Childhood experience and health care use in adulthood

Nested case–control study

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Background Few studies have considered the role of childhood experiences in adult health care use.

Aims To examine the hypotheses that individuals frequently attending primary care report childhood adversities and illness exposures more commonly than the remainder of patients and that any association is independent of adult psychiatric disorder.

Method A nested case–control study was carried out in a single general practice in Manchester, UK. Fifty frequent attenders (randomly selected from adult patients in the top decile of consultation frequency) and fifty normal attenders (randomly selected from the remainder of adult patients) underwent a structured psychiatric interview and a detailed, semi-structured interview of childhood experience.

Results There was a strong association between frequent attendance and childhood experiences. Multivariate analysis suggested that reported childhood illness exposures and reports of childhood adversity were each associated independently with adult consultation behaviour, even after adjustment for adult psychiatric disorder.

Conclusions Interventions for high users of health care may need to address childhood experiences of illness and childhood adversities, as well as adult psychiatric disorder.

Declaration of interest None.

A small number of patients account for a disproportionately large amount of health care use (Gill & Sharpe, 1999). However, the reasons underlying utilisation behaviour are poorly understood. Studies have investigated the association between childhood experience and adult psychological symptoms (Mullen et al, 1988; Hill et al, 2001) but few have considered health care use in adulthood as an outcome measure. Two US surveys of women found that individuals who had experienced abuse or neglect as children had higher health care utilisation in adulthood (Walker et al, 1999; Newman et al, 2000). A large population-based cohort study in the UK found that parental ill health and childhood symptoms were associated with medically unexplained symptoms in adulthood (Hotopf et al, 1999). The current study aimed to investigate the relationship between childhood exposures and adult consultation behaviour in a general population sample using detailed interview measures of both early adversities and illness exposures. We hypothesised that individuals frequently attending primary care would report childhood adversities and childhood illness exposures more commonly than the remainder of patients. Additionally we hypothesised that any association would be independent of adult psychiatric disorder.

METHOD

Setting

The study was carried out at a single general practice in a suburb of Manchester in northern England. During the study period the practice had four full-time partners, just under 8000 patients and used an out-of-hours deputising service. Because over 95% of the UK population are registered with a general practitioner (who provides all their primary health care), our practice-based sample provided a convenient sampling frame for the local population.

Participants

The participants in this study were recruited from a cohort of 1328 adults aged 18–65 years who were selected from the general practice register by simple random sampling. The follow-up rate for this cohort was 90% (Macfarlane et al, 2000).

Consultation data were obtained from primary-care case records for a 5-year period (1995–1999). In the UK each individual has a set of primary-care case notes. These record medical care contacts and interventions and follow the patients even if they change general practices. We defined a consultation as an entry in the notes reporting face-to-face contact between a patient and a general practitioner, including surgery consultations and home visits (Heywood et al, 1998). This study was concerned with attendance at primary care only, although we did record the number of referrals to secondary care.

Patients who were in the top decile of consultation frequency were designated 'frequent attenders'. All others were designated 'normal attenders'. We decided to adopt a distributional approach to defining frequent attendance rather than selecting an arbitrary cut-off for the number of attendances. This was because baseline consultation rates (and hence cut-offs for frequent attendance) vary greatly between settings, but similar proportions of patients account for a similar proportion of workloads across settings (Neal et al, 1998). In addition, this definition of 'frequent attenders' has been used in a number of previous studies (Gill & Sharpe, 1999).

We selected a random sample of frequent attenders and a random sample of control participants from the normal attending group. We did not match participants with respect to age and gender. This was to ensure that as far as possible the frequent and normal attenders were representative of the base populations from which they were drawn, and to allow us to examine the influence of factors such as age and gender.

