, both behaviours have common origins, like stress, which is handled differently - "whereas NSSI represents a maladaptive coping mechanism to regulate overwhelming emotions and to endure life, a suicide attempt reflects a desire to escape and to end one's life" (Butler and Malone 2013 p325) [28] [29]. But the motivation to self-harm can vary between episodes or involve multiple motives (eg: Scoliers et al 2009; table 2.2). Furthermore, Kapur et al (2013) noted: "Underlying motivations may be unclear even to the person who has harmed themselves and clinicians and service users may have very different views on the degree of suicidal intent associated with the same episode of self-harm" (p327).

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[24] One hundred and sixty-four 11-17 year-olds in Britain were followed for 28 weeks as part of the Adolescent Depression Anti-Depressants and Psychotherapy Trial (ADAPT). A suicide attempt during the study period was over three times more likely among individuals with NSSI in the month prior to the baseline than with no NSSI ($p = 0.006$). The researchers defined a suicide attempt as self-injury at a level of "definite suicidal intent".

[25] The Manchester and Salford Self-Harm Project followed up for four years on 7 968 deliberate self-harmers over 10 years of age who attended at emergency departments of four hospitals in the Manchester area of England between 1st September 1997 and 31st August 2001. Sixty of these individuals committed suicide. This gives a suicide rate of 370.7 per 100 000 person-years compared to 11.0 for the general population in England and Wales (1997-2000). This is a thirty-four times greater risk (when age and gender adjusted) than the general population.

[26] But self-poisoning is not classed as NSSI in UK hospital records, for example, even if the perpetrator reports no suicidal intention (Kapur et al 2013).

[27] See also the interpersonal-psychological theory of suicide (Joiner 2005).

[28] Brent (2011) noted the similarities in characteristics between individuals who perform NSSI and suicide attempts as including poor social problem-solving skills, high levels of frustration, difficulty with emotion regulation, and self-critical thoughts, but differences in physiology. Changes in serotonin have been linked to suicidal behaviour, for example, while opioid-based neurotransmitters are associated with NSSI.

[29] One possibility is that other factors are needed as well as NSSI to lead to suicidal behaviour (eg: mental health issues and family problems). "A second possible explanation for the transition from non-suicidal self-injury to suicidal behaviour is based on the observation that those with non-suicidal self-injury have difficulties with verbal expression ... Since there are intra- and interpersonal motivations for both non-suicidal self-injury and suicidal behaviour, it is possible that if non-suicidal self-injury does not achieve the desired result, adolescents may, in desperation, 'turn up the volume' and engage in suicidal behaviour..." (Brent 2011 p453).

- An anonymous questionnaire with 30 477 14-17 year-olds in seven countries (Australia, Belgium, England, Hungary, Ireland, Netherlands, and Norway).

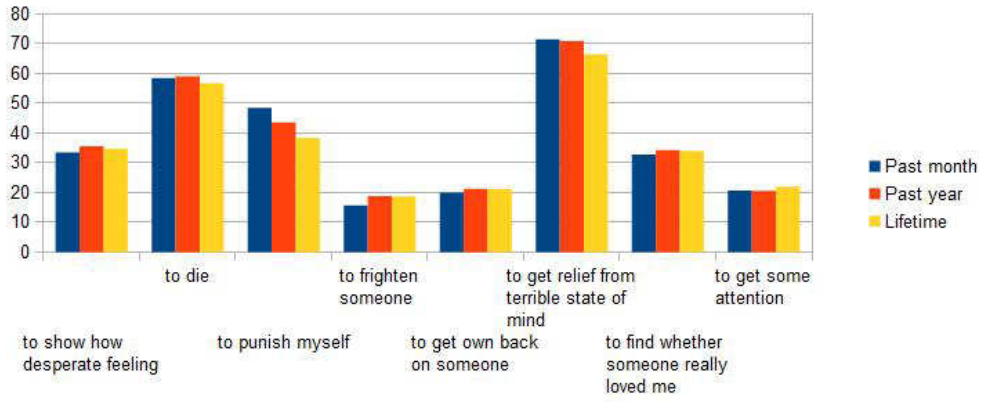
- Deliberate self-harm defined as: "Initiated behaviour (for example, self-cutting, jumping from a height), which they intended to cause self-harm; ingested a substance in excess of the prescribed or generally recognised therapeutic dose; ingested a recreational or illicit drug that was an act that the person regarded as self-harm; ingested a non-ingestible substance or object" (p602).

- Eight reasons offered for deliberate self-harm (figure 2.2). These reasons divided into two dimensions after analysis:

i) "cry of pain" (inward direction) - 3 reasons: "to die", "to punish myself", "to get relief from a terrible state of mind".

ii) "cry for help" (externally directed) - 5 reasons: "to show how desperate I was feeling", "to frighten someone", "to get my own back on someone", "to find out whether someone really loved me", "to get some attention".

Table 2.2 - Scoliers et al (2009).



(Data from Scoliers et al 2009 tables 1 and 2 p603, table 3 p604)

Figure 2.2 - Percentage of reasons given for self-harm in past month, year, or lifetime.

Kapur et al (2013) argued that it is a false dichotomy between NSSI and suicide attempt. If there were two separate behaviours, this should produce a bi-modal distribution of individuals who self-harm - those with suicidal intent and those not. But Hawton et al (2012 quoted in Kapur et al 2013) reported a continuous distribution of scores on the Suicidal Intent Scale [30]

[30] This measures circumstances around the behaviour - eg: made sure could not be found or method used.

among 700 self-harmers presenting at an Oxford hospital in England.

APPENDIX 2A - REPETITIVE SELF-POISONING

Repetition of self-harm leading to presentation at a hospital again occurs in about a quarter of cases (eg: Owens et al 2002). Techniques to reduce this repetition are important, and randomised controlled trials support a limited number of them (eg: dialectical behaviour therapy; Linehan et al 2006 [31]).

Carter et al (2013) reported success in reducing hospital-treated self-poisoning over a five-year period in the Newcastle area of New South Wales, Australia. The study was called "Postcards from the EDge" (Carter et al 2005). All individuals aged sixteen years and over who self-poisoned between April 1998 and December 2001 seen by the Hunter Area Toxicology Service made up the sample. Exclusion criteria included unable to give informed consent, considered a threat to the interviewer, "no fixed address", or not an English speaker. This gave 772 individuals, who were randomly allocated to the control or intervention groups. The intervention involved a series of eight "postcards", outlining psychiatric services available, sent at 1, 2, 3, 4, 6, 8, 10 and 12 months after discharge from hospital for the first (index) self-poisoning [32].

After five years, 24.9% of the intervention group had been readmitted to hospital for self-poisoning compared to 27.2% of the control group. This was not a statistically significant difference. But using the number of readmissions (ie: some individuals readmitted multiple times), there were 252 events in the intervention group compared to 484 in the control group. This is a statistically significant difference. There was also a significant benefit for women (but not men), and individuals with a prior history of self-poisoning.

APPENDIX 2B - SUICIDE RATE AMONG OFFENDERS

The rate of suicide is higher in certain groups than

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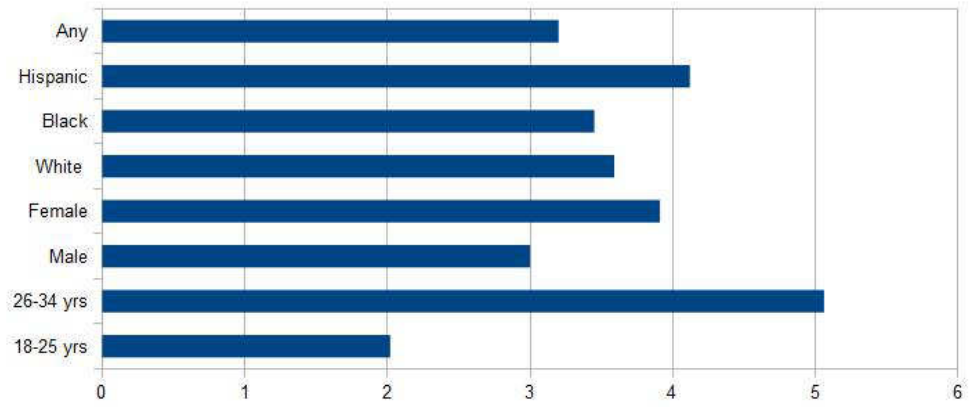
[31] "Standard DBT addresses the following 5 functions: (1) increasing behavioural capabilities, (2) improving motivation for skilful behaviour (through contingency management and reduction of interfering emotions and cognitions), (3) assuring generalisation of gains to the natural environment, (4) structuring the treatment environment so that it reinforces functional rather than dysfunctional behaviours, and (5) enhancing therapist capabilities and motivation to treat patients effectively" (Linehan et al 2006 p759).

[32] Example of postcard at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1246077/bin/bmj_38579.455266.E0_index.html.

in the general population. One such group is those individuals in contact with the criminal justice system - both in custody and not. For example, an annual suicide rate of 48 per 100 000 in US jails in 2005 (Cook 2013) compared to 11-12 in the US general population [33].

Cook (2013) found a rate of 2.3% for suicide attempts in the previous year in the USA among those recently arrested or charged but not in custody (compared to 0.4% for general population). This rose to 4.5% for multiple arrests or charges, and 5.7% for such individuals in the 25-34 age group (figure 2.3). Put another way, 17.4% of suicide attempters had been arrested in the past year compared to 3.5% of non-attempters. These figures were based on data from the National Survey on Drug Use and Health (NSDUH) in 2008 and 2010 [34].

The figures do not establish causation - ie: contact with the criminal justice system leads to suicide attempt because there are shared risk factors, like alcohol abuse or a history of childhood abuse, that account for criminal behaviour and psychiatric problems (Cook 2013).



(Data from Cook 2013 table 3 p772)

Figure 2.3 - Significant odds ratios for suicide attempts after multiple arrests in previous year.

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[33] Source: http://www.who.int/mental_health/prevention/suicide_rates/en/index.html (accessed 15/07/13).

[34] Note that the study was based on self-reported information with no independent verification.

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3. FIVE METHODOLOGICAL ISSUES WITH CLINICAL TRIALS

Black (1996) observed that the "widely held view that experimental methods (randomised clinical trials [35]) are the 'gold standard' for evaluation has led to the denigration of non-experimental methods, to the extent that research funding bodies and journal editors automatically reject them... This ignores the limitations of randomised trials, which may prove unnecessary, inappropriate, impossible, or inadequate".

- Unnecessary - When an effect is "dramatic" and the risk of confounding factors is very small, randomised clinical trials (RCTs) are unnecessary.

- Inappropriate - RCTs are inappropriate, for example, when the outcome is far in the future, or when an outcome is infrequent.

- Impossible - For example, for ethical reasons, or obstacles to recruiting participants.

- Inadequate - RCTs can have low external validity (ie: representativeness) because patients who participate may be atypical, and generalisability of findings may be limited because the participants are treated better than in everyday life (Black 1996).

FIVE ISSUES

1. The instrument used to measure improvement. For example, the Hamilton Rating Scale for Depression (HRSD) has seventeen items with a maximum score of 52. Of these items, seven relate to sleep and anxiety (with each item scoring up to six points). "Hence any drug with some sedative properties, including many anti-depressants, could produce a difference of two points or more without exerting any specific anti-depressant effect" (Moncrieff and Kirsch 2005 p155).

