RESEARCH ARTICLE

Dysfunctional beliefs and antisocial personality disorder

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Beck identified dysfunctional beliefs associated with personality disorders and these form the basis of the Personality Belief Questionnaire (PBQ). The PBQ has not yet been empirically examined in relation to antisocial personality disorder (ASPD); here, we examined the associations between PBQ antisocial beliefs and ASPD diagnosis, identified using the International Personality Disorder Examination (IPDE). Adult male prisoners were grouped as ASPD only (n = 17), ASPD plus another personality disorder (n = 14), and no personality disorder (n = 18). Our hypotheses were: the ASPD only group would score highest on the PBQ antisocial scale than other scales; the ASPD only group would score higher on the PBQ antisocial scale than would those with no personality disorder; and the PBQ antisocial scale would best predict group membership. Men with ASPD only did not score highest on the PBQ antisocial scale, and, although they held more antisocial beliefs than men with no personality disorder, they also held significantly more dysfunctional beliefs on most other scales. Hence, antisocial beliefs are not a distinguishing feature. The PBQ antisocial scale did not discriminate groups, but the avoidant and paranoid scales did. The PBQ antisocial scale does not relate to antisocial personality disorder, although it may relate to primary psychopathy.

Keywords: antisocial personality disorder; Personality Belief Questionnaire

Cognitive models of personality focus upon core beliefs or basic schemas that activate affective responses and behavioural strategies (Beck, Freeman, & Associates, 1990). Core beliefs or schemas are the cognitive representations of an individual’s life experiences. In some cases, those experiences may have led to maladaptive beliefs, which trigger dysfunctional emotions and behaviours. Cognitive theories of personality disorder suggest that maladaptive beliefs are evoked across many situations, leading to persistent and generalised dysfunction (Davidson, 2007).
Beck and colleagues (1990) listed the dysfunctional beliefs associated with DSM-III-R (American Psychiatric Association [APA], 1987) personality disorders, with the exception of schizotypal and borderline which were thought not to be characterised by specific thought content. For example, a core belief that people are malevolent leads to wariness, hostility, and a readiness to counter-attack (paranoid personality disorder). These beliefs formed the basis of the Personality Belief Questionnaire (PBQ; Beck & Beck, 1991), which has been examined empirically in relation to personality disorders.

Beck et al. (2001) investigated the reliability and validity of the PBQ with a sample of 756 outpatients receiving cognitive therapy. The personality disorder scales of the PBQ showed good internal consistency (Cronbach’s $\alpha$ .81 to .93) and fair to good test–retest reliability (Pearson’s $r$ .57 to .93). Of the whole sample, 56% had Axis I disorders and 44% had Axis II disorders, with avoidant, dependent, obsessive-compulsive, narcissistic, and paranoid featuring in the latter group. These five personality disorder types were the focus of validation analyses. First, selecting those patients with only the diagnosis in question and no others, it was hypothesised that they would score significantly higher on the pertinent personality disorder subscale over the other personality disorder subscales. This hypothesis was supported. Second, it was hypothesised that patients with a specific primary personality disorder diagnosis (i.e., who may or may not have had an additional personality disorder diagnosis) would score higher on the pertinent personality disorder subscale than would those with another personality disorder diagnosis and those with no personality disorder diagnosis (i.e., those with an Axis I diagnosis). This hypothesis was also supported.

Overall, the study by Beck et al. (2001) supported the association between certain personality beliefs and corresponding personality disorders. This conclusion applies only to the five personality disorder types that featured in their sample; they had insufficient numbers of people with histrionic, antisocial, and schizoid personality disorders to test the associations between these beliefs and personality disorders. In this study, we aimed to extend Beck et al.’s (2001) findings by examining the associations between personality disorder beliefs, as measured by the PBQ, and antisocial personality disorder (ASPD). Our hypotheses were that the ASPD only group would score higher on the PBQ antisocial scale than other scales; that the ASPD only group would score higher on the PBQ antisocial scale than would those with no personality disorder; and that the PBQ antisocial scale would best predict group membership.