Sample size

No previous study has examined directly the association between childhood exposures and frequent attendance. The prevalence of childhood adversity in patients who consult with unexplained symptoms in primary care is in the region of 25% and the prevalence of childhood adversity in primary-care attenders generally is less

than 5% (Craig *et al*, 1993). Assuming a type 1 error of 5% (i.e. $\alpha=0.05$), 80% power (i.e. $1-\beta=0.2$) and a 1:1 case:control ratio, we calculated that we would need to recruit 50 frequent attenders and 50 control participants to be able to detect this difference.

Recruitment procedure

Samples of frequent attenders and normal attenders were selected randomly in blocks of ten individuals by an independent statistician. They were sent a letter from their general practitioner and then contacted by a member of the research team to arrange a time for interview. Interviews took place in the participants' own homes. A psychiatrically trained researcher (N.K.) carried out all interviews and was blind to consultation status. Recruitment continued until there were 50 participants in each group. Written informed consent was obtained for all participants prior to the start of the interview. The study received ethical approval from the local research ethics committee.

Measures

The first part of the interview recorded socio-demographic data and recent symptoms. Named chronic physical illnesses of greater than 12 months' duration were recorded according to ICD–10 criteria (World Health Organization, 1992) and were rated as present if they were also confirmed in the case notes. The computerised version 2.1 of the Schedules for Clinical Assessment in Neuropsychiatry (SCAN; World Health Organization, 2000) was used to establish the presence or absence of psychiatric disorder in adulthood.

The Childhood Experience of Care and Abuse (CECA) interview was used as a measure of childhood experience up to the age of 17 years (Bifulco *et al*, 1994). It is an investigator-based retrospective interview. Studies of sibling pairs have demonstrated the reliability and validity of the CECA interview and it has been used in a wide variety of community and clinical samples, including patients in primary care. It includes a number of sub-scales. The parental indifference scale is concerned with the amount of neglect or disinterest in the child's material and emotional care on the part of the parents. It has specific items on whether the child was fed and clothed properly and parental interest in everyday activities, school work and friendships. The antipathy scale measures the degree of dislike, criticism, hostility or coldness

shown to the child by each parent. It includes items relating favouritism and scapegoating in comparison with other siblings. The physical abuse scale identifies instances of violence by a household member towards the child, and distinguishes between the child being beaten, kicked, burnt, hit with implements or threatened with knives or other weapons. The sexual abuse scale deals with sexual contact before the age of 17 years (other than willing sexual contact in teenage years between non-related peers). It includes episodes of sexualised physical contact, touching of breasts or genitals, oral sex and sexual intercourse. The psychological abuse scale refers to instances when the subject was tormented by adults in the household by cruel and sadistic means in order to enforce submission.

All interviews were audiotaped. Before any final ratings were made the material was presented at consensus meetings with other trained interviewers who regularly used the CECA interview. They rated each relevant category of adversity according to predefined thresholds and were blind to the participants' consultation rate and mental state. All items were scored on a four-point scale reflecting the severity, frequency and context of the adverse exposure. Only if the exposure was rated on the top two points of the scale (marked or moderate) was it rated as being present.

For the purposes of this study, the interviewer also enquired about confiding relationships in childhood, defined as a person or persons the child could talk to on a regular basis about concerns or problems. The respondent was asked about childhood experiences of illness in the subject themselves or other family members. Specific items recorded details of death or serious illness in siblings, death or serious physical or psychiatric illness in parents and serious illnesses and hospitalisations in the participants themselves. Illness exposures were only rated as present if they were prolonged (>3 months off work or school), potentially life-threatening or resulted in hospitalisations of over 3 weeks' duration (Hotopf *et al*, 1999).

Statistical analysis

All analyses were carried out using SPSS version 10.1 (SPSS, 2000). Univariate statistics were used to examine the association between socio-demographic factors and consultation status in adulthood and

childhood exposures and consultation status in adulthood. A logistic regression analysis was then carried out to identify the childhood variables that were the best independent predictors of consultation status in adulthood, after adjusting for the presence of adult psychiatric disorder. Consultation status (frequent attender: yes/no) was the dependent variable. We entered adult psychiatric disorder into the model at the first step. Factors associated with consultation status in the univariate analysis ($P<0.01$) were entered into the model using a forward stepwise method.