Most instruments are scored as ordinal data, which means that a depression score of 10, for example, is not half as depressed as a score of 20 (Hatcher 2005) [36].

There is also the issue of the validity of the instrument (ie: does it measure what it claims to measure?). For example, are questions about sleep and

[35] The randomised clinical trial is part of the methodology of science which aims to remove the risk of fallacies or "pseudo-science" (appendix 3A).

[36] This requires interval or ratio data, where there is an equal distance between each unit of measurement (eg: seconds on clock are same length).

anxiety valid measures of depression?

2. Changing continuous data (eg: rating scale: 1-5) to categories (eg: 1-2 (remission) vs 3-5 (no remission)) on the measuring instrument for analysis. NICE (2004) pointed out that "dichotomising scores into remission and non-remission creates an artificial boundary, with patients just over the cut-off score often being clinically indistinguishable from those just under the cut-off" (quoted in Moncrieff and Kirsch 2005) [37].

3. "Regression to the mean" - Individuals with the more severe symptoms at baseline show the greater level of improvement (ie: their scores move closer to the mean score). This occurs "regardless of whether they are treated with a drug or placebo" (Moncrieff and Kirsch 2005).

4. Not truly double blind as participants can detect, from the physiological effects, differences between a placebo and a drug [38].

5. The distortion of findings by exclusion of individuals who do not complete the trial [39].

APPENDIX 3A - FALLACIES AND PSEUDO-SCIENCE

Carey (1998) outlined a number of fallacies in scientific reasoning (sometimes called "pseudoscience"). A fallacy being "when one draws a conclusion one is not logically entitled to draw given the evidence available" (p113).

1. Fallacies related to observations:

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[37] Studies can vary in their definition of improvement. For example, an improvement of three points or more on the HRSD is used as a "clinically meaningful" criterion with depression (NICE 2004).

[38] Abbasi (2013) questioned the choice of comparator drug - "Fair tests of treatments presume a genuine uncertainty about which treatment is more beneficial or harmful. Yet too many clinical trials use inappropriate comparators to exaggerate the benefits of a new therapy". So drugs that are known to be ineffective and/or have worse side effects are compared to the new drug making the latter appear better.

[39] "Publication bias and concealing unfavourable trial data are ancient undercurrents that are rising like a modern tidal wave. The dam of complicity that protects profits, bolsters careers and keeps patients from the best treatments is about to burst" (Abbasi 2013). Furthermore, he says: "There is a grand deceit in medical research, and it is that clinical trials are fair by definition. It is a deceit that is camouflaged by soothing words about patient care and perpetuated by insiders who are busy buying in to the success of their latest product" (Abbasi 2013).

a) Anecdotal evidence - generalisations from everyday life. For example, I waited at the bus stop on two occasions recently for a long time before a bus came, and therefore I concluded that the bus service was unreliable.

b) Omitting facts - ie: selectively reporting or remembering information.

c) Distorting the facts - eg: combining different accounts of the same event into one general picture which gives the impression that everybody saw the same thing.

2. Fallacies related to alternative explanations:

a) Fallacious argument by elimination [40] - "argument by elimination" involves, say, two possible explanations, and if one does not occur, the other must be true. For example, guessing the next card in a shuffled pack significantly more than chance is taken as evidence of extra-sensory perception (ESP). But this is based on two explanations only - true ESP or not rather than many possible explanations for the score above chance.

b) Fallacious inference to a causal link - this can occur in different situations:

i) Where there is a correlation between two variables - but correlation does not mean causation. For example, students sitting at the front of a classroom correlates with better grades in the examination. But the cause may be that the most motivated students sit at the front, and they study harder, and this third variable accounts for the examination results.

ii) A concomitant variation in variables - a rise, for instance, in two variables together does not mean that they are causal. For example, the use of social media has increased in recent years and so has the cost per unit of electricity. The two variables may be unconnected or they may be connected by a third variable.

iii) The fact that one thing precedes another - eg: I think about a particular person, and later they telephone me. This does not mean that the former caused the latter. Experiments would need greater controls to

[40] Shermer (2013) called this the "argument from ignorance" (argumentum ad ignorantiam) - a gap in the prevailing theory is taken as evidence of an alternative theory. Talking about the "ancient aliens" theory, Shermer stated: "The illogical reasoning goes like this: if there is no satisfactory terrestrial explanation for, say, the Nazca lines of Peru, the Easter Island statues or the Egyptian pyramids, then the theory that they were built by aliens from outer space must be true".

establish this idea, like the times I thought of the person and they did not telephone.

3. Fallacies in proposing and testing explanations:

a) Exploiting analogies and similarities - using analogies or similarities to explain a behaviour - eg: the moon's influence on tides as the explanation for the influence of planets on personality (as in astrology).

b) Proposing unfalsifiable explanations - eg: predicting from astrology that an important event will happen in the person's life soon. The vagueness of the claim makes it impossible to disprove, and that is why scientific hypotheses need to be specific and falsifiable. So, a falsifiable version might be: "in the next 24 hours, you will lose your job".

c) "Illicit ad hoc rescues" - this often involves a specific prediction which does not come about, but then the individual gives a reason for why the prediction failed. For example, a psychic is predicted to score significantly more than chance in a test of ESP, who does not, but then claims that the experimenter put them off.

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4. ETHNIC DENSITY AND MENTAL DISORDERS

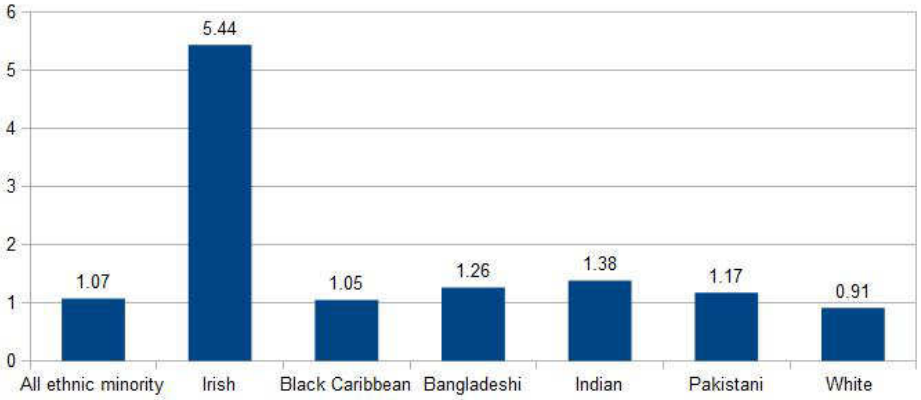
Studies have found that the incidence of psychosis is higher among ethnic minority populations in the UK (eg: Black African and Black Caribbean; Fearon et al 2006) as compared to the overall average. This general pattern is diluted by living in neighbourhoods with own-ethnic group (high ethnic density).

Das-Munshi et al (2012) showed this effect using data from the Ethnic Minorities Psychiatric Illness Rates in the Community (EMPIRIC), which surveyed a representative sample of ethnic minority adults in England in 2000. "Ethnic density" of a neighbourhood was calculated as the percentage of a minority ethnic people living in a particular area. The incidence of reported psychotic experiences in the previous year increased as ethnic density decreased (negative correlation) (figure 4.1) [41].

The authors suggested two potential pathways for the "buffering effect" of high ethnic density:

a) Ethnic minority individuals living in low density areas may experience more racism and discrimination, which could lead (along with other social stressors) to mental health problems.

b) Living in a high density area gives the opportunity for social and practical support in times of stress, and this reduces the risk of mental health problems.



(Data from Das-Munshi et al 2012 table 4 p286)

Figure 4.1 - Odds ratio of reporting psychotic experiences per ten percentage point reduction in own-ethnic group density.

[41] This relationship may hold for mental health problems generally (appendix 4A).

APPENDIX 4A - ETHNICITY AND ADOLESCENT MENTAL HEALTH

The WHO (2005) estimated that about one-fifth of children and adolescents in the world have a mental health problem. This figure was based on data from different countries which vary in quality and method of collection (Dogra et al 2013).

In Britain, an official survey found a point prevalence (ie: currently) of mental health problems among 11-16 year-olds of 11.5% (Green et al 2004), while in Germany, it was 12.2% of 11-17 year-olds (Ravens-Sieberer et al 2008). But these figures hide gender differences - 10.3% of girls and 12.6% of boys in the British study, and 9.5% and 14.7% respectively in Germany.

There are also ethnic differences, but these are difficult to measure because of how ethnicity is defined and the small number of ethnic minority individuals sampled in studies. In their study of Indian English adolescents, Dogra et al (2013) sought to oversample this group by recruiting participants from two areas (Leicester and West London) where such individuals are the majority. The age group studied was 13-15 year-olds in 23 schools, who completed three measures of mental health:

a) Strengths and Difficulties Questionnaire (SDQ) (Goodman 2001) [42] - This measures general mental health as well as sub-scales for conduct, emotional, hyperkinetic, and peer relationship problems. Total scores vary from 0-40, and a score of 20 or more was classed as having mental health problems.

b) Short Mood and Feelings Questionnaire (SMFQ) (Angold et al 1995) - This measures depression and anxiety, and a score of eight or above was the cut-off.

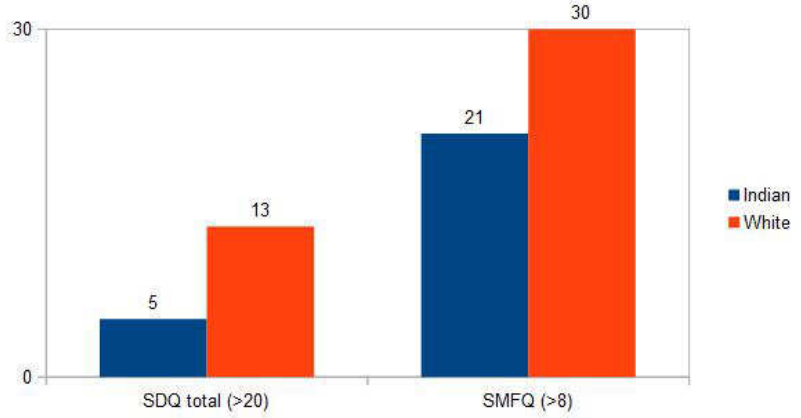
c) SCOFF (Morgan et al 1999) - This measures eating problems with five questions (eg: "do you make yourself sick because you fill uncomfortably full?"), and agreement with three or more is the cut-off.

The analysis was based on 1087 Indian respondents compared to 414 White adolescents. Ethnicity was self-defined from a list provided.

The Indian sample had significantly lower scores on the SDQ and the SMFQ than the White sample (figure 4.2).

Dogra et al (2013) explained the difference as due to the Indian adolescents living in areas of high Indian

[42] Information at http://www.sdqinfo.com/.



(Data from Dogra et al 2013 table 1 p46)

Figure 4.2 - Percentage of adolescents and scores on two questionnaires.

ethnicity, and that they were more likely to have two-parent families (and adolescents in such families have less mental health problems than in lone-parent and reconstituted families; Green et al 2004).

This study has the following limitations (recognised by the researchers):

- Self-reported questionnaires.
- No independent verification of information.
- Adolescents with mental health problems "may have chosen to absent themselves from school when they were expected to complete the questionnaires but again this would apply to both ethnic groups" (p49).
- The SDQ has not been validated with an Indian English sample.
- Inconsistency in how questionnaires administered across the different schools.

