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Prevalence and childhood antecedents of Depersonalization Syndrome in a UK Birth Cohort

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Abstract

Purpose—Depersonalization syndrome is characterised by a sense of unreality about the self (depersonalization: DP) and/or the outside world (derealization: DR). Prevalence estimates vary widely. Little is known about childhood antecedents of the disorder although emotional abuse is thought to play a role.

Methods—Longitudinal data from 3275 participants of a UK population based birth cohort (the MRC National Survey of Health and Development) were used to: i) assess the prevalence of DP syndrome at age 36, measured by the Present State Examination (PSE); and ii) examine the effects of a range of socio-demographic, childhood adversity and emotional responses as potential risk factors for DP.

Results—Thirty three survey members were classified with DP, yielding a prevalence of 0.95% (95% confidence intervals (CI) 0.56 to 1.34). There were no associations with socioeconomic status, parental death or divorce; self reported accidents, childhood depression, tendency to daydream or reactions to criticism. However, teacher-estimated childhood anxiety was a strong independent predictor of adult depersonalization, and there were strong cross-sectional relationships between DP and anxiety and depression caseness.

Conclusions—To our knowledge this is the first study assessing nationwide prevalence of the DP syndrome and uses longitudinal data to explore childhood risk factors for adult DP. The prevalence of adult DP was slightly lower than reported by other surveys. The study found that childhood anxiety was the only significant predictor of the adult DP syndrome, supporting the view that depersonalisation disorder forms part of the spectrum of responses to anxiety.

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Introduction

The depersonalization syndrome is comprised of symptoms of depersonalization and/or derealization. Depersonalization (DP) is characterized by a change in the person's perception of themselves so that parts, or all, of their body feels unreal or does not belong to them. This may be accompanied by the feeling of being detached from the world and there may be a loss of a sense of agency, so the person has a sense of watching themselves from a distance. With derealization (DR) there is a similar sense of unreality about other people and the outside world. The world may feel artificial, two dimensional, lacking in significance and other people may appear like actors or robots. However, individuals with depersonalization syndrome are not delusional, because they understand that these experiences are subjective and do not indicate an actual change in themselves or the world. As a transient experience the symptoms are not necessarily unpleasant, but when persistent the syndrome can cause considerable distress to sufferers and reduction in social functioning[1].

DP and DR are relatively common symptoms of a range of other psychiatric conditions, such as depression, schizophrenia, post-traumatic stress disorder (PTSD) and personality disorders[2]. The highest rates of symptoms of DP/DR are reported in those with panic disorder; and co-morbidity with other anxiety disorders is common[3]. As well as appearing as a symptom of other disorders, pathological DP can also present on its own. Depersonalization disorder is classified by the ICD-10[4] (as the "Depersonalization-derealization syndrome") as a miscellaneous neurotic disorder and by the DSM-IV[5] as a dissociative disorder.

The basic epidemiology of DP has only begun to be studied (see reviews[3,2]). It is thought to be a common phenomenon, especially in relation to stress or fatigue, with a lifetime prevalence estimated to be as high as 74% for mild, transient experiences. Estimates of the prevalence of clinically significant DP in the general population have varied due to the use of different measures and prevalence periods. Rates have been found to be between 0.5-2% in UK and recent US samples[6-8], 1.9% in Germany,[9] 2.4% in Canada[10] and up to 23.4% in a US telephone survey[11]. Another study suggests that DP is more common in Western cultures than elsewhere [12].

U.S. and U.K. samples of those experiencing clinically significant DP symptoms [1,13] have found DP to have an approximately an equal gender split, a common onset in late adolescence or early adulthood, and often to have a chronic and persistent prognosis. Educational attainment in clinical populations with DP may be higher than would be expected in the general population; Simeon et al.(1997)[13] found 57% of their sample were educated to graduate or postgraduate level, and Baker *et al.* (2003)[1] reported 54% having had some form of higher education. Data on estimates of socio-economic status in those with DP syndrome have not been reported previously but may echo the findings for education.

