Child sexual abuse

With an increase in the awareness of childhood sexual abuse, a wide variety of disorders are now being associated with it. This article explores these associations and other possible causes

ANDREW J COTGROVE
MRCPsych MSc
Consultant Adolescent Psychiatrist,
Pine Lodge
Young Peoples' Centre,
Chester

ISRAEL KOLVIN
MD FRCPsych Dip Psych
John Bowlby Professor of Child and Family Mental Health,
The Tavistock Clinic and Royal Free Hospital School of Medicine
London

Society has often chosen to ignore the socially taboo subject of child sexual abuse (CSA).[1] Disclosures of abuse have been met with skepticism or disbelief in line with Freud's contention that his neurotic patient's recollections of early sexual experiences might have been based on fantasy rather than on reality.[2] More recently there has been increasing concern to identify and protect the victims of sexual abuse.

Unfortunately investigations have sometimes started before the assessment techniques have been established on a reliable and validated basis.[3] Most would now agree that CSA can have widespread adverse consequences and we attempt to describe these in this article.

However, a review of the burgeoning literature highlights several problems in the attempt to achieve an accurate picture, including: agreement about definitions, specification of the age of the child when abused and the duration of the abuse, and research method issues.

DEFINING SEXUAL ABUSE

Definitions range widely from the fairly broad[4] to the more specific.[5] The latter distinguish between the witnessing of exhibitionism and pornography, and abuse that involves physical sexual contact. Despite individual variations, the long-term effects of an isolated incident involving witnessing an exhibitionist are likely to be less severe than the effects of genital contact, and very much less severe than the effects of chronic coercive sexual intercourse.

AGE OF ONSET AND DURATION OF ABUSE

Abuse can begin very early and the impact can differ depending on the age of the child when the abuse starts.[6] In over half of the cases studied by Bentovim and Boston, the abuse continued for at least one year.[7]

There was also a correlation bet-ween the duration of abuse, and an increase in psychiatric symptoms and reduction in self-esteem .[8] Hence in studying CSA, it is essential that outcome findings are interpreted in relation to the ages of the children at onset, their emotional development, and the duration of the abuse.

RESEARCH DESIGN FACTORS

The nature of the sample: In the past, most studies relied on clinical samples, deviant groups (such as prostitutes,[9,10] drug addicts[11] and sex offenders[12]) or student samples. However, clinical samples represent only a small minority of adult females exposed to CSA and these are likely to report more psychological symptoms than those who are not referred.[13,14] These samples may therefore be skewed towards psychopathology. The same is true of deviant groups who are particularly likely to have experienced CSA but the proportion of those previously abused who subsequently join such deviant groups is unknown.There are also problems with college or university student samples — CSA may have been a relatively recent event, there is likely to be a bias towards higher intelligence and social class, and many of the sample may not yet have established adult sexual relationships. In addition, it is more difficult to detect small long-term effects when studying a largely non-deviant sample population.

Many such studies have used relatively crude questionnaire surveys yielding poor-quality data. This is therefore not an entirely satisfactory group for providing valid comprehensive evidence of long-term effects.[14] Similar questions have been raised in relation to surveys of nurses as this is a well educated group who are career-orientated and it is therefore possible that this sort of sample may exclude those victims of CSA who are dysfunctional in adulthood. Others have recruited subjects from a normal population by appeals through the media and have compared them with incest victims who were seeking therapy.[13] They report that abuse victims in the 'community sample' could not be differentiated from a control group of women who had not been abused, but they did report a difference between the control group and a sample of abused women who were seeking therapy. Ideally, evidence should be obtained from non-clinical, non-student and non-professional samples. There have been few studies using random samples of the population comparing sexually abused women with those who have not been abused. Two such studies[15,16] both report significant differences between women who had been sexually abused and those who had not.

The use of controls: Controls are essential in order to understand the relevance of any pathology that is demonstrated. There may be high rates of disturbance in an abused group, but this is only meaningful if the rates are significantly higher than in a

control group. For this reason we give particular emphasis to those studies where there is evidence of an adequate or control group.

Retrospective versus pros-pective designs: In retrospective studies the data are usually collected from a population known to have been abused or in which there is a high prevalence of abuse, such as in clinical or deviant samples. The data are often dependent on poorly detailed case-notes, which may also suffer from 'contamination' (the notes may contain evidence of both psychopathology and abuse). A prospective design offers a better chance of avoiding such pitfalls.