Method

Participants

Participants were recruited from three prisons across south Wales. Adult male prisoners convicted of any non-sexual offence were eligible for the
study unless they met one of the following exclusion criteria. First, those with less than two months to discharge were excluded so that all recruits would have enough time to complete the study. Second, those who had taken part in intervention programmes within the six months prior to recruitment were excluded, since selection for and completion of programmes requires the completion of a range of psychometric tests that may have affected responses in this study.

Eligible prisoners were identified by a member of prison staff and invited to volunteer. Of 138 offenders who showed an initial interest in the study, 18 (13%) were transferred or released before interview, and 26 (19%) declined to take part in the study. Of the 94 who were recruited to the project, 23 (24%) did not complete both assessments. Therefore, participants in this study were 71 convicted male offenders, whose mean age was 33 years ($SD = 8.03$). All were white and just over half (55%) were married or cohabiting. Index offences were: violence ($n = 31; 44$%), acquisitive ($n = 18; 25$%), drug-related ($n = 20; 28$%), and dangerous driving ($n = 2; 3$%).

**Measures**

**International Personality Disorder Examination (IPDE; Loranger, 1999)**

DSM-IV (APA, 1994) personality disorder diagnoses were obtained using the IPDE, a semi-structured diagnostic interview. The IPDE consists of 99 items, each scored as absent or normal (score 0), exaggerated or accentuated (score 1), or at the criterion level (score 2). The item scores contribute to the criteria used to diagnose personality disorders, with the number of criteria that need to be definitely met (score 2) for a diagnosis ranging from four to six.

**Personality Belief Questionnaire (PBQ; Beck & Beck, 1991)**

The PBQ is a 126-item self-report questionnaire that aims to identify respondents’ key beliefs in nine of the DSM-III-R personality disorder domains, with 14 items in each domain. Schizoid and schizotypal personality disorder were run together in one set of beliefs. Originally, no items were provided for borderline personality disorder, since this disorder was seen as more variable in presentation and less specific in content than other disorders (Beck et al., 1990). However, items that discriminate borderline personality disorder have since been identified, and hence a score for borderline beliefs may be calculated (Butler, Brown, Beck, & Grisham, 2002). Antisocial PBQ items include: ‘I have to look out for myself’; ‘Lying and cheating are OK as long as you don’t get caught’; and ‘Other people are weak and deserve to be taken.’
**Procedure**

Ethical approval was obtained for the study from the relevant research ethics committees. A prison liaison person, appointed by the governor to facilitate the research, recruited potential participants by informing prisoners on normal prison wings about the study using posters, information sheets, and personal contact. Volunteers were then seen by the researcher, who gave further information about the study. Prisoners were informed that participation was unpaid, and they were made aware that they could withdraw from the study at any time. After providing informed, written consent, two further appointments were made, one to conduct the IPDE and the other to complete the PBQ. These assessments were conducted by a trained interviewer (GC).

**Statistical analysis**

Participants were split into three groups. First, as a conservative grouping, we selected those who met the criteria for a definite diagnosis of antisocial personality disorder (ASPD) only. Then, because diagnoses often co-occur, we grouped those not in Group 1 who met the criteria for ASPD and also met probable or definite criteria for another personality disorder, including personality disorder not otherwise specified (i.e., ASPD plus other PD). The third group consisted of those who did not meet diagnostic criteria for any personality disorder.

Data were analysed using SPSS 12.0.2 for Windows. The distribution curves for most variables showed a positive skew; hence, square-root transformations were conducted on all variables. Our hypothesis that the ASPD group would score higher on the ASPD scale of the PBQ than on other PBQ scales was tested by visual inspection of the mean scale scores. Our hypothesis that the ASPD group would score higher on the ASPD scale of the PBQ than those with no personality disorder was tested by comparing the means for each PBQ subscale for men with definite ASPD only using ANOVA, followed by pairwise comparisons. Our hypothesis that the antisocial scale of the PBQ would best predict group membership was tested using a discriminant function analysis. The predictor variables entered into the analysis were the 10 subscales of the PBQ.