The existing literature on possible risk factors for DP is limited, although a number of possibilities have been indicated. Neurological conditions, such as epilepsy or migraine, may account for a small proportion of cases[14,15]. Many patients relate the onset of DP to substance misuse, such as cannabis[16] or 'ecstasy'[17]. Depersonalization has also been

reported as a response to traumatic events such as road traffic accidents[18,19]. The other important factor cited as relevant is childhood experiences of abuse and trauma and this is often linked with the view that DP is best considered as a dissociative disorder. There is now a considerable body of evidence which has linked childhood trauma with elevated levels of general dissociation[20,21] and this has influenced psychological theories about the causes of DP. Theories from a psychoanalytic perspective view DP as a defence mechanism[22]. For example, Schilder (1914)[23] hypothesized that DP might have a self-protective function, which allows the person to escape mentally from the full experience of emotional or physical abuse. However, recent studies have failed to find evidence for direct links between DP and childhood separation or loss, physical or sexual abuse, neglect or the witnessing of violence[24,25], though a strong cross-sectional association between DP and personality disorders was found in one recent US survey [8]. Emotional abuse in childhood (e.g. parental criticism, insults, shouting, blaming and scapegoating) was found to be a significant predictor of DP in clinical[25] and non-clinical[24] samples however. Studies of DP in children and adolescents have noted day-dreaming, low mood, low self-esteem, shyness/social anxiety and general anxiety to be commonly associated[26-28].

However, many of those experiencing clinically significant DP as adults report neither significant histories of childhood trauma nor significant emotional abuse. Instead their DP appears more related to a history of chronic anxiety with panic attacks, social phobia and obsessive-compulsive disorder[29]. In Baker et al's 2003 survey of 204 clinical cases only 14% reported a history of childhood physical or sexual abuse, but 50% reported a previous psychiatric diagnosis of which the most common was depression and 73% reported experiencing current panic attacks[1]. A study of patients with a diagnosis of panic attacks comparing those with DP/DR symptoms during panic to those without, found no differences in the reporting of childhood trauma. It appears that there may at least be forms of DP syndrome which are linked with anxiety rather than childhood trauma. This concept fits with the 'Phobic anxiety-depersonalisation syndrome' proposed by Roth in 1960[30] and the cognitive-behavioural conceptualisation of depersonalisation disorder by Hunter and colleagues (2003)[31].

Many of the studies purporting to provide data on the epidemiology and aetiology of DP suffer from methodological problems including non-disclosure of denominators, non-reporting of response rates, the use of convenience samples, reliance on retrospective reporting of childhood and poor validity of the questionnaires used[3]. In this study we assessed the prevalence of DP in a large representative sample of the UK population. We aimed to provide an unbiased estimate of the prevalence of the disorder and to investigate any association between DP and socio-demographic factors, indicators of childhood difficulties, emotional responses in childhood and later mental health problems.

Method

Participants

The National Survey of Health and Development aimed to collect information from all single births to married women with husbands in non-manual and agricultural employment and one in four of all comparable births to women with husbands in manual employment in England, Scotland and Wales from one week in March 1946 (N=5362). Baseline data about these births were recorded, and participants have been followed up through childhood and adulthood on a total of 21 occasions so far[32].

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Measures and Procedures

Several factors which previous research has indicated may have an association with the later development of DP syndrome were selected for inclusion in the current study. All of the tests carried out are reported. Odds ratios were calculated for each of these potential risk factors and logistic regression was used to build a multivariable model incorporating them all. This model was simplified by a reverse-stepwise method by which the factors least associated with the outcome were removed one at a time. At each step the explanatory power of each derived model was formally compared with the original 'saturated' model by a Wald test, so degradation of the model by over-removal of factors could be avoided. The stepwise removal process was continued until no further removals could be made without degrading the model or removing significant independent predictors of the outcome..