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5. ASSESSING INTERNET-BASED TREATMENT

Individuals with mental disorders may not want to access face-to-face services, so the opportunity exists for Internet-based treatments.

Internet-based treatments have a number of advantages over traditional services and treatments (Dolemeyer et al 2013):

- No geographical boundaries which allows wide dissemination of treatment, particularly where no physical services nearby.
- Greater user control and flexibility.
- Anonymity for users, particularly where a fear of social stigma exists.

Dolemeyer et al (2013) undertook a systematic review of the evidence on the effectiveness of Internet-based treatments for eating disorders. Relevant articles up to November 2012 were accessed, and eight studies were found to fulfil the selection criteria, including controlled design and psychometric measures of symptoms and outcomes. Five studies were rated as having good methodological quality on eleven criteria proposed by Van den Berg (2007) (table 5.1).

- Were the eligible criteria specified?
- Was the method of randomisation described?
- Were the groups similar at baseline regarding important prognostic indicators?
- Were the index and the control interventions explicitly described?
- Was the outcome assessor blinded to the interventions?
- Was the dropout rate described and were the characteristics of dropouts compared with the completers?
- Was long-term follow-up in the groups comparable?
- Was the timing of the outcome measurements in the groups comparable?
- Was the sample size of each group described by means of a power calculation?
- Did the analysis include intention-to-treat analysis?
- Were point estimates and measures of variability presented for the primary outcome measures?

(Source: Dolemeyer et al 2013 table 1)

Table 5.1 - Criteria for assessing methodological quality.

Three of the studies focused on bulimia nervosa, two on binge eating disorder, and the remainder on more than one kind of eating disorder. Six of the 8 studies were randomised controlled trials, and the follow-up ranged from two to twelve months after treatment. In total there

were 609 participants aged 16 years and above.

The Internet-based treatments were most commonly based on cognitive-behavioural therapy (CBT) which focused on the thinking process of the user with exercises to help change the negative or unhelpful thoughts (table 5.2) [43].

Overall, six studies showed significant symptom reduction (eg: reduction in vomiting for bulimia sufferers or less binge episodes with binge eating disorder). Self-help programmes supported by email contact from a therapist were most effective. Dolemeyer et al (2013) concluded: "In summary, internet-based interventions based upon CBT principles can be assumed to be a good alternative to face-to-face therapies for the treatment of eating disorders... Unfortunately, due to the small number of studies, the differences in disorders addressed and assessment methods used in each study, these conclusions must be interpreted as promising but not definitive".

Ljotsson et al (2007)

- Randomised controlled trial in Sweden.
- Self-help based on CBT book "Overcoming Binge Eating".
- 12 week long with 6-month follow-up.
- 1 or 2 email contacts per week from therapist.
- 73 participants (69 female) with DSM-IV diagnosed bulimia nervosa or binge eating disorder (37 in treatment group).
- Control group of 36 sufferers on waiting list for treatment.
- Outcome measure: abstinence - no episode of being eating or purging in 28 days.
- 37% abstinence in treatment group vs 15% in control group.

(Source: Dolemeyer et al 2013 table 3)

Table 5.2 - Example of study in systematic review.

In their review study, Griffiths et al (2010) found 26 randomised controlled trials (RCTs) of Internet-based treatments of depression and/or anxiety disorders published up to June 2009 [44]. All used CBT-based programmes.

Each RCT was rated on three criteria for assessing bias:

- Randomisation process - eg: use of random numbers to allocate participants to treatment or control group.
- Allocation concealment (blinding) - ie: the tester was not aware if the participant was in the treatment or

[43] It has been called bibliotherapy (reading text-based materials) (Andersson and Cuijpers 2009).
[44] Eight RCTs on depression, 16 on anxiety disorders, and two studying both conditions.

control group.
- Incomplete outcome data -ie: drop-outs.

Overall, 23 of the 26 trials showed benefits in reducing symptoms for the treatment group over the control group, and the size of the effect [45] was comparable to face-to-face treatments or anti-depressants (Griffiths et al 2010) [46].

The comparability of the studies in the review was influenced by a number of variables:

- Length of study (1-13 weeks).
- Inclusion of therapist input (including face-to-face contact) or not.
- Community or clinical sample (and self-selected).
- Age of participants - mostly adults (aged 30-50 years old), but also children and adolescents in some studies.
- Size of sample (n = 23 - 786).
- Recruitment of control group - eg: "waiting list" or "treatment as usual".
- Measurement of disorder - formal diagnosis vs cut-off point on self-reported questionnaire.
- Inclusion of participants with clinically diagnosed disorder or "clinically significant levels of symptoms" or sub-threshold (ie: just below cut-off point).
- Participants from rural or urban settings.
- Type of CBT programme used (eg: MoodGYM [47]).

Andersson and Cuijpers (2009) found twelve RCTs [48] published up to January 2009 using computerised (eg: CD-ROM) or Internet-based treatments for adult depression for their meta-analysis. The mean effect size was 0.41 [49], while for the 12 Internet-based studies, it was 0.37. When Internet-based treatment was compared to "care-as-usual" control group, the effect size was 0.23, but 0.56 compared to a waiting list control.

Andersson and Cuijpers (2009) noted that the overall

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[45] The effect size (Cohen's d or standardised mean difference) is the difference between the treatment and control groups at post-treatment. Where a decline in symptom score is success, the effect size is calculated as the average score of the control group minus the average score of the treatment group divided by the pooled standard deviations of the two groups. A positive number shows that the treatment is more beneficial than the control (Andersson and Cuijpers 2009).

[46] The effect size for depression varied between 0.42 and 0.65, and 0.29 to 1.74 for anxiety disorders compared to 0.31 for psychological treatment of depression and 0.37 for anti-depressants with depression (Griffiths et al 2010). But Andersson and Cuijpers (2009) lamented the lack of studies that compare Internet-based treatments to face-to-face ones.

[47] Details at https://moodgym.anu.edu.au/welcome.

[48] There were fifteen comparisons between a treatment and a control group (with 2446 participants in total).

[49] Cohen (1988) stated that 0.2 is a small effect, 0.5 is moderate, and 0.8 is a large effect size.

effect size was "probably not meaningful because it hides the finding that interventions in which support is provided to the participant are more effective [50]... [Thus] it appears that computerised treatments with therapist support are much more effective than unsupported treatments" (p202).

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[50] The mean effect size for studies of Internet-based treatment with therapy support was 0.61 compared to 0.25 when no support provided (Andersson and Cuijpers 2009).

6. DOCTORS' JOB SATISFACTION UNPREDICTED

The mental health of medical professionals is not particularly good. Taylor et al (2005), for example, found an increase in psychiatric problems and job-related stress among UK hospital consultants between 1994 and 2002. In the first survey, 880 consultants in gastroenterology, radiology, surgical oncology, clinical oncology, and medical oncology were interviewed, and in 2002 1308 of them. Psychiatric morbidity increased from 27% of the sample to 32% in 2002, and burnout/emotional exhaustion from 32% to 41%.

While Moss et al (2004) found that around 16% of over 2000 junior doctors in the UK were considering leaving medicine because of unhappiness and dissatisfaction with their career.

McManus et al (2005) investigated whether it was possible to predict which medical students would be unhappy doctors. The doctors studied were part of the 1991 Cohort Study who applied to medical school in 1990, and were surveyed about their happiness and satisfaction with a medical career in 2002-3. Forty doctors who were very happy and 40 who were very unhappy [51] had their medical school application personal statement and referee's report used.

Four groups of assessors were used in this experiment - 35 experienced medical school selectors, nineteen doctors, 22 medical students, and 20 psychology students in London. The assessors were given the matched information about 20 pairs of doctors and asked to say which one of each pair was now happy with their career.

Being correct by chance is 50%, and the assessors were right on 50.2% of choices (which is not significant). The different groups of assessors did not vary in their success rates. The assessors seemed to pay attention to educational achievement and intelligence in the medical school applications, and these are unrelated to subsequent job stress, burnout and dissatisfaction (McManus et al 2003).

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[51] The happy doctors responded "never" or "a few times a year" to the statements, "I think of giving up medicine for another career", and "I regret my decision to have become a doctor", and "every day", "a few times a week" or "once a week" to "I reflect on the satisfaction that I get from being a doctor". The unhappy doctors responded "every day" most often to the first two statements, and "never" commonly to the last one.

McManus, I.C et al (2005) Unhappiness and dissatisfaction in doctors cannot be predicted by selectors from medical school application forms: A prospective longitudinal study BMC Medical Education 5, 38

Moss, P.J et al (2004) Reasons for considering leaving UK medicine: Questionnaire study of junior doctors' comments British Medical Journal 329, 1263-1265

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7. SURVIVAL OF "AUTISM GENES"

From an evolutionary point of view, why do certain genes (and behaviours) remain in a population if they are detrimental to survival? Take, for example, the developmental disorder, autism, where an individual has limited communication skills, often obsessions, and cannot look after themselves. Individuals who inherit the genes causing such behaviours would have little chance of mating, and the genes are not passed on [52].

But if the same genes that caused the negative behaviour also in some "versions" produced positive behaviours (co-inherited), then there would be a "motivation" for the genes to continue in future generations. In the case of autism, it could be skills related to engineering and technical occupations.

The positive behaviours with autism include attention to detail and the ability to concentrate on such detail for long periods, which are useful in work related to "systematising" ("a drive to analyse or construct a system") (eg: computing, mathematics, engineering) (Baron-Cohen 2012) [53].

Along with "assortative mating" ("like pairs with like"), these genes are passed into subsequent generations (Baron-Cohen 2012). The genes may be recessive in the sense that one version (from one biological parent) produces the positive behaviour, but two versions (from both parents) leads to the negative outcome. So, for example, many engineers could be carriers of the genes (without any manifestation of the disorder) and if they mate with other carriers, then the offspring is born with two versions of the genes.

Research Example 1

Baron-Cohen et al (1998) found that mathematics (n = 275), engineering (n = 266), and physics (n = 100) students at the University of Cambridge in the UK were significantly more likely to have a relative [54] with a diagnosis of autism than English (n = 480) and French (n = 172) literature students. The former group reported six cases out of 9428 relatives compared to one case out of 9829 relatives among the literature students (Chi square; p = 0.049).

The participants were asked about five other conditions (anorexia, schizophrenia, manic-depression,

[52] This is evidence that autism has been increasing in recent years (appendix 7A).

[53] This is called the hyper-systemising theory (eg: Baron-Cohen 2008).

[54] First degree (siblings, parents), second degree (parents' siblings) or third degree (first cousin) relatives.

Downs Syndrome, and language delay). There was only a significant difference for manic-depression - 50 cases among the relatives of science students and 100 cases for literature students (Chi square; p = 0.0002).

Research Example 2

Baron-Cohen et al (1997) found that children with autism or Aspergers syndrome were more likely to have a father that worked as an engineer than child with non-autism developmental conditions. The grandfathers were also more likely to have been engineers.

Nine hundred and nineteen parents of children with autism or Aspergers syndrome (AS) were recruited via the National Autistic Society in the UK. The reported occupations of the mothers, fathers, and four grandparents were compared to four groups:

- 40 couples of children with Tourette Syndrome (TS) via the Tourette Syndrome Association in the UK [55].
- 464 couples of children with Downs Syndrome suffering from cardiac disease via a charity called "Downs Heart" [56].
- 98 couples of children whose language delayed.
- 125 couples of children with none of the above disorders.