**Results**

Of the 71 men, 31 had a definite diagnosis of ASPD (43.67%) and a further 12 (16.90%) had a probable diagnosis. Diagnoses are presented in Table 1. The numbers of participants in each of the three groups to be analysed were: 17 with a definite IPDE diagnosis of ASPD only, 14 with definite ASPD plus another personality disorder diagnosis, and 18 with no personality disorder diagnoses.
The mean scores on the PBQ subscales for the three groups are presented in Table 2. Our hypothesis that the ASPD only group would score highest on the PBQ antisocial scale, compared with all other PBQ scales, was not supported. The antisocial scale score was ranked sixth of the 10 scales.

A multivariate ANOVA (using transformed data) showed significant differences between PBQ means across groups for eight of the PBQ subscales (i.e., all but the dependent and obsessive-compulsive subscales). Pairwise comparisons between the ASPD only and no PD groups showed no differences on the schizoid, dependent, and obsessive-compulsive subscales. The ASPD group scored significantly higher on the other seven PBQ scales: paranoid (mean difference = 1.01, SE = 0.45, p < .03), antisocial

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Definite</th>
<th>Probable</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paranoid</td>
<td>3</td>
<td>2</td>
<td>66</td>
</tr>
<tr>
<td>Schizoid</td>
<td>2</td>
<td>3</td>
<td>66</td>
</tr>
<tr>
<td>Schizotypal</td>
<td>0</td>
<td>0</td>
<td>71</td>
</tr>
<tr>
<td>Cluster B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antisocial</td>
<td>31</td>
<td>12</td>
<td>28</td>
</tr>
<tr>
<td>Borderline</td>
<td>2</td>
<td>13</td>
<td>56</td>
</tr>
<tr>
<td>Histrionic</td>
<td>0</td>
<td>0</td>
<td>71</td>
</tr>
<tr>
<td>Narcissistic</td>
<td>0</td>
<td>0</td>
<td>71</td>
</tr>
<tr>
<td>Cluster C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoidant</td>
<td>0</td>
<td>2</td>
<td>69</td>
</tr>
<tr>
<td>Dependent</td>
<td>1</td>
<td>0</td>
<td>70</td>
</tr>
<tr>
<td>Obsessive-compulsive</td>
<td>2</td>
<td>3</td>
<td>66</td>
</tr>
<tr>
<td>Not otherwise specified</td>
<td>9</td>
<td>2</td>
<td>60</td>
</tr>
</tbody>
</table>

Table 2. Mean PBQ scale scores for ASPD only (n = 17), ASPD plus other PD (n = 14), and no PD (n = 18).

<table>
<thead>
<tr>
<th>PBQ scale</th>
<th>ASPD only</th>
<th>ASPD + other</th>
<th>No PD</th>
<th>F(2,46)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paranoid</td>
<td>19.00 (13.80)</td>
<td>26.71 (8.87)</td>
<td>10.44 (7.16)</td>
<td>9.83</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Schizoid</td>
<td>21.94 (8.79)</td>
<td>28.43 (10.20)</td>
<td>17.17 (8.24)</td>
<td>5.70</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Antisocial</td>
<td>16.65 (12.34)</td>
<td>22.50 (9.56)</td>
<td>10.33 (9.85)</td>
<td>7.16</td>
<td>&lt;.002</td>
</tr>
<tr>
<td>Borderline</td>
<td>15.47 (11.01)</td>
<td>20.00 (8.28)</td>
<td>7.89 (5.95)</td>
<td>9.09</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Histrionic</td>
<td>14.53 (11.67)</td>
<td>18.21 (8.89)</td>
<td>7.39 (3.85)</td>
<td>7.28</td>
<td>&lt;.002</td>
</tr>
<tr>
<td>Narcissistic</td>
<td>11.24 (10.31)</td>
<td>13.21 (11.58)</td>
<td>4.83 (4.15)</td>
<td>4.12</td>
<td>&lt;.02</td>
</tr>
<tr>
<td>Avoidant</td>
<td>16.88 (10.54)</td>
<td>21.79 (6.90)</td>
<td>9.72 (5.52)</td>
<td>10.25</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Dependent</td>
<td>12.06 (9.64)</td>
<td>13.64 (10.72)</td>
<td>8.89 (5.16)</td>
<td>0.30</td>
<td>.74</td>
</tr>
<tr>
<td>Obsessive-compulsive</td>
<td>22.06 (11.08)</td>
<td>26.07 (9.33)</td>
<td>23.00 (10.06)</td>
<td>0.61</td>
<td>.55</td>
</tr>
<tr>
<td>Passive-aggressive</td>
<td>24.53 (7.95)</td>
<td>26.43 (7.42)</td>
<td>15.89 (8.97)</td>
<td>8.08</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Note: 1Standard deviations in parentheses; 2not in DSM-IV.
(mean difference = 0.95, SE = 0.43, p < .03), borderline (mean difference = 1.09, SE = 0.40, p < .01), histrionic (mean difference = 0.92, SE = 0.38, p < .02), narcissistic (mean difference = 1.07, SE = 0.46, p < .02), avoidant (mean difference = 0.99, SE = 0.36, p < .01), and passive-aggressive (mean difference = 1.10, SE = 0.34, p < .002). Men with ASPD only do hold more antisocial beliefs than men with no personality disorder; however, they also hold significantly more dysfunctional beliefs on most other scales. Hence, holding more antisocial beliefs is not a distinguishing feature.