RESULTS

Study sample

To recruit 50 frequent attenders and 50 normal attenders, we approached 110 subjects (overall participation rate 91%). Five frequent attenders refused and one had died. Three normal attenders refused and one had moved out of the Greater Manchester area. There were no significant differences between individuals who were interviewed and those who were not interviewed in terms of socio-demographic characteristics and consultation behaviour.

Overall, 62/100 participants (62%) were female and the median age (interquartile range) was 53.5 years (42–62); 74 were married, 98 were White British and two were South Asian. Thirty-six participants had a history of psychiatric disorder and nine had a history of alcohol misuse. A total of 26 participants had a history of chronic physical disorder in adulthood and 27 reported a serious illness during childhood.

Frequent attenders were defined as those in the top decile of consultation frequency over the whole study period. This gave a cut-off point of 35 consultations at primary care over 5 years or approximately seven consultations per year. Regarding the patterns of consultation, 24/50 (48%) frequent attenders consulted frequently in each time period throughout the study (1995–1999). Forty-two frequent attenders (84%) consulted frequently during the majority of the study period.

Association between socio-demographic and clinical variables and consultation status in adulthood

As expected, frequent attenders had a higher annual consultation rate at primary care (median consultation rate (interquartile

range): 9.2 (6.7–11.4) *v.* 2.7 (0.8–5.0), $P < 0.001$, Mann–Whitney *U* test). They also had a higher annual referral rate to specialist out-patient clinics (median referral rate (interquartile range): 0.8 (0–1.5) *v.* 0 (0–0.75), $P = 0.002$, Mann–Whitney *U* test). Frequent attenders were slightly older than the normal attenders, but this difference did not reach statistical significance in our sample (median age (interquartile range): 57.0 (48–63) *v.* 50.0 (41–60), $P = 0.1$, Mann–Whitney *U* test). The frequent attenders were more likely to be female (76% *v.* 48%, $P = 0.007$, χ^2 test) and to have a history of psychiatric disorder as diagnosed by structured interview (58% *v.* 14%, $P < 0.001$, χ^2 test). Mood disorder was the most common ICD–10 diagnosis among the frequent attenders (44%), followed by somatoform disorder (16%) and panic disorder (14%). A similar proportion of frequent attenders and normal attenders suffered from a chronic physical illness (28% *v.* 24%, $P = 0.82$, χ^2 test). The marital and employment status of the two groups were also similar.

Association between childhood exposures and consultation status in adulthood

Table 1 shows the prevalence of childhood illnesses and childhood adversities in frequent attenders and normal attenders. Frequent attenders reported higher rates of serious illness in themselves or their siblings. There was also an association between frequent attendance and maternal physical illness and paternal psychiatric illness. Frequent attenders reported higher rates of parental antipathy, indifference, neglect and abuse in childhood. They were also less likely to have had a confidant in childhood. There were no significant differences with respect to parental death, parental separation and social class in childhood.

Logistic regression model of consultation rates

In order to determine which childhood exposures were independently associated with adult consultation behaviour after

adjusting for adult psychiatric disorder, we carried out a logistic regression analysis. We entered adult psychiatric disorder into the model at the first step. Factors associated with consultation status in the univariate analysis ($P < 0.01$) were then entered into the model using a forward stepwise method. The final model is shown in Table 2 and demonstrates that abusive experiences in childhood, childhood neglect and childhood experience of illness (in the subjects themselves or their close family) were independently associated with frequent attendance in adulthood, even after adjusting for adult psychiatric disorder. The final model was able to classify correctly almost 90% of frequent attenders and normal attenders.