Problems with research instruments: A number of older studies used non-standard checklists. More recently, semi-structured interviews and standard measures have been utilized in an attempt to identify specific dysfunction.[14] However, although such measures may be reasonably comprehensive, other authors suggest that special instruments need to be developed in order to identify specific sequelae.[17]

Long-term effects of CSA

These are listed in Box 1.

DISCRETE SYMPTOMS

Psychological problems: Depression and anxiety are the most commonly described psychological symptoms reported in adults who were sexually abused as children. (in both clinical and non-clinical studies). Higher levels were found in a clinical population of 41 self-referred victims of CSA than in a control group.[18] This was also true for a random sample from a 'walk-in' counselling service.[19] Here there were significantly higher levels of anxiety (54 per cent versus 28 per cent) and other symptoms often associated with depression (such as sleep disturbance) in those who had been abused as children compared with those who had not. However, controlled studies do not always report such high rates and such wide differences. Two controlled studies based on clinical populations[20,21] reported higher levels of depressive symptoms in victims of incest, but the differences between the abused and the control groups did not reach statistical significance.

Non-clinical population studies give comparable findings. A controlled survey of 278 university women found significantly higher scores for depression and anxiety in those who had been sexually abused.[22] A similar study of 301 college women found that 65 per cent of those who had been abused reported symptoms of depression, compared with 43 per cent for the control group.[23] Higher levels of depression were also found in nursing students who had been sexually abused than in their fellow students.[24]Several other community studies support these differences, but the proportion of respondents with symptoms varies. Out of a random sample of 387 women in a community health survey, 17 per cent of abused women were depressed compared with only 9 per cent of women who had not been abused. In contrast, a study of another randomly selected sample of 2,000 women found that, of the 10 per cent who had been abused (mostly with genital contact), 20 per cent proved to have psychiatric symptoms (mainly of depression). Only 6 per cent of those that had not been abused reported psychiatric symptoms.[25]

Low self-esteem is commonly associated with depression, but it has also been found to be associated with CSA in its own right.[24,26] In a community study, 19 per cent of abused people reported low self-esteem compared with only 5 per cent in the group who were not abused.[15] However, these findings have not always been replicated.[14] In contrast, clinical studies have shown a substantial difference in the incidence of negative self-image between abused and non-abused groups (60 per cent versus 10 per cent) .[20] Women who were abused as children often feel guilt and some sense of responsibility for what occurred. In fact, Tsai and Wagner[27] concluded from their therapy group studies that guilt is almost a universal phenomenon amongst these women. Sleep disturbance is another symptom often associated with depression that has also been found to be associated with previous sexual abuse.[19,23,28] Seventy-two per cent of sexually abused people complain of restless sleep and 54 per cent of nightmares, compared with 55 per cent and 23 per cent respectively in people who have not been abused.[19]

Dissociative phenomena are also increasingly being recognised as a symptom in adolescents and adults who were abused as children.[19,29,30] Kluft argues that this is a response to psychic trauma.[29] Briere suggests that it may be understood in terms of a defence against the abuse, the child learning to dissociate from her body as an adaptive means to escape from sensory input during sexual victimisation experiences. The commonest forms of dissociation are depersonalisation and derealisation experiences. Such feelings are found frequently in the normal population, but in its clinical form these symptoms are more severe and can be defined as those '...producing significant impairment in social or occupational functioning'.[31] In its most extreme

Box 1. Long-term effects of childhood sexual abuse

PSYCHOLOGICAL PROBLEMS
- Depression
- Anxiety
- Low self-esteem
- Guilt
- Sleep disturbance
- Dissociative phenomena

PROBLEM BEHAVIOURS
- Self-harm
- Drug use
- Prostitution
- Running away

RELATIONSHIP AND SEXUAL PROBLEMS
- Social withdrawal
- Sexual promiscuity
- Re-victimization

LEARNING DISABILITIES

PSYCHIATRIC DISORDERS
- Eating disorders
- Somatization disorder
- Post-traumatic stress disorder
- Borderline personality disorder

form, dissociation can manifest as multiple personality disorder wherein the individual can exist as two or more distinct personalities split off from one another, each of which can be dominant at different times without the sufferer being consciously aware of the others. This is a rare condition, with evidence mainly coming from the North American literature. In one series of 106 adults with this disorder, nearly all of them had been abused (mostly sexually) in childhood.[29] In another sample of 20 patients with multiple personality, 16 had been sexually abused.[30]

Problem behaviours: Self harm (which ranges from the desire to hurt the self[19] to attempted suicide[28,32]) occurs more commonly among adults who have been sexually abused. This may take the form of an impulse or wish, or it may manifest itself as acts of self-mutilation.[33] It is the experience of the authors that, in the clinical population, acts of deliberate self-harm (such as cutting) are extremely commonly associated with a history of CSA. In the adolescent age-group, girls often describe the act of cutting as a 'release of tension'.