Socio-demographic factors

Socio-economic status in childhood was established from questions asked of their parents in 1950 about the occupation of the head of the household. The occupations were graded into six categories from 'professional' to 'unskilled' in accordance with the British Classification of Occupations 1970[33]. Where data for socio-economic status from 1950 were missing, the answer to the same question asked in 1957, categorized in the same way, was used. This variable was dichotomised between social classes one and two and the remainder. The highest educational qualification achieved by age 26 years was classified according to the Burnham scale[34]. Educational level was dichotomised to divide those who stayed in education up to or beyond the age of 18 from those who did not.

Childhood adversity

Information from the first 24 years of life was collated into variables reflecting the break-up of the marriage of the parents, and whether a parent died when the participant was under that age. Non-fatal accident data were collected from all 14 data collections undertaken when the participants were between the ages of 14 and 24 inclusive. Care was taken in the data collection phase to eliminate over- or under-reporting of accidents by telling each participant of the details of their most recent accident for which the survey had information, and asking if there had been any accidents since then. The number of accidents to age 24 was dichotomised at the median, the division being between two and three accidents.

Childhood emotional responses

When the participants were 13 years old, their class teachers were asked questions about the participants' mood, tendency to be anxious and tendency to daydream. Each question had three possible answers. The variables were all dichotomised, which most nearly divided the population into two equal-sized groups. The question about mood asked whether the participant was 'unusually happy and contented', 'generally cheerful and in good humour', or 'usually gloomy and sad', with the first two options scoring as 0 and the last 1 as one. The question about anxiety could be answered 'not at all anxious', 'somewhat anxious' or 'very anxious', with the first option being categorised as 0 and the following two as 1. Similarly, the daydreaming question; 'seldom or never daydreams in class', 'sometimes...', and 'frequently...', with the first option scoring as 0 and the following two as 1. At age 15, teachers were asked about the participants' reaction to criticism, with possible responses of: 'normal attitude to criticism', 'unduly resentful of criticism', 'unduly miserable or worried when criticised', with the first option scoring as 0 and the following two as 1.

Present State Examination (PSE)

In 1982, when the participants were aged 36, they were asked to undergo a shortened version of the Present State Examination (PSE) [35-37], a validated, reliable, interviewer

rated, diagnostic psychiatric interview which includes questions on DP and DR. Details of nurse interviewer recruitment and training, along with the reliability and validity of this instrument in the NSHD were reported by Rodgers and Mann (1986) [38].

The questions on DP and DR were “In the last month have you yourself felt unreal, that you were not a person, not in the living world?” (DP) and “Have you recently had the feeling that the things around you were unreal?” (DR). There were additional notes for the interviewers to use to clarify these concepts if necessary:

For DR this was “…as though everything was an imitation of reality, like a stage set, with people acting instead of being themselves?”. DR symptoms were rated as follows: 0=Not present; 1=moderately intense form of symptom definitely occurring during the last month, and persisted for hours at a time. Things appear colourless and artificial, people appear lifeless and seem to act rather than being themselves;.2=intense symptom occurred the last month and persisted for hours at a time. e.g. The whole world appears like a gigantic stage set, with imitation instead of real objects and puppets instead of people..

For DP this was “…that you were outside yourself, looking at yourself from outside?”, “….that you look unreal in the mirror?”, “… that some part of your body did not belong to you?”. DP symptoms were rated as follows, 0=Not present; 1=Moderately intense form of symptom definitely occurring during the past month and persisted for hours at a time; 2=Intense form of symptoms definitely occurred during the last month and persisted for hours at a time. Subject feels he or she is dead, not a person, living in a parallel existence, a hollow shell, or even that he or she does not exist.

The PSE was also used to generate case-level depression and anxiety data for each participant [39].

Results

The number of people successfully traced by the Survey in 1982 was 3322. Of these, 3275 answered the questions about DP. The characteristics of participants and non-participants are compared in Table 1. The 324 participants who died before the 1982 sweep were excluded. Participants (response-rate = 65%) were more likely to be female, more likely to have experienced parental divorce or the death of a parent before they were 24, and were more likely to have had more than two accidents up to age 24. They were less likely to have been rated as a daydreamer or anxious by their teachers at the age of 13.