A total of 7068 occupations were grouped into eighteen categories. Fathers and grandfathers of children with autism or AS were significantly more likely to be (or have been) engineers than the TS group (28.4% vs 15%) (Chi square; p <0.001) (figure 7.1) [57] [58].

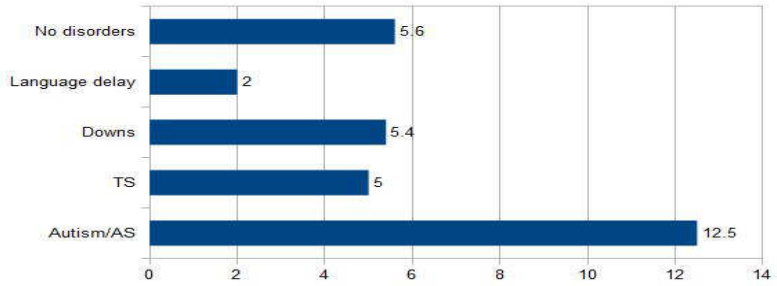

Figure 7.1 - Percentage of fathers who were engineers.

[55] "This served as a control group, to test if patterns of occupations of parents of children with autism or AS were a function of the sorts of people who become members of a national charity focusing on childhood psychiatric disorder" (Baron-Cohen et al 1997).

[56] "Again, this controlled for any sampling bias associated with being a member of a medical charity" (Baron-Cohen et al 1997).

[57] The national average is 5% of occupations are engineers in UK (Baron-Cohen et al 1997).

[58] There were no significant differences for any occupations of mothers and grandmothers.

Research Example 3

Roelfsema et al (2012) compared the rates of austistic spectrum conditions (ASC) [59] in schools in Eindhoven (an area with a large amount of computer and IT companies) and in Haarlem and Utecht (similar sized regions used as controls) (in the Netherlands). In total 369 schools participated in the study with 62 505 4-16 year-olds.

The rate of ASC was significantly higher in Eindhoven (229 per 10 000) than Haarlem (84) and Utecht (57). The rates for autistic disorder were also significant - 50, 12, and 10 per 10 000 respectively. Two control disorders showed no differences between the three regions - attention deficit hyperactivity disorder and dyspraxia.

The researchers concluded that ASC are more common in "areas where talented systemisers are attracted to work and raise a family". This is indirect evidence of the relationship between systemisers and autistic disorders.

There are alternative explanations for the findings (which Roelfsema et al 2012 discounted):

- Over-diagnosis of ASC in Eindhoven.
- Increased awareness by parents and professionals of ASC in Eindhoven.
- Under-diagnosis of ASC in Haarlem and Utrecht.

APPENDIX 7A - INCREASING AUTISM

The rate of autism is about 13 per 2000 children today in the West, which is a large increase from about 1 in 2000 around a quarter of a century ago (DeSoto and Hitlan 2013). The question is whether the increase is real (ie: more children suffer from autism today than in the past) or an artefact (eg: widening of the definition and diagnosis criteria).

Concerning the latter, diagnosis has developed from a yes/no for autism to a dimension of severity for autism spectrum disorders (ASD). "It is obvious that many children receiving an ASD diagnosis today would not have been diagnosed as having archetypal autism either currently or decades ago", DeSoto and Hitlan (2013) observed.

But Atladottir et al (2007) used a broad diagnostic definition (ASD) and a stricter one (childhood autism) on

[59] ASC include autistic disorder, Asperger syndrome, pervasive developmental disorder - not otherwise specified (PDD-NOS), and other rare autism spectrum conditions like Rett's disorder.

children born in Denmark in 1990-1999, and found that both definitions showed an increase in cases with the stricter definition showing a greater increase. This is evidence of a real increase.

Those who question a real increase have countered by asking what has caused the rise. Autism is seen as having a high heritability (eg: 0.37; Hallmayer et al 2011). "In any case, gene pools do not change this fast: there is no way that a ten-fold, five-fold, or even a doubling across the span of a single generation could be due to a change in the gene pool. Mutations and natural selection do not work that quickly. If an actual change in prevalence happens over the course of one generation, the answer has to lie elsewhere, such as macro level environmental changes interacting with individual level genetics" (DeSoto and Hitlan 2013 p61). Evidence for such environmental factors include exposure to toxins during pregnancy or early infancy (eg: Eskanzi et al 2007) [60].

DeSoto and Hitlan (2013) were interested in the opinions of professional psychologists as to whether the rise in numbers was real or an artefact. Eighty-eight clinical psychologists in the USA were randomly surveyed via the telephone. Participants were asked two questions:

i) In your opinion, which is most accurate about the changing rate of autism?

- A. I am very certain that the true rate of autism has NOT increased at all
- B. I doubt the true rate of autism has increased at all
- C. I think the true rate of autism may have actually increased some
- D. The actual rate of autism has definitely increased
- E. I have no opinion or can't say.

ii) Is the increase in autism fully explainable by changes in how autism is diagnosed? Yes/No/Unsure.

The 6% of participants who responded with "E" in question 1 were removed from the analysis. Of the reminder, 72% chose "C" and "D" (real increase) (and 28% "A" and "B"). For question 2, 60% answered "no", 28% "yes", and the remainder were unsure. Those individuals who worked with individuals with ASD were significantly more likely to see the increase in the number of cases as real.

[60] DeSoto and Hitlan (2013) listed fifteen studies showing higher levels of neurotoxins among individuals with ASD.

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8. CHILD MALTREATMENT AND ADULT MENTAL HEALTH PROBLEMS

Child sexual abuse is a risk factor for adult mental health (eg: Read et al 2003), and so is non-sexual child maltreatment, according to a meta-analysis by Norman et al (2012).

Child maltreatment is defined as "all forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment, or commercial or other exploitation of children that results in actual or potential harm to a child's health, survival, development, or dignity in the context of a relationship of responsibility, trust, or power" (Norman et al 2012 p2). Four types of maltreatment are distinguished - physical abuse [61], sexual abuse [62], emotional and psychological abuse [63], and neglect [64] (Norman et al 2012).

Norman et al (2012) found 124 relevant articles (up to June 2012), and calculated the mean odds ratios (appendix 8A). Compared to non-abused individuals, those abused were more likely to experience:

- Depressive disorders - physically abused (odds ratio 1.54), emotionally abused (3.06), neglected (2.11).
- Anxiety disorders - physically abused (1.51), emotionally abused (3.21), neglected (1.82).
- Eating disorders - 2.58, 2.56, 2.99 respectively.

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[61] "Physical abuse of a child is defined as the intentional use of physical force against a child that results in - or has a high likelihood of resulting in - harm for the child's health, survival, development, or dignity. This includes hitting, beating, kicking, shaking, biting, strangling, scalding, burning, poisoning, and suffocating. Much physical violence against children in the home is inflicted with the object of punishing" (Norman et al 2012).

[62] "Sexual abuse is defined as the involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared, or else that violates the laws or social taboos of society. Children can be sexually abused by both adults and other children who are — by virtue of their age or stage of development — in a position of responsibility, trust, or power over the victim" (Norman et al 2012).

[63] "Emotional and psychological abuse involves both isolated incidents, as well as a pattern of failure over time on the part of a parent or caregiver to provide a developmentally appropriate and supportive environment. Acts in this category may have a high probability of damaging the child's physical or mental health, or his/her physical, mental, spiritual, moral, or social development. Abuse of this type includes the following: the restriction of movement; patterns of belittling, blaming, threatening, frightening, discriminating against, or ridiculing; and other non-physical forms of rejection or hostile treatment" (Norman et al 2012).

[64] "Neglect includes both isolated incidents, as well as a pattern of failure over time on the part of a parent or other family member to provide for the development and well-being of the child — where the parent is in a position to do so — in one or more of the following areas: health, education, emotional development, nutrition, shelter, and safe living conditions. The parents of neglected children are not necessarily poor" (Norman et al 2012).

- Substance abuse - 1.51, 2.00, 1.29 respectively.

- Suicidal behaviour - 3.00, 3.08, 1.85 respectively.

The causal relationship between child maltreatment and adult mental health problems can be established using certain criteria (based on Hill 1965):

i) Temporal relationship - eg: prospective studies showed that the abuse occurred in time before the mental health problems.

ii) Strength of association - even after controlling for mediating variables (eg: household income; self-reported vs official records), maltreated individuals were still more likely to suffer from mental health problems.

iii) Consistency of association - similar findings across different study designs, samples, and geographical regions.

iv) Dose-response relationship - increasing severity of maltreatment led to more severe mental health problems.

v) Plausibility - eg: biological basis: maltreatment during child development changes the brain's development (Norman et al 2012).

APPENDIX 8A - RELATIVE RISK VS ODDS RATIO

There is often not a simple link between an unhealthy behaviour and an illness for individuals, but there are patterns across a population. So, for example, as a general rule, heavy drinkers of alcohol die younger than light drinkers, but an individual heavy drinker may not die earlier than an individual light drinker. The relative risk can tell an individual how likely they are to face the consequences of a behaviour.

In the case of the example of alcohol and mortality, four groups can be distinguished - heavy and light drinkers (however that is defined - eg: number of units per week), alive/dead - in a longitudinal cohort study of ten years, say (table 8.1). In a hypothetical example, 1000 individuals are light drinkers (of which 50 died) and fifty died of 120 heavy drinkers (table 8.2).

	Has disease	Does not have disease
Exposed to risk	A	B
Not exposed to risk	C	D

(Source: Bowers 2008)

Table 8.1 - Formulation for relative risk.

	Died	Alive
Heavy drinker	50	70
Light drinker	50	950

Table 8.2 - Hypothetical example.

$$\text{Relative risk (RR)} = \frac{a}{(a+b)} \div \frac{c}{(c+d)}$$

Using hypothetical data in table 8.2:

$$\frac{(50 \div (50 + 70)) = 0.42}{(50 \div (50 + 950)) = 0.05} = 8.4$$

Thus the RR of an individual heavy drinker dying younger than an individual light drinker is over eight times greater.

The RR is used with cohort studies that follow a group forward in time. The odds ratio (OR), defined as "the ratio of the number of persons experiencing the event to the number of persons not experiencing the event" (Bowers 2008 p162), is an equivalent calculation for case-control studies (that work backwards in time) (figure 8.1). For example, of a group if individuals now dead, how many were heavy drinkers and how many light drinkers?

$$\text{Odds ratio} = \frac{a \div c}{b \div d}$$

Using the data from table 8.2:

$$\frac{50 \div 50}{70 \div 950} = \frac{1}{0.07} = 14.3$$

Of those dead, they were over fourteen times more likely to have been heavy than light drinkers.

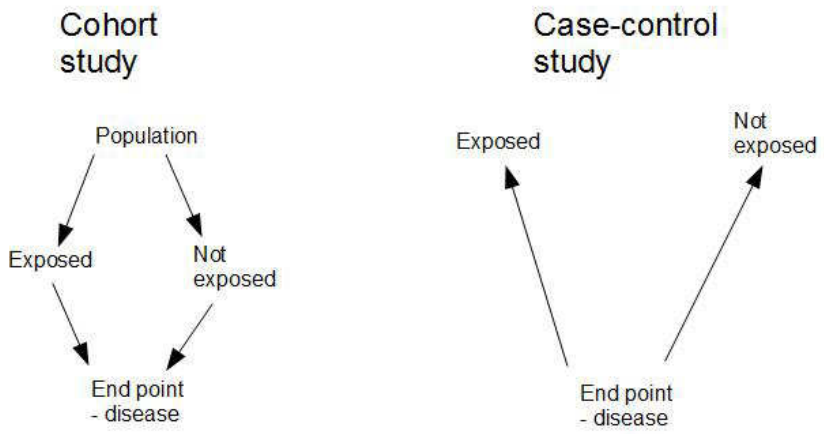

Figure 8.1 - Cohort and case-control studies.