Suicidal thoughts were found in 39 per cent of abused people from a community sample compared with 16 per cent of non-abused people,[23] and suicidal gestures were reported in 16 per cent and 6 per cent respectively. Attempted suicide occurred two and a half times more frequently among abused school-age students than among non-abused students[32], and this was also true for clinical populations (51 per cent versus 34 per cent).[19] However, Beitchman *et al*[34] suggest that this correlation may only be significant if the CSA is accompanied with force or the threat of force.

Sexually abused students also have higher levels of drug use (particularly marijuana, alcohol and cigarettes).[32] Forty-five per cent of adolescent girls being treated for chemical dependency had been sexually abused in one study.[35] Within this group, abused girls showed slightly different (and often more serious) psychopathology, including a greater incidence of suicidal ideation and attempted suicide than the non-abused. These findings are consistent with wider links between self-harm, drug use and CSA.

It is also often claimed that CSA contributes to people becoming prostitutes, and this is supported by a study in which 52 per cent of the prostitutes questioned had been sexually abused as children.[9] It has been suggested that rates of previous abuse are not necessarily significantly higher in prostitutes, but that they were abused earlier and with greater coercion.[6] Running away appears to be a common factor between prostitution and CSA - certainly in adolescents.[36] Perhaps these youngsters run away to escape from the abusing environment and turn to prostitution as a means of survival. There is also an association between runaway behaviour and CSA that is independent from the association with prostitution.[28] It is worth noting, however, that running away in adolescence has other strong associations (such as juvenile delinquency) and is not specific to CSA.

Relationships and sexual problems: Victims of CSA are more likely to have long-term problems in both interpersonal relationships and psychosexual adjustment. This may lead to withdrawal from social contact or a tendency to form large numbers of superficial social relationships, with increased numbers of sexual partners and a reduced capacity for forming meaningful long-term relationships.

Relationship problems have been classified as isolation, insecurity, discordance and inadequacy.[37] Sixty-four per cent of a clinical sample of abused patients reported a sense of isolation compared with only 49 per cent of controls.[38] In another clinical sample, 64 per cent of the abused group had difficulty in close relationships, i.e. conflict with or fear of the partner, compared with 40 per cent in the control group.[21] One worrying aspect is that previously abused women tend to choose aggresive partners, which suggests that there is an increased vulnerability to re-victimization.

It is estimated that 33-68 per cent of people who have been abused as children are subsequently raped as adults and 38-48 per cent are subject to violence, compared with 17 per cent of the non-abused population.[39] A similar pattern is seen in a clinical sample where 49 per cent of victims of CSA were battered in adulthood compared with 18 per cent of non-victims.[19] As sexualized behaviour in childhood is commonly associated with CSA, it is not unreasonable to predict that CSA will result in long-term adult sexual disturbance.[34] In fact, 87 per cent of abused women had sexual problems in one study, compared with only 20 per cent of the controls.[21] In addition, there was an increase in sexual activity amongst those who had been abused.[20,21]

However, other researchers involved in community studies have not found these differences in sexual adjustment between abused women and control groups[13,14] although they did report a difference in those abused women who sought therapy. The diversity in these findings may be explained in part by the fact that the reported levels of sexual activity reflect personal perceptions, rather than necessarily being validated accounts.

Learning disabilities: Sexual abuse among adults with learning disabilities (previously known as mental handicap) has only recently begun to receive attention.[40] Accurate estimates of its prevalence are still sparse, but the indications are that sexual abuse is more common among people with learning disabilities than in the general population. This may be due, in part, to the increased vulnerability to CSA of children with learning difficulties. This in turn is due to several factors such as a state of dependency on others for care and a general lack

of privacy. Furthermore, the psychological distress associated with sexual abuse may impair intellectual development, which could contribute to the extent of the learning disability.