DISCUSSION

In our sample we found a strong association between frequent attendance and childhood experience of illness. There was also a strong association between frequent

Table I   Reported childhood illness exposures and childhood adversities in frequent attenders and normal attenders

Variable	Frequent attenders[1] (n=50)	Normal attenders[1] (n=50)	Odds ratio (95% CI)	*P* for difference between groups[2]
Illness exposures				
Serious illness during childhood	23 (46)	4 (8)	9.8 (3.1–31.3)	<0.001
Serious illness in sibling	11 (22)	1 (2)	13.8 (1.7–111.7)	0.004
Maternal physical illness	11 (22)	1 (2)	13.8 (1.7–111.4)	0.004
Paternal physical illness	9 (18)	3 (6)	3.4 (0.9–13.5)	0.12
Maternal psychiatric illness	9 (18)	4 (8)	2.5 (0.7–8.8)	0.23
Paternal psychiatric illness	10 (20)	0 (0)	∞[3]	0.001
Childhood adversities				
Maternal death	0 (0)	1 (2)	0	1.0
Paternal death	7 (14)	5 (10)	1.5 (0.4–5.0)	0.76
Maternal separation (>12 months)	4 (8)	1 (2)	5.4 (0.6–48.4)	0.20
Paternal separation (>12 months)	13 (26)	12 (24)	1.2 (0.5–3.0)	0.82
Social class IV or V in childhood	16 (32)	11 (22)	1.7 (0.8–3.7)	0.37
No confiding relationship as child	24 (48)	13 (26)	2.6 (1.1–6.1)	0.04
Maternal antipathy	11 (22)	0 (0)	∞[3]	<0.001
Paternal antipathy	8 (16)	1 (2)	9.3 (1.1–77.7)	0.03
Maternal indifference/neglect	6 (12)	0 (0)	∞[3]	0.03
Paternal indifference/neglect	15 (30)	3 (6)	6.7 (1.8–25.0)	0.002
Physical abuse	12 (24)	0 (0)	∞[3]	<0.001
Sexual abuse	4 (8)	0 (0)	∞[3]	0.1
Psychological abuse	2 (4)	0 (0)	∞[3]	0.49
Any abuse	14 (28)	0 (0)	∞[3]	<0.001

1. Values are numbers (%) of individuals except where stated otherwise.
2. Using the χ^2 test for categorical variables.
3. Zero values in some cells.

Table 2 Forward stepwise logistic regression model for consultation status, with adjustment for adult psychiatric disorder[1]

Step	Variable entered	χ^2 for improvement	Significance	Percentage of cases correctly classified	Adjusted odds ratio (95% CI)
1	Adult psychiatric disorder	22.2	<0.0001	72	8.5 (3.2–22.5)
2	Any abuse in childhood	18.7	<0.0001	78	∞[2]
3	Maternal physical illness	13.7	0.0002	82	24.4 (2.8–219.2)
4	Serious illness during childhood	8.3	0.004	83	7.4 (1.8–30.7)
5	Paternal indifference/neglect	8.8	0.003	85	11.4 (2.1–62.3)
6	Serious illness in sibling	7.4	0.006	86	22.9 (1.7–300.5)
7	Paternal psychiatric illness	9.4	0.002	88	∞[2]
8	Gender	4.3	0.04	89	0.19 (0.03–1.0)

1. The dependent variable is a dichotomous one (frequent attenders/normal attenders). Psychiatric disorder has been entered into the model at step 1. The model shows the degree and significance of improvement at each step, the proportion of frequent attenders and normal attenders correctly classified by the model and the adjusted odds ratios for the association between consultation status and each variable.
2. Zero values in some cells.

attendance and reported childhood adversity. Multivariate analysis suggested that reports of childhood illness exposures and childhood adversity were each associated independently with adult consultation behaviour, even after adjustment for adult psychiatric disorder.

This is the first study, to our knowledge, to examine the effects of experience of both childhood illness and adversity on adult consultation behaviour. The results are consistent with previous studies suggesting that childhood adversity is associated with increased health care use (Walker *et al*, 1999; Newman *et al*, 2000) and prospective work that has found childhood experience of illness to be associated with adult illness behaviour (Hotopf *et al*, 1999). Independent effects of childhood illness exposures and adversity on adult outcomes have been proposed once before and they were both associated with somatic presentation of psychiatric disorder in primary care (Craig *et al*, 1993).