Table 2 shows the frequencies of answers to the questions about DP and DR. For the analysis below, having been rated ‘Moderate’ or ‘Intense’ to either question (shaded area) is considered positive for the syndrome of DP (n=34). Three individuals (9%) scored ‘intense’ for either symptom, the remainder being rated as ‘moderate’ on one or both symptoms.

Table 3 shows the relationship between DP syndrome and potential risk factors of sex, socio-economic status in childhood, educational attainment, divorce/bereavement of parent and self-reported accidents up to age 24, teachers’ rating of anxiety, mood, tendency to daydream and dislike of criticism, and PSE case level for depression and anxiety. Female sex, childhood anxiety, PSE case level anxiety and depression in adulthood were associated with DP.

Table 4 shows multivariable logistic regression models predicting DP from the potential exposures and covariates. Model 1 uses all eleven of these factors to predict DP and has similar findings to the univariable analyses in Table 3 except the effect of sex is rendered non-significant. The stepwise process of removing factors from one at a time and testing for

degradation of the model resulted in Models 2-8. The final model (Model 8) contained only Anxiety aged 13 and PSE depression and anxiety and could not be further simplified without degradation as detected by a Wald Test. Models 2-7 are not shown in the table.

Discussion

To the authors' knowledge this is the first country-wide prevalence study of DP syndrome. The most representative and reliable method of measuring prevalence rates is to use unselected, population-based community surveys that employ standardized instruments. In this study the sample size is large, the measure is validated, and the study well executed. The prevalence of depersonalization in this sample was measured as 0.95% with 95% confidence intervals of 0.56% to 1.34%, slightly lower than rates suggested by most other studies, though many of the differences are compatible with sampling variation. It may be of note that only three individuals in our sample were rated as 'intense' on either the DP or DR item. This relative lack of variation within the syndrome may reflect the nature of the symptoms or properties of the assessment tool.

Some previous studies have employed similar procedures to those presented here. The closest is by Bebbington et al (1981) [6] which also used the PSE to assess psychiatric prevalence rates in a sample drawn from the electoral register of an inner London borough. In the first stage, 800 interviews were completed using a short form of the PSE (40 items), as well as a questionnaire detailing socio-economic, demographic and upbringing factors. The prevalence of DP was found to be 1.2% (95% CI. 0.35-3.3). A second study by Bebbington and colleagues (1997) [7] which used similar methodology to the first, but with a different semi-structured psychiatric interview measure (Schedules for Clinical Assessment in Neuropsychiatry: SCAN [40]), found the prevalence of DP over the past month to be 1.7% (95% CI 0.69-3.5). In addition to the London studies, there are one European and three North American studies. Michal (2009) [9] found a rate of 1.9% of clinically significant DP in a representative sample of the German population who were assessed with the short version of the Cambridge Depersonalisation scale [41]. Ross (1991) [42] used a random stratified sample of urban adults in Canada. They found the current prevalence of DP to be 2.4%, higher than both of the London studies. Prevalence was measured using four items from the Dissociative Disorders Interview Schedule [43]. A more recent study in the USA of a random sample of adults in a rural community surveyed by telephone found prevalence for DP syndrome in the past year to be 23.4% [11], measured by giving participants a description of the DSM-IV criteria. Also in the US, Johnson and colleagues carried out a survey using the SCID-D [44] on a representative sample of 658 people in their early 30's in New York State and found a prevalence of 0.8% for DP[8].

The variation in the reported rates between studies is likely to be attributable to differences in the measures used to assess DP symptoms, the period for which prevalence is assessed, the age of the participants, and sampling variation. In this study the prevalence was assessed using a standardised measure, by interview, for the previous month. One advantage of our survey over previous studies is that it includes a mixture of both rural and urban environments. However, all participants were aged 36 so we cannot contribute to knowledge of the prevalence of DP across the life span.