CSA AND PSYCHIATRIC DISORDERS

A growing number of studies are reporting increased rates of CSA amongst certain groups of psychiatric patients.[41] It is suggested that CSA may make people significantly more vulnerable to the conditions concerned.

Eating disorders: Out of a sample of 78 patients with eating disorders, 64 per cent reported having had coercive sexual experiences.[42] In a separate sample of inpatients with eating disorders, only 38 per cent were found to have suffered CSA. However, this increased to 50 per cent when only those with a diagnosis of anorexia or bulimia nervosa were considered.

Somatization disorders: High rates of CSA are now being reported in women with somatization disorders.[28,44,45] In a review of the literature on somatization disorder over the last 40 years, Morrison found that only two studies provided any data on childhood sexual experiences.[44] It is likely that the relevant questions were previously just not asked. In his own study, Morrison found that significantly more patients with somatization disorder had been sexually molested as children (55 per cent) than in the control group with affective disorders (16 per cent).[44] Patients with somatization disorders who have been sexually abused as children experience many somatic symptoms, and have investigations and interventions in a wide range of specialties.[45]

Box 2. Symptoms and behaviour associated with borderline personality disorder

- Impulsivity
- Self-harm
- Difficulty maintaining intimacy
- Poor temper control
- Identity disturbance
- Instability of mood
- Intolerance of being alone
- Chronic feelings of emptiness or boredom.

Five of these need to be present for a diagnosis of borderline personality disorder to be made.

Post-traumatic stress disorder: A direct causal link has been suggested between CSA and post-traumatic stress disorder (PTSD). If it can be shown that symptoms usually included in the diagnosis of PTSD (such as anxiety, recurring nightmares, insomnia, depression, guilt, anger, flashbacks and mistrust) occur together after an episode of CSA, then this can be considered as at least suggestive that the one is a consequence of the other. It has been noted that many of the individual symptoms alone have strong associations with CSA, but when found together they take on a new significance and become the syndrome of PTSD. All 17 abused women in a clinical sample of patients who had entered therapy for a variety of reasons, met the DSM-III (American Psychiatric Association classification of mental disorders)[31] criteria for PTSD.[46] The results of a separate retrospective case-note study are less impressive, with 21 per cent of 29 sexually abused children meeting the DSM-III-R criteria.[47] However, this was three times the rate of the control group in their inpatient sample and is likely to represent a significant underestimate because the information was gathered retrospectively from case-notes.

Borderline Personality Disorder: The case for a causal link between CSA and borderline personality disorder is less strong. Nevertheless, there are theoretical arguments to support such a link. A cluster of symptoms experienced by sexually abused women attending a 'walk-in' counselling service has been identified and named 'post-sexual-abuse syndrome'.[19] This syndrome closely resembles the DSM-III diagnosis of borderline personality disorder.[31] The latter term was originally used by psychoanalysts to describe patients who were on the margins of psychosis, but, in DSM-III, borderline personality disorder is a syndrome that is characterized by the presence of at least five of the symptoms and behaviours listed in Box 2. It has been suggested that CSA has a highly disruptive influence on childhood development, resulting in the formation of negative patterns of behaviour, beliefs and symptoms. In this way the concept of CSA causing a disordered development of the personality becomes understandable.

Cause and effect

Many adult psychological problems are associated with prior childhood abuse, but the mechanisms by which sexual abuse contributes to these problems remains unclear. For example, the abuse may have made the individual more vulnerable to subsequent adverse life experiences, rather than directly causing problems. Further, other associated life experiences (such as adverse family circumstances in which the abuse was allowed to take place) may contribute to these problems. A family unable to protect a child from abuse, or even involved directly in that abuse, must be a source of damage to the child's developing personality and psychological adjustment, to an extent that is perhaps as significant as the damage from the abuse itself.