Methodological issues

The current study has a number of methodological strengths. We recruited a population-based sample of men and women and achieved a high response rate. Our sample was derived from a large database (the practice register) and the study was performed in a health care system that reliably captures virtually all medical help-seeking in primary care. We used detailed standardised interviews rather than self-report instruments to measure childhood experience and adult psychiatric disorder. In addition, we measured both reported early adversities and illness exposures,

allowing a preliminary investigation of the relative contribution of each. However, the findings of the current study need to be interpreted in the context of its methodological shortcomings.

The retrospective method does not allow definitive statements to be made regarding causality and it could be argued that the observed associations are due to recall bias. Patients who are in frequent contact with health care professionals may be simply more likely or willing to recall illness exposures or adversities in childhood. However, not all childhood variables were recalled more frequently by frequent attenders. In addition, the evidence from adults with a known history of abuse (Williams, 1994) and from sibling pairs (Bifulco *et al*, 1997) suggests that reports of childhood experience are valid and reliable. Furthermore, the CECA interview is designed to minimise recall bias as far as possible. It is a face-to-face interview measure and interviews were carried out in the respondents' own homes. The CECA assesses exposures in the context of the whole childhood situation. It involves detailed enquiry and seeks objective behavioural evidence before a positive rating can be made. It is investigator-rated rather than self-rated and interviewer bias is reduced by consensus rating meetings. Finally, the thresholds for a positive rating are relatively high. Individuals who experienced significant adversity as children are unlikely to forget such experiences but of course they might still be reluctant to disclose them to a researcher.

The study was relatively small. Although the magnitude of the associations between childhood variables and adult outcome was highly significant, the

comparatively small sample size led to wide confidence intervals. In addition, the study was carried out in a single suburban general practice in the British National Health Service. Although the age and gender structure of our sample was similar to that of the local population, our findings may have limited generalisability. However, our results are consistent with studies carried out in very different health care settings (Walker *et al*, 1999; Newman *et al*, 2000). Further studies recruiting larger samples of subjects would overcome some of these difficulties.

An ideal study design might have involved different interviewers carrying out separate assessments of psychiatric disorder and childhood experience in order to avoid contamination and to minimise rater bias. However, we believe that the bias resulting from a single interviewer is likely to be minimal. The SCAN was carried out first, followed by the CECA interview. This allowed the interviewer to build up a rapport with the participant before asking detailed questions about childhood. Final ratings of the CECA were made at consensus meetings by raters blind to the participants' mental state.

Although we considered chronic physical illness, we did not include a standardised measure of severity of physical disorder. It is possible that this might have made an additional contribution to the model. However, when we carried out a *post hoc* analysis using a measure of how disabling individuals found their symptoms (Barnes & Benjamin, 1987), the final model (Table 2) did not change.

It is important that statistical models do not include more variables than is justified

by the number of individuals because this renders estimates of regression coefficients unreliable (Bagley *et al*, 2001). Simulation experiments suggest that the number of events divided by the number of predictor variables should be at least ten, and on this basis it is possible to suggest that the current study is underpowered. However, it is important that models include all relevant variables, and the magnitude of the association between predictor variables and outcome in the current study suggests that our overall model will not be affected unduly by imprecise estimates of the regression coefficients. In any case, if we adopt a more parsimonious model and enter only the five variables most strongly associated with consultation status, our findings are essentially the same, with childhood adversities (abusive experiences) and illness exposures (childhood illness, paternal psychiatric illness) each independently associated with consultation behaviour. A related point concerns the fact that exposure variables are likely to be correlated in this study. This might mean that estimates of their contributions to the model (as measured by their regression coefficients) are imprecise. The variance associated with the regression coefficients will be increased, with a consequent loss of statistical significance – a type II error (Bagley *et al*, 2001). The magnitude of the associations (and related *P* values) in the current study would suggest that this is not seriously affecting our findings.