The longitudinal design in this study allowed for the analysis of a range of childhood factors which might predict DP syndrome in adulthood. Several factors previously associated with DP were examined. There was no support for an association with higher socio-economic status, which fits with the results from clinical samples. This study did not detect a difference between those with and without DP syndrome in terms of educational attainment, which would have been predicted from these clinical surveys [1,13]. This suggests

individuals reaching specialist clinics reflect a biased sample. No links were found between early adverse experiences of loss of a parent/family break-up through divorce, self reported accidents, nor teacher-rated low mood or negative reactions to criticism during childhood. Only teacher-rated anxiety at age 13 was found to be a significant independent predictor: Female sex was also associated with DP on univariable analysis but this effect was not robust to correction for other factors, and was also rendered non-significant if the estimate was adjusted only for childhood factors (not shown).

These results are evidence for developmental links between childhood anxiety and adult DP syndrome. The DP syndrome may form part of the spectrum of anxiety disorders [31], though the lack of a detected association between our deprivation measures and DP should not be interpreted to mean these effects are certainly absent (see below).

The findings from this study and those by Simeon *et al.* (2001; 2009) [45,25] and Michal *et al.* (2007) [24] who found a relationship between childhood emotional abuse and DP symptomatology but no associations between childhood physical/sexual abuse suggest that DP may have a different aetiology from other types of dissociative disorders, where links with childhood trauma are somewhat more established. Michal et al (2009) [9] found a significant correlation between DP and retrospective reports of parental 'rejection and punishment' and 'control and overprotection'. It is possible that the mechanism by which these negative childhood experiences manifest themselves into DP symptoms is through an increase in childhood anxiety, although further studies would be required to establish the developmental pathways. Moreover an association between clinically significant DP and parental divorce before participants reached age 18 was found but this was not replicated here.

The other factors that were related to adult DP syndrome were adult case-level depression and anxiety as measured on the PSE. This is consistent with previous case series which found a relationship between severity scores of DP symptoms and symptoms of anxiety and depression [6,46,9].

Our study has several limitations. Inevitably in a longitudinal cohort study, there is risk of retention bias and in this respect we did find differences between the participants and non-participants on seven out of ten measures. However, six of these differences between the successfully followed up and other people were not associated with DP, suggesting little effect on our estimates. The seventh measure was PSE caseness, which has strong associations with DP and successful follow up. Nevertheless the estimate of association between DP and other mental disorders that we have given in our study is consistent with the other literature [6] and the total number of individuals for whom there were PSE data but who could not be included in the study was very small (5 individuals). Examinations of the whole dataset have concluded that there was some retention bias, largely related to measures of childhood deprivation [47,48], but this is unlikely to have seriously affected our findings because of the overall good retention rate of the survey and the complex and differential relationships between retention and the factors under study required to generate our findings spuriously.

There is a risk of true associations remaining undetected: type 2 error. This is important in the present study because the lack of detected associations between the variables reflecting measures of childhood adversity and educational attainment with later DP contradicts an aetiological theory [24] and some previous uncontrolled work from clinical samples [1,13].

For the questions concerning childhood trauma, the examinations we carried out may have failed to detect a true association because of lack of power or poor validity of the measures. The measures are thought likely to reflect the true situation of the participants, but the

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simple questions asked may fail to capture the subtleties of disturbed attachment and other relevant problems in the life of a child. Given the nature of the design of the survey, where children were questioned and retention of participants was of utmost importance, a great deal of sensitivity was needed regarding the intrusiveness of the questions asked. Participants therefore were not asked directly about experiences of childhood physical and sexual abuse. Using EpiInfo (free statistical software released by the (US) Center for Disease Control which is commonly used for power calculations - http://www.cdc.gov/epiinfo) we assessed the probability of detecting a variety of possible ORs for the effect of parental divorce or death on probability of DP. There was 50% power to detect an OR of 2, and 90% power to detect an OR of 3, so a sizeable true effect is likely to have been detected. The estimates of effect were close to unity for both of the measures of deprivation.

We examined the possibility of parental death and divorce being heterogenous in their effects on DP. In a weakened *post-hoc* stratification analysis neither factor had a significant relationship with DP (and the interaction term was non-significant), but it may be of note that none of the children whose parents had divorced went on to report DP.