This thinking is supported by a study of college women that found that, when the results were adjusted to allow for adverse parental factors, there was no residual association between the experience of CSA and psychological disturbance.[48] However, other community studies found that both CSA and perceived differences in parental care and warmth made independent significant contributions to psychological distress in adulthood.[14,15] There is also reliable evidence that good quality parental care and support may constitute very powerful protective factors in relation to the development of psychological disturbance[48] even though controlling for the effects of maternal warmth does not remove

all the significant association between previous sexual abuse and subsequent psychological disturbance.[49] Thus, the likelihood is that the basis of any psychological problems are multi factorial. The weighting given to factors such as sexual abuse or family factors will vary from case to case, but will depend to some extent on the duration of the abuse,[50] the levels of violence and coercion used,[6] the relationship with the abuser and the presence of protective factors in the individual's personality or family.[48]

Recent advances

The main long-term effects of CSA appear to have been described by the early 1990s. Since then further work has supported the association between CSA and a number of negative effects, such as depression and self-harm [51], PTSD[52,53,54], borderline personality disorder[54], dissociative phenomenon[52], multiple personality disorder[54] and sexual dysfunction[55]. In addition, there has been support for a correlation between the negative long-term effects of CSA and duration, frequency, severity of abuse and the use of coercion during abuse.[51,53,55,56]

However, this decade has also seen the description of a new syndrome false memory syndrome.[57] It is claimed that, in some cases, allegations of sexual abuse may have been provoked by over zealous questioning. This is still controversial, but it is possible that CSA can become an overused explanation for certain patients' difficulties as awareness of its longterm effects increases.

Ritualistic abuse is a form of CSA which has also been making headline news in recent years. While a history of ritualistic abuse may be associated with a history of increased severity of abuse,[52] it does not appear to be associated with more long-term consequences.

REFERENCES

1. Vargo B, Stavrakaki C, Ellis J, Williams E. Child sexual abuse: its impact and treatment. *Canadian Journal of Psychiatry* 1988; **33**: 468-473.
2. Freud S. The aetiology of hysteria. In: *The Complete Psychological Works of Sigmund Freud.* Strachley J (Ed and trans). London: Hogarth 1962.
3. Kolvin I. Diagnostic thresholds in child sexual abuse. In: Sand EA, editor. Mental Health in the family. Geneva: WHO, 1992.
4. Schecter MD, Roberge L. Sexual exploitation. In: *Child Abuse and Neglect: the family and the community.* Helfer RE and Kempe CH (Ed). Cambridge, Massachusetts: Ballinger 1976.
5. Mrazek D, Mrazek P. Child maltreatment. In: *Child and Adolescent Psychiatry.* Rutter and Hersov (Ed). Oxford: Blackwell Scientific Publications 1985.
6. Browne A, Finkelhor D. Impact of child sexual abuse: a review of the research. *Psychological Bulletin* 1986; **99**: 66-77.
7. Bentovim A, Boston P. Sexual abuse - basic issues - characteristics of children and families. In: *Child sexual abuse within the family: assessment and treatment.* Bentovim A *et al* (Ed). London: John Wright (Butterworth) 1988.
8. Monck E, Bentovim A *et al.* Report submitted to the Department of Health on the effects of child sexual abuse and the effects of treatment, 1992.
9. James J, Meyerding J. Early sexual experiences and prostitution. *American Journal of Psychiatry* 1977; **134**: 1381-85.
10. Silbert MH, Pines AM. Sexual abuse as an antecedent to prostitution. *Child Abuse and Neglect* 1981; **5**: 407-11.
11. Carmen E, Rieker PP, Mills T. Victims of violence and psychiatric illness. *American Journal of Psychiatry* 1984; **141**: 378-83.
12. Groth NA, Burgess AW. Sexual trauma in the life histories of rapists and child molesters. *Victimology: an International Journal* 1979; **4**: 10-16.
13. Tsai M, Feldman-Summers S, Edgar M. Childhood molestation: variables related to differential impact of psychosexual functioning in adult women. *Journal of Abnormal Psychology* 1979; **88**: 407-17.
14. Greenwald E, Leitenberg H, Cado S, Tarran MJ. Childhood sexual abuse: long-term effects on psychological and sexual functioning in a nonclinical and nonstudent sample of adult women. *Child Abuse and Neglect* 1990; **14**: 503-13.
15. Bagley C, Ramsay R. Sexual abuse in childhood: psychological outcomes and implications for social work practice. *Journal of Social Work and Human Sexuality* 1986; **4**: 33-47.
16. Murphy SM, Kilpatrick DG, Amick-McMullan A, Veronen LJ, *et al.* Current psychological functioning of child sexual assault survivors: a community study. *Journal of Interpersonal Violence* 1988; **3**: 55-79.
17. Sheldrick C. Adult sequelae of child sexual abuse. *British Journal of Psychiatry* 1991; **158** suppl. 10: 52-62.
18. Gorcey M. Psychological consequences for women sexually abused in childhood. *Social Psychiatry* 1986; **21**(3): 129-33.
19. Briere J. The effects of childhood sexual abuse on later psychological functioning: defining a post-sexual-abuse syndrome. Paper presented at the Third National Conference on Sexual Victimization of Children. Washington, D.C., 1984.
20. Herman J. Father-daughter incest. Cambridge, Mass.: Harvard University Press 1981.
21. Meiselman K. Incest: a psychological study of causes and effects with treatment recommendations. San Francisco: Josey-Bass 1978.
22. Briere J, Runtz M. Symptomatology associated with childhood sexual victimization in a nonclinical adult sample. *Child Abuse and Neglect* 1988; **12**: 51-59.
23. Sedney MA, Brooks B. Factors associated with a history of childhood sexual experience in a nonclinical female population. *Journal of the American Academy of Child Psychiatry* 1984; **23**: 215-218.
24. Rew L. Childhood sexual exploitation: long-term effects among a group of nursing students. *Issues in Mental Health Nursing* 1989; **10**: 181-91.
25. Mullen PE, Romans-Clarkson SE, Walton VA, *et al.* Impact of sexual and physical abuse on women's mental health. *Lancet* 1988; **2**: 841-45.
26. Courtois CA. Characteristics of a volunteer sample of adult women who experienced incest in childhood or adolescence. *Dissertation Abstracts International* 1979; **40**: 3194A-3195A.
27. Tsai M, Wagner N. Therapy groups for women sexually molested as children. *Archives of Sexual Behaviour* 1978; **7**: 417-27.
28. Rimsza MA, Berg RA, Locke C. Sexual abuse: Somatic and emotional reactions. *Child Abuse and Neglect* 1988; **12**: 201-208.
29. Kluft RP. Childhood antecedents of multiple