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9. PROTOTYPE MATCHING DIAGNOSIS OF MENTAL DISORDERS

DeFife et al (2013) observed that "researchers have spent more than three decades trying to improve the classification of psychiatric disorders, leading to substantial empirical advances. Strikingly absent, however, has been a similar body of research on how to maximise diagnostic reliability, validity, and clinical utility in everyday practice" (p140).

The diagnosis of a mental disorder involves three non-overlapping components (Kraemer 2013):

a) Signal - variation due to patient characteristics relevant to specific disorder.

b) Interference - variation due to patient characteristics not relevant to specific disorder, but relevant to other disorders.

c) Noise - random error (eg: interview style of psychiatrist making the diagnosis).

The high reliability of the diagnosis is based on having little noise, and good validity is related to the signal. Practically, reliability is established by two independent applications of the same diagnostic rules (ie: same signal, some interference) [65]. Validity is the comparison of a "gold standard" diagnosis with the diagnosis of the person (same signal, no interference or noise) (Kraemer 2013).

The "gold standard" diagnosis is known as prototype matching diagnosis - ie: comparing the patient's symptoms with a prototypical description of the disorder (DeFife et al 2013) (table 9.1). The alternative method, presented in DSM-IV (APA 1994), is to count criteria fulfilled and apply a cut-off point (eg: 5 of 9 symptoms present in a two-week period for major depressive disorder).

- Patients who match this prototype are characterised by relatively constant feelings of depression over a period of weeks or months. They are unhappy or incapable of experiencing pleasure, have trouble concentrating or making decisions, and feel fatigued or lethargic. They may experience feelings of worthlessness or inappropriate guilt and have recurrent thoughts of death or suicide. Patients who match this prototype tend to have trouble

[65] The independence may be two different individuals diagnosing the same person (inter-rater or inter-observer reliability), or one psychiatrist making a diagnosis of the same person at two points in time (test-retest reliability).

sleeping (either sleeping too little or too much, often waking up in the middle of the night unable to return to sleep) and experience changes in weight or appetite (either losing interest in food or overeating). They may also manifest disturbances in motor activity, such as agitation or psychomotor retardation.

(Source: DeFife et al 2013 e-appendix)

Table 9.1 - Example of prototype for major depressive disorder.

If there is no gold standard, other ways of establishing validity are required. For example, predictive validity is the future documented outcome of the diagnosis (same signal, different interference), or discriminant validity is the lack of correlation with characteristics not associated with the diagnosis (different signal, same interference) (Kraemer 2013) (table 9.2).

Feeling Unhappy Disorder
5 symptoms - low mood; lack of motivation; sleep problems; negative thoughts; suicidal thoughts (but not obsessions).

Signal = variation between individuals on the five symptoms, either in terms of level of each one, or presence of one but not another.

Interference = variation between individuals on symptoms like obsessions.

DSM-type diagnosis - eg presence of three of five symptoms currently.

Table 9.2 - Diagnosis of hypothetical mental disorder.

DeFife et al (2013) assessed the validity of prototype matching diagnosis by clinicians by correlating it with patients' self-reports. Eighty-four psychiatric outpatients at Harvard Medical School, USA, were recruited. Prototype diagnoses were made for six mood and anxiety disorders, including major depressive disorder and panic disorder, based on DSM-IV criteria.

The correlations between self-reports and prototype matching diagnosis were stronger for major depressive disorder and dysthymic disorder than the other disorders. For example, the correlation between the prototype matching diagnosis of major depressive disorder and diagnosis via the depression sub-scale of the Personality Assessment Inventory (Morey 1991) was 0.47 ($p<0.05$) and 0.42 ($p<0.05$) with the suicidal ideation sub-scale.

In a second study, DeFife et al (2013) asked two psychiatrists to independently diagnose 143 outpatients at a primary care hospital using prototype matching. Their average correlation was 0.50 (ie: 50% agreement)

(range: 0.35 - 0.73) for the six mood and anxiety disorders.

DeFife et al (2013) argued for prototype matching diagnosis from their studies, but Kraemer (2013) questioned some of the methodology.

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10. YOGA AND SCHIZOPHRENIA

Non-pharmacological treatments for mental disorders are often sought, partly because some sufferers do not respond to drugs or cannot tolerate the side effects. Psychological therapies are the obvious main alternative to pharmacological treatments, but complementary and alternative techniques have grown in popularity in relation to both physical and mental health.

One such being yoga, which is based on the traditional Indian practice of meditation, breath control, and exercises. It is reported to help with stress reduction, and in coping with pain (Cramer et al 2013).

In terms of mental disorders, benefits for individuals with depression (eg: Pilkington et al 2005 [66]) or anxiety disorders (eg: Li and Goldsmith 2002 [67]) have been reported. But what about with psychosis? Cramer et al (2013) undertook a meta-analysis of the benefits of yoga for individuals with schizophrenia.

The researchers looked for randomised controlled trials comparing yoga to standard care, or to non-pharmacological treatments published before the end of August 2012. Improvements in symptom severity (as measured by clinician-rated scales like the Brief Psychiatric Rating Scale (BPRS); Overall and Gorham 1962 [68]), and improvements in quality of life (as measured by validated scales) were the primary outcome measures.

Four studies were found to fulfil the inclusion criteria with a total of 288 patients (table 10.1). Their statistical data was integrated by meta-analysis to give an overall effect size (standardised mean differences; SMD) [69].

No evidence was found for short-term effects (eg: 12 weeks) of yoga over usual care on the positive (eg: auditory hallucinations) and negative (eg: catatonia) symptoms of schizophrenia, but a moderate overall effect (ie: significant) was found for quality of life. Yoga did no better than exercise on either outcome measure.

The methodology quality of the studies was poor in some of the studies with a high risk of bias. For example, certain studies did not state the diagnostic criteria for schizophrenia used nor the yoga tradition/practices involved. No study reported the long-term effects (eg: 12 months). Potential bias occurred in

[66] A meta-analysis of five studies with a cautious conclusion about the benefits.
[67] A review of 35 studies, of which 25 found a reduction in anxiety after yoga use.
[68] The BPRS has eighteen symptoms rated as 1 (not present) to 7 (extremely severe).
[69] SMD: 0.2-0.5 (small), 0.5-0.8 (moderate), and >0.8 (large effect size) (Cohen 1988).

STUDY	DETAILS
Xie et al (2006)	90 patients (no details if in- or out-patients); China; diagnosed by Chinese Classification of Mental Disorders (CCMD-3); length: 8 weeks; yoga vs usual care; no details of yoga type; risk of bias = 5/12 *
Duraiswamy et al (2007)	61 out-patients; India; DSM-IV diagnosed; length: 4 months; yoga (type: Swami Vivekananda Yoga Anusandhana Samsthana) vs exercise (both for 45 minutes per day); risk of bias = 6/12
Visceglia & Lewis (2011)	18 in-patients; USA; no details of diagnosis; length: 8 weeks; yoga vs usual care; no details of yoga type; risk of bias = 5/12
Varambally et al (2012)	119 in-& out-patients; India; DSM-IV diagnosed; length: 4 months; yoga (type: Swami Vivekananda Yoga Anusandhana Samsthana) vs exercise (both 45 minutes per day) vs usual care; risk of bias = 6/12

* higher score = less risk of bias (Cramer et al 2013)

Table 10.1 - Details of the four studies in the meta-analysis by Cramer et al (2013).

terms of selection of participants (eg: those likely to benefit) or lack of blinding of treatment or control from the clinician scoring the symptoms.

Cramer et al (2013) concluded: "Given the low number of available studies, definite conclusions about the effectiveness of yoga in patients with schizophrenia cannot be drawn at the moment. Future studies should ensure rigorous methodology and reporting, mainly adequate sample size, adequate randomisation, allocation concealment, intention-to treat analysis, and blinding of at least outcome assessors...".

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11. PROBLEMS WITH BIOLOGICAL PSYCHIATRY AND BRAIN SCANNING

Linden (2013) outlined three problems with "biological psychiatry":

i) It has not provided "biomarkers" (genetic basis) of mental disorders, and diagnosis remains based on reported symptoms. Part of the reason may be that psychiatric illness is more complex than physical illness, and the search for "dysfunctional" genes may have limited use (Linden 2013).

ii) There is still limited knowledge of the exact mechanisms underlying biological treatments. For example, serotonin-related drugs can help anxiety and depression, and for individuals with organic causes (eg: after a stroke) or without "demonstrable organic causes" (Linden 2013).

iii) Twenty-five years of research has not produced new biological treatments.

BRAIN SCANNING

Behrens et al (2013) observed that "Most neuroscientists would agree that some brain systems are more 'fashionable' than others".

Behrens et al (2013) examined the brain areas investigated by 7342 neuroimaging studies published between 1985 and 2008 [70]. These were studies that looked at the brain activity (ie: functional) related to particular behaviours.

The most popular area studied was the pre-supplementary motor area (pre-SMA), while the fusiform gyrus (and face processing) was popular in studies published in "high impact" academic journals.

Behrens et al (2013) concluded: "There are of course a host of possible explanations for such strong regional biases in neural popularity, and many of these have no Machiavellian implications" (p4).

In neuroimaging studies, "reverse inference" is the inference of a particular cognitive process from activation of a particular brain area. Poldrack (2006) described the logic used thus:

(1) In a study using task X, brain area A is activated.
(2) In other studies of cognitive process Y, brain area A is

[70] See database at http://www.brainmap.org/.

activated.
(3) Thus, brain area A demonstrates cognitive process Y in the study in (1).

For example, de Quervain et al (2004) offered participants in an economic exchange game the change to punish unco-operative players. The game might involve two players who are given a sum of money to share. Firstly, player A is given the money and shares it 50:50 with player B. Then player B is given some money and they do not share it. This is an unco-operative player. Player A now has the opportunity to punish player B's behaviour by sacrificing some money to take money from player B.

de Quervain et al (2004) found activation of the dorsal striatum in the brain when unco-operative players were punished and subsequently became co-operative (ie: effective punishment). Through reverse inference, this brain activation was inferred to reflect "the rewarding properties of altruistic punishment" (Poldrack 2006).

Poldrack (2006) argued for circumspection about the use of reverse inference. One problem is that other brain areas could also be active, which challenges statement (2) above.

Poldrack (2006) suggested that reverse inference could be used but as converging evidence with other techniques. For example, Greene et al (2001) inferred differences in brain areas related to emotions involved in personal or impersonal moral judgments from functional magnetic resonance imaging (fMRI) scans, and supported this with the reaction times to respond to such dilemmas. For personal dilemmas, participants were slower to respond suggesting an emotional involvement or conflict.