The present study did not detect the association between educational level and depersonalisation as found in clinical samples. Such an association may exist though: Lack of statistical power can cause a true association to be missed. Using EpiInfo, as above, we calculated there is 75% power to detect an OR of 3 but only 27% power to detect an OR of 2, thus even a clinically significant effect may not have been detected.

The questions on childhood emotional reactions were limited to the reports from teachers, were not corroborated by self-reports and/or reports by parents, and were not part of a validated instrument. However, the use of crude measures is likely to lead to random misclassification and an underestimate of the true effect so our detection of an effect suggests the true effect may be stronger. Finally, teacher ratings may be less subject to biases than parental report and/or self report, and answers to these and similar questions have been found to be predictive of many outcomes in adult life [49-52].

This survey has collected data from a large representative sample of the population of Britain, but there are only data on the prevalence of DP at the age of 36 and therefore it is not possible to determine for how long those reporting DP/DR had experienced these symptoms. The current study did not detect any associations between the other hypothesised risk factors and DP in adulthood.

The study presented here provides the prevalence of DP syndrome over the past month in a representative nationwide sample of the UK population as 0.95% (95% CI 0.56 to 1.34). Out of a range of possible childhood antecedents for adult DP syndrome only childhood anxiety was shown to be an independent predictor. We detected no links with measures of childhood trauma, unlike other types of severe adult dissociative disorders. While our study lacked the statistical power to reject these potential associations outright, this study indicates further exploration of the theoretical and clinical associations between DP syndrome and anxiety spectrum disorders is warranted.

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Table 1

Comparison of participants and non-participants.

	Non-participants	Participants	Total	Statistical test
Total	**1763 (35%)**	**3275 (65%)**	**5038 (100)**	
Socio-demographic factors				
Female	776 (44%)	1641 (50%)	2417 (48%)	**χ^2=17 df=1 P<0.0005**
Parental SES 1 or 2	307 (17%)	686 (21%)	993 (20%)	**χ^2=9.0 df=1 P=0.003**
Educated >=age 18[1]	372 (30%)	1067 (34%)	1439 (33%)	**χ^2=7.8 df=1 P=0.005**
Childhood adversity				
Parental death or divorce	323 (18%)	857 (26%)	1180 (23%)	**χ^2=39 df=1 P<0.0005**
>2 Accidents to age 24[2]	734 (42%)	1782 (54%)	2516 (50%)	**χ^2=75 df=1 P<0.0005**
Childhood emotional responses				
Daydreamer age 13[3]	659 (57%)	1459 (51%)	2118 (53%)	**χ^2=11 df=1 P=0.001**
Anxious age 13[4]	553 (48%)	1272 (45%)	1825 (46%)	χ^2=2.2 df=1 P=0.13
Sad age 13[5]	46 (4%)	86 (3%)	132 (3%)	χ^2=2.5 df=1 P=0.12
Dislikes criticism at 15[6]	139 (12%)	329 (12%)	468 (12%)	χ^2=0.1 df=1 P=0.75
Adult psychopathology				
PSE depression aged 36[7]	5 (28%)	199 (6%)	204 (6%)	**χ^2=14 df=1 P<0.0005**
PSE anxiety aged 36[8]				

[1] Note: Denominators are 4378

[2] 5037

[3] 4016

[4] 4007

[5] 4000

[6] 3965

[7] 3293

[8] 3293 respectively.

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Table 2

Detail of the Depersonalisation (DP) syndrome questions asked of the participants.

		Have you felt unreal, that you were not a person, not in the living world? (DP)				
		Not present	**Moderate**	**Intense**	**Missing**	**Total**
Have you felt that things around you were unreal? (DR)	Not present	3246	*7*	*0*	6	**3259**
	Moderate	*13*	*10*	*1*	1	**25**
	Intense	*0*	*1*	*0*	0	**1**
	Missing	*7*	*0*	*1* *	1745	**1753**
	Total	**3266**	**18**	**2**	**1752**	**5038**

Note 1: The shaded area represents those participants who scored ‘moderate’ or ‘intense’ on either of the depersonalization (DP) / derealisation (DR) questions and were considered to have DP syndrome for the purposes of this study.