personality. Washington D.C.: American Psychiatric Press Inc. 1985.
30. Coons PM, Bowman ES, Pellow TA, Schneider P. Post-traumatic aspects of the treatment of victims of sexual abuse and incest. *Psychiatric Clinics of North America* 1989; **12**(2): 325-35.
31. The American Psychiatric Association. Diagnostic and statistical manual of mental disorders (3rd ed). Washington D.C.: APA 1980.
32. Hibbard RA, Brack CJ, Rauch S, Orr DP. Abuse, feelings, and health behaviours in a student population. *American Journal of Diseases in Children* 1988; **142**: 326-30.
33. Shapiro S. Self-mutilation and self-blame in incest victims. *American Journal of Psychotherapy* 1987; **41**: 46-54.
34. Beitchman JH, Zucker KJ, Hood JE, daCosta GA, Akman D, Cassavia E. A review of the long-term effect of child sexual abuse. *Child Abuse and Neglect* 1992; **16**: 101-18.
35. Edwall GE, Hoffmann NG, Harrison PA. Psychological correlates of sexual abuse in adolescent girls in chemical dependency treatment. *Adolescence* 1989; **24**(94): 279-88.
36. Seng M. Child abuse and adolescent prostitution: a comparative analysis. *Adolescence* 1989; **24**: 665-675.
37. Jehu D. Beyond sexual abuse: therapy with women who were childhood victims. Chichester: Wiley 1988.
38. Briere J, Runtz M. Post sexual abuse trauma: data and implications for clinical practice. *Journal of Interpersonal Violence* 1987; **2**: 367-79.
39. Russell DE. Incidence and prevalence of intrafamilial and extrafamilial sexual abuse of female children. *Child Abuse and Neglect* 1983; **7**(2): 133-46.
40. McCormack B. Sexual abuse and learning disabilities. *British Medical Journal* 1991; **303**: 143-44.
41. Whitwell D. The significance of childhood sexual abuse for adult psychiatry. *British Journal of Hospital Medicine* 1990; **43**: 346-52.
42. Oppenheimer R, Howells K, Palmer RL, Chaloner DA. Adverse sexual experience in childhood and clinical eating disorder. *Journal of Psychiatric Research* 1985; **19**: 357-61.
43. Hall RCW, Tice L, Beresford TP, Wooley B, Hall AK. Sexual abuse in patients with anorexia nervosa and bulimia. *Journal of Psychosomatic Medicine* 1989; **30**(1): 73-79.
44. Morrison J. Childhood sexual history of women with somatization disorder. *American Journal of Psychiatry* 1989; **146**(2): 239-41.
45. Arnold RP, Rogers D, Cook DAG. Medical problems of adults who were sexually abused in childhood. *British Medical Journal* 1990; **300**: 705-08.
46. Lindberg FH, Distad LJ. Post-traumatic stress disorders in women who experienced childhood incest. *Child Abuse and Neglect* 1985; **9**: 329-34.
47. Deblinger E, McLeer SV, Atkins MS, Ralphe D, Foa E. Post-traumatic stress in sexually abused, physically abused and non-abused children. *Child Abuse and Neglect* 1989; **13**: 403-08.
48. Fromuth ME. The relationship of childhood sexual abuse with later psychological and sexual adjustment in a sample of college women. *Child Abuse and Neglect* 1986; **10**: 5-15.
49. Peters SD. Child sexual abuse and later psychological problems. In: *Lasting Effects of Child Sexual Abuse*. Wyatt GE and Johnson Powell G. London: Sage Publications 1988.
50. Bentovim A. Personal communication - preliminary results of a study conducted at The Hospital For Sick Children, Great Ormond Street, London 1990.
51. Boudewyn AC, Liem JH. Childhood sexual abuse as a precursor to depression and self-destructive behaviours in adulthood. *J Trauma Stress* 1995; **8**(3): 445-59.
52. Lawrence KJ, Cozolino L, Foy DW. Psychological sequelae in adult females reporting childhood ritualistic abuse. *Child Abuse and Neglect* 1995; **19**(8): 975-84.
53. Rowan AB, Foy DW, Rodriguez N, Ryan S. Posttraumatic stress disorder in a clinical sample of adults sexually abused as children. *Child Abuse and Neglect* 1994; **18**: 51-61.
54. Murray JB. Relationship of childhood sexual abuse to borderline personality disorder, posttraumatic stress disorder, and multiple personality disorder. *Journal of Psychology* 1993; **127**(6): 657-76.
55. Kinzl JF, Traweger C, Biebl W. Sexual dysfunctions: relationship to childhood sexual abuse and early family experiences in a nonclinical sample. *Child Abuse and Neglect* 1995; **19**(7): 785-92.
56. Ussher JM, Dewberry C. The nature and long-term effects of childhood sexual abuse: a survey of adult women survivors in Britain. *British Journal of Clinical Psychology* 1995; **34**(2): 177-92.
57. Kolvin I, Trowell J. Child sexual abuse. In: Rosen I, editor. Sexual Deviation. Open University Press, 1996: 337-360.