The reporting of neuroscience has grown in popularity in the media in recent years, leading to "neuromyths" (defined as "a misconception generated by a misunderstanding, a misreading, or a misquoting of facts scientifically established (by brain research) to make a case for use of brain research in education and other contexts" (OECD 2002 quoted in Dekker et al 2012).

Dekker et al (2012) found that around half of 15 neuromyths (table 11.1) were believed by 242 primary and secondary school teachers in the Dorset region of England and the Amsterdam area of the Netherlands. The teachers completed an online survey on the brain. The most commonly believed myths were "Individuals learn better when they receive information in their preferred learning style (eg: auditory, visual, kinaesthetic)" and "Differences in hemispheric dominance (left brain, right brain) can help explain individual differences amongst learners".

- Individuals learn better when they receive information in their preferred learning style (eg: auditory, visual, kinaesthetic).

- Differences in hemispheric dominance (left brain, right brain) can help explain individual differences amongst learners.

- There are critical periods in childhood after which certain things can no longer be learned.

- Children are less attentive after consuming sugary drinks and/or snacks.

- If pupils do not drink sufficient amounts of water (= 6–8 glasses a day) their brains shrink.

- It has been scientifically proven that fatty acid supplements (omega-3 and omega-6) have a positive effect on academic achievement.

Table 11.1 - Examples of neuromyths used by Dekker et al (2012).

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12. OBESITY AND ADDICTION

In this age when genetic studies are increasingly common, attempts to find gene(s) involved in obesity are of limited success. For example, a massive study of 250 000 individuals in Finland (Naukkarinen et al 2010) found a small number of genes (around thirty) associated with body mass index, but together these explained only 1.5% of the variance between individuals (Volkow et al 2013).

Volkow et al (2013) argued that there is an overlap in the physiological processes in obesity and drug consumption [71]. The processes are related to inhibitory control and sensitivity to reward. With obesity, hormonal abnormalities can change the energy needs of the body and consequently the sensitivity to food rewards, while the presence of highly palatable foods [72] (as in the West) is an issue for inhibitory control. The repeated consumption of a drug disrupts the "reward circuit" in the brain (figure 12.1). The common factor in both cases is the neurotransmitter dopamine, and its pathways in the brain (particularly in the ventral tegmental area and substantia nigra).

Common behaviours have been observed in drug addicted and obese individuals:

i) A reduced (blunted) response in the reward circuit in response to the reward - eg: a reduction in firing of dopamine neurons in certain areas of the brain when receiving food in animal models (Schultz 1998) [73].

ii) An increased sensitivity to cues related to the reward - eg: obese individuals shown pictures of their favourite high-calorie foods showed increased activity in certain areas of the brain (related to dopamine) compared to normal-weight women (Killgore and Yurgelun-Todd 2005).

iii) Decreased dopamine activity in brain areas linked to self-control and resisting urges - eg: compulsive food intake in obese rats (Johnson and Kenny 2011).

The opponent-process theory (Solomon 1980) explains addiction as motivated by the desire to stop the unpleasant withdrawal symptoms. For example, rats raised

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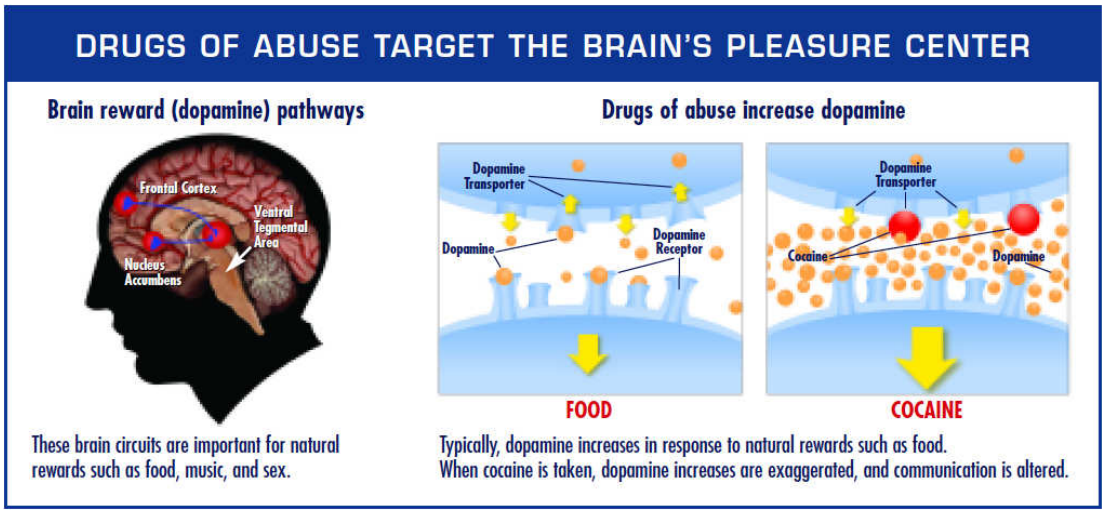
[71] The key characteristics of addiction are lack of control in relation to addicted substance, continued overuse despite consequences (eg: health, legal), and unsuccessful at cutting down (Smith and Robbins 2013).

[72] Eg: Foods rich in sugars and fat, which trigger addictive-like behaviours (Volkow et al 2013).

[73] Low baseline dopamine could be a vulnerability in both addiction and overeating producing a reward deficiency state, which motivates self-medication with drugs or food (conscious or unconscious) (Smith and Robbins 2013).



(Source: National Institute of Drug Abuse; http://www.drugabuse.gov/publications/science-addiction/drugs-brain; in public domain)

Figure 12.1 - Reward system of brain.

on high-sucrose diets showed physical withdrawal if the diet was changed to low-sucrose, but "While physical withdrawal symptoms from highly palatable foods have not been reported in humans, dysphoria has been anecdotally described after removing sugar from the diet, potentially indicating psychological withdrawal" (Smith and Robbins 2013). Studies with rats have also shown craving for sugar (Smith and Robbins 2013).

The similarities between addiction and binge eating disorder is particularly strong (table 12.1) (Smith and Robbins 2013).

Symptom	Substance Dependence	Binge Eating Disorder
Escalation of use	"taken in larger amounts or over a longer period than intended"	"Eating large amounts of food when not feeling physically hungry"
Loss of control	"unsuccessful effort to cut down"	Sense of lack of control during binges
Social consequences	eg: social activities given up because of drug use	"Eating alone because of being embarrassed by how much one is eating"
Personal distress	continued use despite problems and risks	eg: feeling disguised with self

(Based on Smith and Robbins 2013 table 1 p805)

Table 12.1 - DSM-IV criteria for substance dependence and binge eating disorder.

The similarities between addiction and obesity/binge eating is not complete. For example, though dopamine is important in drug addiction, its role in eating and food-related behaviour is less clear. Depending on the site of injections of dopamine into the brain of rats, food consumption can increase or decrease (Smith and Robbins 2013).

Another key difference between the two behaviours is "the necessity of food consumption for energy, growth, and survival. As such, there are a multitude of anatomical regions and hormone and neurotransmitter systems that modulate food intake beyond reward and pleasurable responding. The mechanisms implicated in obesity in different individuals could stem from alterations in any one of these systems, causing dysfunction of hunger and satiety signals. Additionally, there is sufficient evidence that the reward responses elicited by highly palatable foods' action on opioid and dopamine systems are not as potent as those of addictive drugs, which more directly influence these neurochemical pathways..." (Smith and Robbins 2013 p808).

Sinha and Jastreboff (2013) highlighted stress as key in the development and relapse of addiction as well as in eating patterns and obesity. Stress here is defined as "the process by which any highly challenging, uncontrollable, and overwhelming emotional or physiological event or series of events result in adaptive or maladaptive processes required to regain homeostasis and/or stability" (Sinha and Jastreboff 2013 p827). This regaining of balance involves "allostasis" (achieving of a new physiological homeostasis). Excessive stress is an increased "allostatic load" which can produce imbalance in physiological processes, and the susceptibility to disease.

Sinha and Jastreboff (2013) reported greater alcohol use, smoking, and higher body mass index (BMI) among 588 healthy US adults who had experienced higher numbers of stressful events and for longer periods in their lives. For example, obese individuals ($n = 183$) had a mean total stress score of 26 (out of 62) compared to less than 20 for lean adults ($n = 206$) ($p<0.0001$). For alcohol use, these individuals classed as dependent (DSM-IV-TR criteria) had an average stress score of over 28 compared to less than 22 for regular users ($p<0.0001$). Finally, smokers had a stress score of 27 to 21 for non-smokers ($p<0.0001$).

The stressed individuals (score >24) had significant differences in their fasting plasma glucose and insulin in a morning screening compared to the least stressed individuals (score <14). This showed the relationship between cumulative stress and metabolic changes/dysfunction.

Stress alters eating behaviour in both reducing food intake as well as increasing highly-palatable, calorie-dense foods consumed. Up to half of laboratory studies with humans and animals show the latter, and the others show no change or a reduction (Sinha and Jastreboff 2013).

The differences in results between studies depends on factors in the design of the experiments like (Sinha and Jastreboff 2013):

- Type of stressor used (eg: mild electric shocks).
- Length of stress.
- Amount of food available.
- Type of food available.
- Hunger level at start of the experiment.

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13. STUDYING UNEMPLOYMENT AND MENTAL ILLNESS

Unemployment is associated with poorer physical and mental health. For example, Linn et al (1985) reported that unemployed individuals visited their doctor more, took more medication, and spent more sick days in bed than employed individuals, even though they did not have more diagnosis of physical illness. While Jahoda (1982) described the effect on mental health via five factors - time structure, social contact, collective purpose, status, and activity. In other words, unemployed individuals have less social contact, meaning, and things to do with their day which produce the negative mental health consequences.

Zhang and Bhasavar (2013) were interested in the actual relationship between being unemployed and mental illness. They undertook a literature search for the period 1970-2011 using keywords like "unemployed", "employed", and "psychosis". The inclusion criteria included studies of unemployment longer than three months, prospective studies, and clinically based measures of mental illness. This produced ten studies.

Unemployment was found to proceed the development of mental illness, particularly depression and anxiety, which suggested a direction of cause. However, there were methodological issues and differences between the studies:

1. The possibility of reverse causality (ie: mental illness leads to unemployment). This would be difficult to study as discrimination laws mean that employers will not give mental illness as the reason for sacking an individual.

2. Differences in measurement of mental illness. This could include increases in symptoms or the appearance of symptoms, subjective (eg: self-report questionnaire) or objective measures (eg: admission to hospital), general mental illness or specific mental disorders.

3. How the data collected - eg: recurrent interviews by the researchers (primary data) or the use of general surveys collected by official organisations, for example (secondary data).

4. Context factors - eg: being unemployed in a time of high unemployment may be different to being unemployed in an economic upturn. Other factors influencing the effect of unemployment include social support, gender, and age.

5. The quality of employment. Employment may not

automatically be the opposite of unemployment as insecure and poor quality employment can have negative consequences for mental health.

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14. DEPRESSION AND ELECTRO-CONVULSIVE THERAPY

Major depression is the most common mental disorder experienced by up to one-fifth of individuals in their lifetime as well as being the fourth highest cause of premature death in the world (Gohar et al 2012).

Electro-convulsive therapy (ECT) is a treatment that can be used with major depressive disorder (MDD). Some clinicians see ECT as the last resort after medication and therapy fail, others are against its use at all, and still others argue that it has "the most positive treatment effects of all of medicine" (Dukakis and Tye 2006 quoted in Gohar et al 2012).