Note 2: This table represents all the participants except those who had died before the interviews at age 36.

* This person did not have PSE data so was not included in the remainder of the study.

Table 3

Comparison of participants who were rated as suffering with depersonalization (DP) with those who were not.

	No DP [*n* (%)]	DP[*n* (%)]	Total	Prev (%(95% CI)) [a]
Total	**3242 (99%)**	**33 (1%)**	**3275**	**0.95 (0.56 to 1.34)**
	No DP[*n* (%)]	**DP[*n* (%)]**	**Total[*n* (%)]**	**OR (95% CI)[b]**
Socio-demographic factors				
Female	1620 (50%)	21 (64%)	1641 (50%)	**2.44 (1.03 to 5.83)**
Parental SES 1 or 2	677 (21%)	9 (27%)	686 (21%)	0.86 (0.38 to 1.93)
Educated >= age 18[c]	1052 (34%)	15 (45%)	1067 (34%)	0.91 (0.41 to 2.01)
Childhood adversity				
Parental death or divorce	848 (26%)	9 (27%)	857 (26%)	1.13 (0.45 to 2.82)
>2 Accidents up to age 24	1765 (54%)	17 (52%)	1782 (54%)	0.86 (0.38 to 1.97)
Childhood emotional responses				
Daydreams aged 13[d]	1443 (51%)	16 (59%)	1459 (51%)	2.39 (0.95 to 6.03)
Anxious aged 13[e]	1253 (44%)	19 (73%)	1272 (45%)	**2.97 (1.09 to 8.12)**
Sad aged 13[f]	86 (3%)	0 (0%)	86 (3%)	χ^2=0.9 *P*=0.35[h]
Dislikes criticism age 15[g]	326 (12%)	3 (12%)	329 (12%)	0.84 (0.19 to 3.69)
Adult psychopathology				
PSE depression case aged 36	194 (6%)	14 (42%)	208 (6%)	**7.45 (3.17 to 17.5)**
PSE anxiety case aged 36	130 (4%)	5 (15%)	135 (4%)	**5.73 (1.89 to 17.4)**

Odds ratios in bold indicate $P<0.05$

PSE Present State Examination, DP Depersonalization Syndrome

[a] Weighted prevalence estimate

[b] analyses, taking into account the socio-economically stratified sampling strategy

[c] Denominators are reduced by <15% with covariates: 3,127

[d] 2,856

[e] 2,849

[f] 2,849

[g] 2,812

[h] Where there was an empty cell and odds ratios could not be calculated, a χ^2 test was carried out instead

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Table 4

Statistical model building of predictors of depersonalization (DP) age 36.

	Odds Ratio (95% Confidence Interval)
Model 1:	
Female	1.81 (0.59 to 5.54)
SES 1 or 2 in childhood	0.49 (0.15 to 1.60)
Educated >= age 18	1.57 (0.51 to 4.82)
Parental death or divorce	1.22 (0.37 to 3.94)
>2 Accidents up to age 24	0.69 (0.26 to 1.82)
Daydreamed at age 13	1.67 (0.56 to 5.01)
Anxious at age 13	**3.86 (1.08 to 13.8)**
Sad at age 13	Empty cell
Dislikes criticism at age 15	0.63 (0.13 to 3.18)
PSE depression case aged 36	**7.95 (2.34 to 26.9)**
PSE anxiety case aged 36	**11.2 (2.82 to 44.8)**
N=2630 R^2=0.16	
Model 8:	
Anxious at age 13	**4.00 (1.20 to 13.4)**
PSE depression case aged 36	**8.92 (2.76 to 28.9)**
PSE anxiety case aged 36	**11.70 (3.27 to 41.8)**
N=2630 R^2=0.17	
Wald Test:	*χ^2=6.8 df=7 P=0.45*

Odds ratios in bold indicate $P<0.05$

PSE: Present State Examination