Continued from page 380

22. Miller GV, Ramsden CW, Primrose JN. Autologous transfusion: an alternative to transfusion with banked blood during surgery for cancer. *Br J Surg* 1991; **78:** 713-15.
23. Fujimoto J, Okamoto E, Yamanaka N et al. Efficacy of autotransfusion in hepatectomy for hepatocellular carcinoma. *Arch Surg* 1993; **128:** 1065-9.
24. Giordano GF, Giordano DM, Wallace BA et al. An analysis of 9,918 consecutive perioperative autotransfusions. *Surg Gynecol Obste* 1993; **176:** 103-10.
25. Consensus Panel. Consensus conference on autologous transfusion. October 1995 final consensus statement. Royal College of Physicians of Edinburgh. *Transfusion* (in press).
26. Desmond MJ, Thomas MJG, Gillon J, Fox MA. Royal College of Physicians of Edinburgh 1995 consensus conference on autologous transfusion. Background paper – perioperative red cell salvage. *Transfusion* (in press).
27. Thomas D. Practical experience of running an autologous transfusion service. Consensus conference on autologous transfusion, October 1995, Royal College Of Physicians of Edinburgh. *Transfusion* (abstract in press).
28. Henderson MS, Newman JH. Reinfusion of unwashed salvaged blood following knee replacement. Consensus conference on autologous transfusion October 1995, Royal College of Physicians of Edinburgh. *Transfusion* (abstract in press).
29. Brecher ME, Rosenfeld M. Mathematical and computer modelling of acute normovolaemic hemodilution. *Transfusion* 1994; **34**: 176-9.
30. Feldman JM, Roth JV, Bjoraker DG. Maximum blood savings by acute normovolaemic hemodilution. *Anesth Analg* 1995; **80**: 108-13.
31. Weiskopf RB. Mathematical analysis of isovolaemic hemodilution indicates that it can decrease the need for allogeneic blood transfusion. *Transfusion* 1995; **35**: 37-41.