A discriminant function analysis was carried out (Field, 2005). This procedure specifies which combination of items discriminates best between groups. Two discriminant functions were calculated, but only the first proved significant ($\Lambda = 0.35, \chi^2[20, n = 49] = 44.14, p < .001$). This showed that only the first function was successful at differentiating the three groups, accounting for 87.5% of the variance. This can be seen graphically on Figure 1, where significant distance occurs between groups on Function 1 but little separates these same groupings on Function 2.

The contributions of the PBQ scales in relation to Function 1 are shown in Table 3. The avoidant and paranoid subscales of the PBQ showed the strongest relationship with the first discriminant function. The means on the discriminant function are consistent with this interpretation. The ASPD plus other PD group had the highest mean score on this dimension (+1.31), and the ASPD only group had the next highest score (+0.45). The first function discriminates the no PD group from the other two groups (−1.44). On the basis of this function, group membership was predicted successfully in 69%
of the cases in this sample. A kappa coefficient of 0.54 suggests a moderately accurate prediction when taking into consideration chance agreement.

**Discussion**

Unlike findings for other personality disorders (Beck et al., 2001), antisocial beliefs as measured by the PDQ do not discriminate men with antisocial personality disorder from those without. Men with antisocial personality disorder do not score highest on PBQ antisocial beliefs, and, although they score higher than those with no disorder on the PBQ antisocial scale, they also score higher on most other personality disorder belief scales. The PBQ antisocial scale does not predict antisocial personality disorder in discriminant analysis, but the PBQ avoidant and paranoid scales do.

Beck et al. (1990) base their PBQ antisocial scale on concepts of low moral and psychosocial development. Looking at the content of these scales, the antisocial items focus upon selfishness and ‘looking after number one’, regardless of the impact on others and how others see one. In this study, these beliefs do not discriminate men with antisocial personality disorder. The beliefs that do discriminate are avoidant and paranoid. The PBQ avoidant scale items focus upon fear of criticism, failure, intimacy, and rejection. The PBQ paranoid scale items cover expectations that others are untrustworthy, duplicitous, and intend to exploit and harm.

The beliefs of this group of men with antisocial personality disorder may be interpreted according to Blackburn’s (1996) classification. In a group of legally detained mentally disordered offenders, Blackburn (1996) identified two types of ‘psychopath’: the primary psychopath with narcissistic and antisocial traits, and the secondary psychopath, a passive-aggressive-avoidant-paranoid type. Although Blackburn issued a caution about generalising findings from his mentally disordered sample to other populations, he also admitted that his typologies were likely to be found