Arguments for and against its use include (Gohar et al 2012):

- For - where medication is not possible (eg: pregnant women).
- For - low mortality (except where heart and respiratory problems already exist).
- Against - cognitive side effects: eg: post-ECT confusion lasting minutes or hours; retrograde amnesia.

The efficacy of ECT revolves around the measurement of improvement. One recently developed outcome measure is the Clinically Useful Outcome Depression Scale (CUDOS) (Zimmerman et al 2008). This questionnaire has sixteen items (eg: "I felt sad or depressed", "I thought I was a failure", "I though that the future looked hopeless") (and two general ones), each rated in the last week as:

- 0 = not at all true (0 days)
- 1 = rarely true (1-2 days)
- 2 = sometimes true (3-4 days)
- 3 = often true (5-6 days)
- 4 = almost always true (every day).

Gohar et al (2012) found a significant decline in CUDOS scores of thirty depressed patients in the USA between pre-ECT (mean: 48.77) and post-ECT (mean: 26.07). This was an archival study that reviewed patients' records at Baystate Health (service) in Massachusetts.

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15. OFFENDING AND SOLDIERS

In the last decade or so, over 150 000 UK military personnel have been deployed in Iraq and/or Afghanistan. "There have been many accounts in the media of the challenges these individuals face in their transition back to civilian life, including problems related to housing, mental health, employment, relationship breakdown, and substance misuse, but also aggression, violent offending, and incarceration" (MacManus and Wessely 2011).

How common is criminal behaviour and violent offending by soldiers returning home after seeing combat? For example, 9.1% of prisoners in England and Wales self-reported time in the military (National Association of Probation Officers 2009 quoted in MacManus and Wessely 2011), while the Ministry of Defence (2010 quoted in MacManus and Wessley 2011) using personnel records calculated a figure of 3.5%. "Their analyses showed that although ex-serving personnel are less likely than the general population to offend, they are more likely to be in prison for violent and sexual offences, and they make up the largest single occupational group in prison" (MacManus and Wessley 2011) [74].

It is assumed that combat has negative consequences on mental health, like Post-Traumatic Stress Disorder (PTSD) or alcohol misuse, and this explains subsequent violence. There are a limited number of studies, and they usually depend on self-reports of violence and criminal behaviour (MacManus et al 2013). Some studies use highly selective samples or collect the data many years after deployment or leaving the armed services (MacManus et al 2012).

MacManus et al (2012) reported on a random sample of 4928 UK military personnel who were deployed in Iraq in 2003 (known as Operation (OP) TELIC 1-6). Of those who responded to the violence questions (n = 4609), 581 (12.6%) admitted having been physically violent to a family member or other person in the weeks after returning home. This violence was significantly associated with pre-military anti-social behaviour (adjusted odds ratio = 3.58), combat exposure, post-deployment symptoms of PTSD (odds ratio = 4.83), and alcohol misuse (odds ratio = 3.10) as well as general characteristics like being younger, male, and less educational qualifications. Thomas et al (2010), using a US cohort returning from Iraq and similar questions,

[74] US studies have recorded post-deployment violence and combat exposure among those returning from conflicts like the Vietnam war or the 1990-1 Gulf war (eg: Black et al 2005).

found a rate of 17.7% for interpersonal violence in the first three months back.

MacManus et al (2013) reported the first study to date in the UK using self-reported measures and also objective data. The Ministry of Defence recruited a random stratified sample of 13 856 UK military personnel [75] [76], who had seen action in Iraq or Afghanistan (n = 9095), or were due to be deployed there. Each individual completed extensive questionnaires about their military experiences and post-deployment. Criminal offences were collected from the Ministry of Justice Police National Computer database [77]. The observation period was January 2003 to July 2011 [78].

It was found that 15.7% of the sample had committed at least one criminal offence in their lives (of which about two-thirds of those were violent offences) [79]. Offending was greater in the post-deployment period than in the pre-deployment period or pre-military period of the individuals' lives (12.2 per 1000 person years vs 8.6 vs 5.4 for all offences, and 7.6 vs 4.4 vs 3.6 for violent offences respectively).

The strongest predictors of violent offending were age (18-30 years old), sex (male), rank (not officer), and pre-service violent offending (figure 15.1) [80].

Among the sample, deployment in Iraq or Afghanistan was associated with subsequent violent offending more than non-deployment, and for individuals deployed in a combat role versus non-combat work in these countries. The risk of violent offending increased among deployed individuals with number of traumatic events experienced.

Among the deployed individuals in the post-deployment period, PTSD, alcohol misuse, and self-reported aggressive behaviour [81] significantly predicted

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[75] 13 856 individuals completed questionnaires at phase 1 (June 2004 - March 2005), phase 2 (November 2007 - September 2009) or both. Phase 1 involved questionnaires sent to 17 689 personnel who had been in Iraq (18th January - 28th June 2003). Phase 2 was a "replenishment sample" of 6628 individuals who were newly recruited since the study began.

[76] Of the total, 1497 were female.

[77] This database only records offences that come to the attention of the police, so it could be an underestimate (MacManus et al 2013).

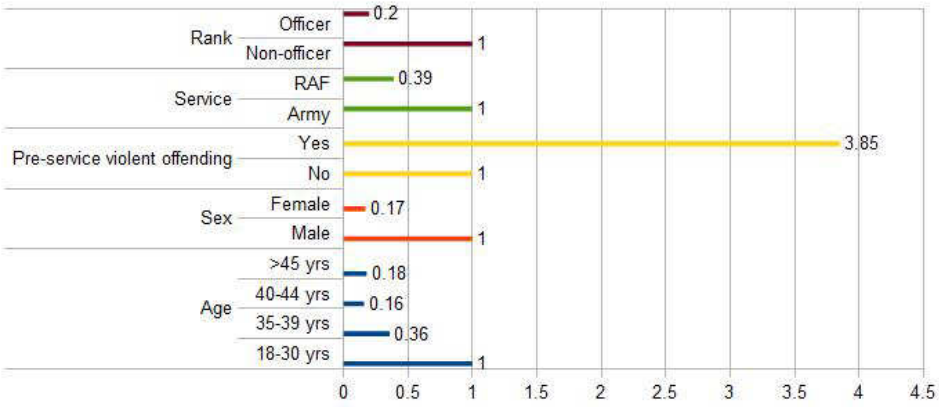
[78] It was a prospective study (and this eliminates the problem of recall bias) (MacManus et al 2013).

[79] This was 17% of the males in the sample (compared to 28.3% of males in the general population aged 18-52 years in England and Wales in 2006) (MacManus et al 2013).

[80] The point is that the majority of individuals who leave the military do not offend (Iversen et al 2005), so it is not just the time in the armed services that explains subsequent criminal behaviour (MacManus and Wessely 2011). The Howard League for Penal Reform (2011 quoted in MacManus and Wessley 2011) interviewed a small number of ex-military prison inmates convicted of violent offences, and prior involvement in crime before joining the armed forces was a key factor.

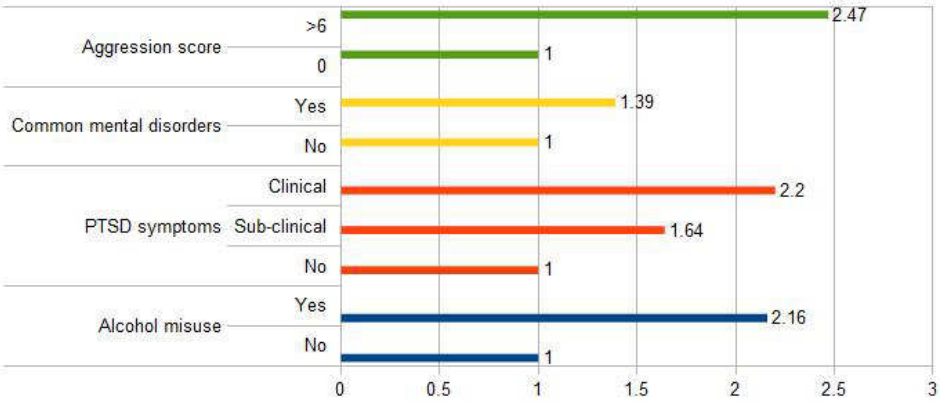
[81] "In the past month, how often did you: get angry at someone and yell or shout at them; get angry with someone and kick or smash something, slam the door, or punch the wall; get into a fight with someone and hit the person; and threaten someone with physical violence" (MacManus et al 2013 p909). Response options were: never, once, two to four, five or more.

violent offending (figure 15.2).



(Data from MacManus et al 2013 table 2 p911).

Figure 15.1 - Significant adjusted hazard ratios for violent offending during study.



(Data from MacManus et al 2013 table 4 p913)

Figure 15.2 - Significant adjusted hazard ratios for post-deployment violent offending.

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16. RESILIENCE AND MENTAL ILLNESS

"Resilience" is a resistance to the effects of stress, and is beneficial in relation to mental health problems. For example, studies have found that nurses working in intensive care units who had higher resilience coped better (Mealer et al 2012) (table 16.1), and likewise earthquake survivors were less likely to report subsequent Post-Traumatic Stress Disorder (PTSD) symptoms (Ahmad et al 2010) [82]. While among 307 Norwegian 14-18 year-olds in Trondheim, there were significant negative correlations between resilience scores (using the Resilience Scale for Adolescents; READ [83]) and depression (-0.39), anxiety (-0.34), obsessive-compulsive (-0.29), and stress scores (-0.29) (Hjemdal et al 2011).

- Thirteen highly resilient nurses and 14 nurses with PTSD randomly selected from ICUs in the USA. Based on the interviews four domains emerged that distinguished the two groups:

1. Worldview - Resilient nurses "describe a worldview allowing acceptance that death is a part of life and that patient outcome cannot be controlled" compared to the other nurses with a worldview "aligned with regrets about patient outcomes and the inability to let go of negative experiences or the feeling that something more could have been done for a particular patient" (Mealer et al 2012 p1447).

2. Social network - eg: resilient nurses felt supported.

3. Cognitive flexibility - Resilient nurses showed this behaviour while the other nurses were cognitively inflexible.

4. Self-care and balance - eg: resilient nurses had a life outside work.

Table 16.1 - Mealer et al (2012).

Engmann's (2013) pilot study in Germany found that higher resilience was beneficial in recovering from depression. The case notes of 503 in-patients at the Brandis Rehabilitation Centre between August and December 2011 were retrospectively analysed. Resilience was measured by a shortened German version of the Resilience Scale (RS-11) (Wagnild and Young 1993). This contained eleven items scored 1 (strongly disagree) to 7 (strongly

[82] Forty-four individuals were interviewed in May 2006, seven months after an earthquake in Northwestern Frontier Province in Pakistan which killed over 250 000, and 51 individuals in May 2007. Higher scores on the Connor-Davidson Resilience Scale (CD-RISC) (Connor and Davidson 2003) were associated with lower PTSD symptom scores. The CD-RISC has 25 items (eg: "tend to bounce back after illness or harship") scored 0-4 to give a range of 0-100.

[83] This is based on the Resilience Scale for Adults (RSA) (Friborg et al 2003). Resilience is seen as based on three categories - personal dispositions, family cohesion, and social support outside the family.

agree) (eg: "I usually manage one way or another"; "I am determined"), where a lower score is low resilience (minimum = 11) and a higher score means higher resilience (maximum = 77).