This study was not designed to examine interactions between variables, or the specificity of outcome and exposure. For example, we found that physical abuse but not sexual or psychological abuse was significantly associated with consultation status in the univariate analysis. This was probably due to small numbers rather than a specific effect of physical abuse, but such issues need to be examined with larger samples in future studies.

Interpretation of findings

How might childhood experience of illness influence later consulting behaviour? It may act by increasing the likelihood of chronic physical illness in adulthood, but we did not find this in our sample. It could reflect the association between physical symptoms in childhood and adult psychiatric disorder (which we know increases consultation) (Hotopf *et al*, 1999). High utilisation may be a learned behaviour

picked up as a result of exposure to the illness and to the illness behaviour of other family members (parents or siblings in the current study). Craig *et al* (1993) suggested that somatic symptoms in childhood lessened the distress associated with neglect, and so established a repertoire that involved somatic rather than emotional means of attracting care. This pattern of response persisted into adulthood.

How might childhood adversity influence later consultation behaviour? It may act through increasing the rate of psychiatric disorder, physical disease or health risk behaviours (Walker *et al*, 1999). Taylor and colleagues (Taylor *et al*, 2000) proposed a model in which aberrant early care leads to abnormal attachment styles in parental relationships that persist into adulthood and encourage medical help-seeking. Another possibility is that individuals with a history of childhood adversity interpret their symptoms in a more negative manner (Scarinci *et al*, 1994).

Implications for practice and research

This study suggests that frequent attenders to primary care have high rates of exposure to illness and adversity as children; they also have higher rates of psychiatric disorder. Thus interventions for high users of health care may need to address both of these needs. Some studies suggest that written disclosure of emotionally important events (including events in childhood) reduces consultation rates (Pennebaker, 1997). Rigorous treatment of mood disorder in primary care may actually increase consultation in the short term (Simon *et al*, 2001), although the longer-term effects are unclear. Promising alternative therapeutic approaches might include cognitive–behavioural therapy, symptom reattribution (Morriss *et al*, 1998) and psychodynamic interpersonal therapy (Guthrie *et al*, 1999).

Future research in this area is limited by the accurate measurement of childhood exposures. The gold standard investigation might be regarded as the prospective study with contemporaneous recording of childhood exposures. Although a truly prospective study may not be feasible or ethically justifiable, retrospective cohort studies (Hotopf *et al*, 1999) could help to clarify whether childhood experiences of illness and adversity influence health care use in later life. However, such designs are not

without their problems. There may well be a bias due to non-disclosure of distressing childhood events at the time when they are occurring. It could be more productive to investigate possible mechanisms for the association between childhood exposures and adult illness behaviour. Studies might include measures of possible pathway variables, such as adult attachment, illness cognitions and somatic symptoms.

REFERENCES

Bagley, S. C., White, H. & Golomb, B. A. (2001) Logistic regression in the medical literature: standards for use and reporting, with particular attention to one medical domain. *Journal of Clinical Epidemiology*, **54**, 979–985.

Barnes, D. & Benjamin, S. (1987) The Self Care Assessment Schedule (SCAS)–I. The purpose and construction of a new assessment of self care behaviours. *Journal of Psychosomatic Research*, **31**, 191–202.

Bifulco, A., Brown, G. W. & Harris, T. O. (1994) Childhood Experience of Care and Abuse (CECA): a retrospective interview measure. *Journal of Child Psychology and Psychiatry*, **35**, 1419–1435.

Bifulco, A., Brown, G. W., Lillie, A., et al (1997) Memories of childhood neglect and abuse: corroboration in a series of sisters. *Journal of Child Psychology and Psychiatry*, **38**, 365–374.

Craig, T. K., Boardman, A. P., Mills, K., et al (1993) The South London Somatisation Study. I: Longitudinal course and the influence of early life experiences. *British Journal of Psychiatry*, **163**, 579–588.

Gill, D. & Sharpe, M. (1999) Frequent consulters in general practice: a systematic review of studies of prevalence, associations and outcome. *Journal of Psychosomatic Research*, **47**, 115–130.