<table>
<thead>
<tr>
<th>PBQ scale</th>
<th>Correlation with discriminant function</th>
<th>b</th>
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</thead>
<tbody>
<tr>
<td>Paranoid</td>
<td>.54</td>
<td>+1.06</td>
</tr>
<tr>
<td>Schizoid</td>
<td>.41</td>
<td>−0.46</td>
</tr>
<tr>
<td>Antisocial</td>
<td>.46</td>
<td>−0.18</td>
</tr>
<tr>
<td>Borderline</td>
<td>.53</td>
<td>−0.74</td>
</tr>
<tr>
<td>Histrionic</td>
<td>.47</td>
<td>+0.47</td>
</tr>
<tr>
<td>Narcissistic</td>
<td>.35</td>
<td>+0.20</td>
</tr>
<tr>
<td>Avoidant</td>
<td>.56</td>
<td>+1.36</td>
</tr>
<tr>
<td>Dependent</td>
<td>.10</td>
<td>−0.99</td>
</tr>
<tr>
<td>Obsessive-compulsive</td>
<td>.07</td>
<td>−0.75</td>
</tr>
<tr>
<td>Passive-aggressive</td>
<td>.49</td>
<td>+0.37</td>
</tr>
</tbody>
</table>
in other groups. In respect of personality disorder beliefs, it appears to be
the second group that we have identified here.

Blackburn (in press) suggests that, while both groups of psychopaths
may be behaviourally alike, there are differences in self-concept that may
be important to understanding antisocial behaviour and aggression.
Primary psychopaths respond aggressively when their perceived high
status is threatened, whereas secondary psychopaths, who are typified by
very low levels of self-esteem, respond aggressively to threat because of
anxiety and emotional vulnerability. These variations have relevance for
cognitive theory and therapy with different subtypes of psychopath.

These interpretations should be moderated in light of the study’s
limitations. First, it is important to note that the PBQ is not a diagnostic
instrument; it was not designed to discriminate between those with and those
without specific personality disorders. Second, the sample size was small,
with only 17 prisoners with ASPD only and 18 with no personality disorder.
Among male prisoners, 65% have at least one personality disorder (Fazel &
Danesh, 2002), and almost half of people with personality disorder have
more than one co-occurring diagnosis (Coid, Yang, Tyrer, Roberts, &
Ullrich, 2006). Therefore it is difficult to isolate ‘pure’ groups without
interviewing very large numbers of prisoners. Additional Axis I disorders
may further complicate matters, but these were not identified here. Finally,
the PBQ is a self-report instrument; responses may be influenced by the
demands of the situation. In this case, respondents may have avoided
admitting antisocial beliefs. Furthermore, the circumstances of being in
prison may have affected participants’ perceptions of the world, if only
temporarily. Thus, heightened avoidant and paranoid beliefs may be
appropriate to the situation and may be a useful survival strategy.

Caveats notwithstanding, these findings have implications for the
assessment of beliefs and cognitive therapy with people with antisocial
personality disorder.

First, it is important to conduct a thorough assessment and not assume
that all people with antisocial personality disorder will hold selfish,
narcissistic beliefs. These may be common among primary psychopaths,
but these are relatively rare among offenders. In a sample of adult male
prisoners in England and Wales, 4.5% scored 30 or over on Hare’s (2003)
Psychopathy Checklist-Revised (PCL-R), and 13% scored 25 or more, the
former being the traditional cut-off and the latter being the statistically
derived European cut-off for psychopathy (Hare, Clark, Grann, &
Thornton, 2000). By contrast, in a review of prison surveys that assessed
personality disorder, 47% men and 21% of women were diagnosed as
having antisocial personality disorder (Fazel & Danesh, 2002).

Second, cognitive therapy for people with antisocial personality disorder
should attend to avoidant and paranoid beliefs. It may be that enhancing
self-esteem, learning to tolerate negative emotions as a normal part of life,
and improving relationship skills could reduce both paranoid beliefs and belligerence-hostility. That is, having the confidence to relate well should improve relationships and consequently reduce fear and suspicion. Social problem-solving therapy addresses some of these issues and there is some evidence of its success with people with personality disorders (Huband, McMurran, Evans, & Duggan, 2007; McMurran, Fyffe, McCarthy, Duggan, & Latham, 2001).

Finally, further investigation of personality disorder beliefs and psychopathy is required. It may be that the PBQ antisocial scale actually identifies those with cold and callous traits, as measured by Factor 1 of the PCL-R, rather than those characterised by impulsive and irresponsible behaviours, as measured by Factor 2 of the PCL-R. These maladaptive beliefs could be addressed as one part of therapy for primary psychopaths. A scale identifying the maladaptive beliefs of people with ASPD or secondary psychopathy needs to be constructed.

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References