Engmann (2013) made three predictions:

i) Individuals with higher resilience scores will have lower depression scores at the beginning of treatment. This was supported by a Pearson correlation coefficient of -0.63 ($p<0.0001$).

ii) Individuals with higher resilience scores with be more likely to have remission of depression symptoms within three weeks of treatment than individuals with lower scores. Sixty-one individuals were rated as having remission (defined as a score of ten or less on the Beck Depression Inventory; BDI), and 252 had no remission [84]. The mean resilience score of the remission group was 53.56 compared to 41.77 for the no-remission group.

iii) Individuals with higher resilience scores will be more likely to be classified as "fit for work" after treatment than the lower scorers. The mean resilience score for individuals "fit for work" (n = 136) was 51.99 compared to 42.97 for those classed as "unfit for work" (n = 223).

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[84] The remainder showed some improvement, but not enough for remission.

17. AN EXAMPLE OF THE PROBLEM OF GAINING INFORMED CONSENT IN HIV RESEARCH

HIV infection among married monogamous women in India is higher than expected for that group. The mode of transmission appears to be extra-marital sex by their husbands, and the inability of the wives to refuse sex or negotiate condom use, particularly if the women are young, poor, illiterate, and financially dependent on their husbands. High-risk sexual behaviour is increased among men who drink alcohol or use drugs (Varma et al 2013).

One strategy of HIV prevention is with the wives, and such interventions (or studies) require the consent of the husbands (ie: husbands as "gatekeepers"). For example, the Madras Injection Drug Users and AIDS Cohort study (MIDACS) (Solomon et al 2011) asked men to bring their wives to a health centre or to give the contact details to researchers. This situation "automatically provided husbands the power to make choices on behalf of their wives, who suffer the consequences of their husbands' risky behaviours" (Varma et al 2013).

Seeking permission from the husbands in India or other males in the locality (eg: village leaders [85]) is the culturally acceptable practice in such patriarchal societies, but it raises ethical issues for researchers. For example, the participant in the research should be able to give informed consent - ie: not coerced into it. The husband is able to tell the wife to participate when she may not want to, and stop her when may want to participate in the research. Thus a challenge to the principles of autonomy and voluntariness in research. Also "the continuation of such practices could also lead to a perpetual subordination of women to men. Current strategy also reinforces the prevailing sexual norms of men's authority over women. This could be detrimental not only to fighting against HIV infections but also to creating a society that fosters sexual equity" (Varma et al 2013 p333).

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[85] Osrin et al (2009) called these individuals the "cluster guardians".

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18. VICTIMISATION AND ADULTS WITH LEARNING DISABILITIES

The criminal victimisation of adults with learning disabilities (AWLDs) is "systematically under-reported" for a variety of reasons, principally the labelling of crimes as "incidents" by organisations and handling them internally, and the AWLDs not recognising their victimisation. Other reasons for AWLDs include not knowing how to report victimisation, communication problems, or the fear of retaliation if reported (Evans 2013).

The concept of "victim" itself is a social construction (Quinney 1974), based on "an inherently subjective process that depends on the target's perception of the act. In other words, one person may perceive a physical confrontation between two people to be 'horseplay' or justifiable punishment while another may perceive the same act to be excessive abuse and consider it victimisation. This distinction is crucial because it can trigger a victim's or a witness's inclination to respond to or report the instance as victimisation" (Evans 2013 p114).

Victimisation of AWLDs covers physical harm, emotional, mental and verbal abuse, financial exploitation, neglect and inhumane treatment (Evans 2013).

Evans (2013) interviewed ten AWLDs and fifteen individuals who worked with them (service providers) in a supported living organisation in the USA about victimisation. Four main themes emerged from the analysis of the interviews.

1. Definitions of victimisation.

Service providers described a wider definition than AWLDs. The latter tended to mention specific crimes as seen on television programmes (eg: robbery, theft). While "Codis" is an example of the service providers' views: "I see [victimisation] as the clerk at Kroger looking at [my clients] differently, so I see victimisation, discrimination, maltreatment, every day and all over the place. My eyes are always open and I take it to heart whenever I see something like that happen" (pp117-118).

2. Victimiser motivations.

The intention of the victimiser (perpetrator) was important to the service providers with some seeing intention and culpability as linked, and others as not. "Jean" summarised the latter view: "If the person is

harmed in any way, then regardless of intent [that is victimisation]. We would definitely take action in that case" (p118). "Sandy's" statement represented the other view: "I know of several clients who were taken advantage of because the offending party knew they either did not have the cognitive ability to understand what was taking place, were unable to communicate to others, or were intimidated or isolated from other individuals. These are the people we should be most concerned about because they prey on vulnerability" (p118).

3. Proximity to victimisation.

Service providers involved in a situation were more likely to see it as ambiguous, while those observing (witnesses) viewed it as victimisation more often. For example, locking a client in their room could be the use of "time out" punishment for bad behaviour or "forced confinement". An example reported by "Flina" described the ambiguity of the perceptions: An AWLD "was hitting me repeatedly because I was trying to pass his meds, so I stepped back and I was going to give him a few minutes to calm down. This other staff person proceeded to take the meds out of my hand, pushed the client's head back into a chair while his arms were flailing and poured the pills down his throat... I reported it, but it was me against her, and no one could prove that it happened" (p119). Evans (2013) commented: "Although Flina perceived the forced medication as victimisation, she did not believe that she was victimised by her client's physical assault. Her reasoning was, '[There was] no intent to hurt me. He just didn't want to take his meds. Sometimes getting hit is part of this job'" (p119).

4. Situated predictability.

The perceptions of victimisation were influenced by the environment, and particularly being in the city. Service provider, "Trina" said: Clients "who are outside of their usual environment would be at a big risk for victimisation. If they were travelling in a different city or were in a new environment, they might be easily confused and taken advantage of, especially if they are alone and there is no advocate to warn them about harmful situations and stand up for them" (p119). While service user, "Lynn" reported: "When it gets dark out you have to be careful. Some people are dirty. I try to stay away from them, but there's always the chance that I could get attacked by a stranger. If I'm ever out after dark, I just hope and pray that it doesn’t happen" (Evans 2013 p120).

The perceptions of victimisation varied between service providers and AWLDs, and similar differences have been found in the definition of bullying between teachers and pupils (eg: Mishna et al 2005).

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19. OFFICIAL BIAS AND CRIME

Children of convicted parent(s) are more likely to be convicted of a crime themselves as adolescents or adults than children of non-convicted parent(s). This is known as the intergenerational transmission of crime, and various explanations have been proposed. Commonly, these include genes or shared environment.

Besemer et al (2013) argued for another explanation - "official bias": "official justice systems, such as the police and the court, are biased against known criminal families. As a result, they pay more attention to these families, which means that family members are more likely to be caught, prosecuted and processed by the criminal justice system and thus appear in official statistics more often" (p438). Thus, there is not a real association between parental conviction and offspring criminality, only a greater chance of being caught and convicted than in families with non-convicted parent(s).

West and Farrington (1977) first showed evidence of official bias in their analysis of the Cambridge Study in Delinquent Development (CSDD). This is an ongoing longitudinal study of 411 White working-class boys (born in 1953-4) in Bermondsey, south London begun in the early 1961-2. The participants were grouped into four levels of self-reported offending in their teens, and then analysed as those with and without convicted parent(s). At all levels of self-reported offending, sons of convicted fathers were more likely to be convicted themselves than sons of non-convicted fathers. But official bias was not the sole explanation for the difference as other risk factors like poor parental child-rearing and poor housing were also involved (Besemer et al 2013).

Besemer et al (2013) returned to the CSDD data for the participants up to the age of 32 (n = 365). Self-reported offending was measured for ten types of offences (eg: burglary, fraud, assault), and official convictions were taken from the Criminal Record Office in London. Four socio-economic variables were also measured - low family income, low family socio-economic status (SES), poor housing, and father's poor job record.

Overall, the participants with a convicted parent were nearly five times more likely to be convicted themselves than participants of non-convicted parents, but only just over twice as likely to self-report an offence.

The participants were divided into four levels of self-reported offending - low (0 offences), low average (1-5 offences), high average (6-25 offences), and high (>25 offences). Sons of convicted fathers were 3-5 times more likely to be convicted in all categories. This

supported the official bias explanation, but the four socio-economic variables were also shown to increase convictions (particularly in the high average and average offence level categories).

Thus: "A convicted parent was the strongest predictor of offspring convictions after controlling for offspring self-reported offending. Low family income and poor housing conditions also predicted offspring convictions independent from having a convicted parent. Thus, next to having a convicted parent, these social circumstances appear to bias official agencies and increase conviction risk for people with these characteristics" (Besemer et al 2013 p448).

Besemer et al (2013) suggested a number of ways in which the official bias occurs, including more police patrolling poor areas, stereotypes of the "criminal", and individuals from lower SES less able to pay to defend themselves in court.

The study hinges on the accuracy of self-reported offences, which is always a problem in terms of exaggeration, concealing, or forgetting information (eg: Junger-Tas and Haen Marshall 1999) [86].

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[86] These relate to the validity of the measure, but Junger-Tas and Haen Marshall (1999) listed other issues like sampling and response rate (eg: who participates or who does not), and reliability (eg: consistency of results over time).

20. TERRORISM SUPPORT AND POVERTY

Politicians often argue that poverty is the cause of political violence, and Western governments, for example, focus their international aid on reducing poverty around the world for this reason.

Focusing on poverty and the support for militancy, the evidence is varied. For example, using Pew's Global Attitudes Survey (GATS) data [87] for 2002, Mousseau (2011) found that support for Islamist terrorism was highest among the urban poor in fourteen Muslim countries. While Shafiq and Sinno (2010), using the same data for 2005, found that the relationship between income and support for suicide bombings depended on the country and the target. For example, 17.6% of the poor in Lebanon saw the suicide bombing of civilians "often justified" compared to 5.4% in Morocco. But the 61.5% of the latter saw the suicide bombing of Westerners in Iraq as justified compared to 25% of the poor in Indonesia.

The problem with such attitude surveys is gaining accurate measures of support for militancy/terrorism. Direct questions about support for groups like al-Qaida get high levels of "don't known/no opinion" responses (social desirability response) (eg: 40% in one study in Pakistan), while indirect questions are difficult to interpret the answers to (Blair et al 2013).

Blair et al (2013) tried to overcome such problems in their research in Pakistan. Individuals were asked about their support for four policies (eg: "The newly-elected national government has proposed reforming the Frontier Crimes Regulation and making tribal areas equal to other provinces of the country"), but half the 6000 respondents were told that one of four militant groups (eg: "Kashmiri tanzeems") supported the policy (treatment group). The difference in the mean between the treatment and control groups were used as the measure of support for the militant group. Blair et al (2013) observed: "When the object of evaluation is a policy (as opposed to a group), social desirability concerns are lessened because respondents (particularly those of lower class, ethnicity, or social status) are not asked to explicitly and directly divulge their beliefs about militants" (p34). This is known as an endorsement experiment.

Based on income groups (divided into five levels), the poor were less supportive of the four militant groups than the middle income groups. Using district wealth (based on three groups), the poor and wealthy were less supportive than the middle one. The urban poor were less supportive of the militant groups because they were more

[87] Details at http://www.pewglobal.org/.

likely to have experienced violence by the groups (eg: bomb attacks in their neighbourhood).

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