Guthrie, E. A., Moorey, J., Margison, F., et al (1999) Cost effectiveness of brief psychodynamic interpersonal therapy in high utilizers of psychiatric services. *Archives of General Psychiatry*, **56**, 519–526.

Heywood, P. L., Blackie, G. C., Cameron, I. H., et al (1998) An assessment of the attributes of frequent attenders to general practice. *Family Practice*, **15**, 198–204.

Hill, J., Pickles, A., Burnside, E., et al (2001) Childhood sexual abuse, poor parental care and adult depression: evidence for different mechanisms. *British Journal of Psychiatry*, **179**, 104–109.

Hotopf, M., Mayou, R., Wadsworth, M., et al (1999) Childhood risk factors for adults with medically unexplained symptoms: results from a national birth cohort study. *American Journal of Psychiatry*, **156**, 1796–1800.

Macfarlane, G. J., Hunt, I. M. & Silman, A. J. (2000) Role of mechanical and psychosocial factors in the onset of forearm pain: prospective population based study. *BMJ*, **323**: 676–679.

Morriss, R., Gask, L., Ronalds, C., et al (1998) Cost-effectiveness of a new treatment for somatized mental disorder taught to GPs. *Family Practice*, **15**, 119–125.

Mullen, P. E., Romans-Clarkson, S. E., Walton, V. A., et al (1988) Impact of sexual and physical abuse on women's mental health. *Lancet*, **I**, 841–845.

Neal, R. D., Heywood, P. L., Morley, S., et al (1998) Frequency of patients' consulting in general practice and workload generated by frequent attenders: comparisons between practices. *British Journal of General Practice*, **48**, 895–898.

Newman, M. G., Clayton, L., Zuellig, A., et al (2000) The relationship of childhood sexual abuse and depression with somatic symptoms and medical utilization. *Psychological Medicine*, **30**, 1063–1077.

Pennebaker, J. (1997) Writing about emotional experiences as a therapeutic process. *Psychological Science*, **8**, 162–166.

Scarinci, I. C., McDonald-Haile, J., Bradley, L. A., et al (1994) Altered pain perception and psychosocial features among women with gastrointestinal disorders and history of abuse: a preliminary model. *American Journal of Medicine*, **97**, 108–118.

Simon, G. E., Manning, W. G., Katzelnick, D. J., et al (2001) Cost-effectiveness of systematic depression treatment for high utilizers of general medical care. *Archives of General Psychiatry*, **58**, 181–187.

SPSS (2000) *SPSS for Windows. (10.1). 2000.* Chicago, IL: SPSS.

Taylor, R. E., Mann, A. H., White, N. J., et al (2000) Attachment style in patients with unexplained physical complaints. *Psychological Medicine*, **30**, 931–941.

Walker, E. A., Unutzer, J., Rutter, C., et al (1999) Costs of health care use by women HMO members with a history of childhood abuse and neglect. *Archives of General Psychiatry*, **56**, 609–613.

Williams, L. M. (1994) Recall of childhood trauma: a prospective study of women's memories of childhood sexual abuse. *Journal of Consulting and Clinical Psychology*, **62**, 1167–1176.

World Health Organization (1992) *Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems* (ICD–10). Geneva: WHO.

World Health Organization (2000) *Ishell SCAN (201) 2000.* Geneva: WHO.

CLINICAL IMPLICATIONS

- Reports of illness exposures and adversity in childhood were associated with adult consultation behaviour.

- This association held when we adjusted for psychiatric disorder and the final models were able to classify correctly over 90% of frequent attenders.

- Interventions for high users of health care may need to address childhood experiences of illness and childhood adversities as well as adult psychiatric disorder.

LIMITATIONS

- Measures of childhood experience were retrospective.

- The study was carried out at a single general practice in the UK.

- Although the magnitude of the associations between childhood variables and adult outcome was highly significant, the comparatively small sample size led to wide confidence intervals.

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