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## **Resilience to adult psychopathology following childhood maltreatment: Evidence from a community sample<sup>☆</sup>**

**Stephan Collishaw<sup>a</sup>** , **Andrew Pickles<sup>b</sup>**, **Julie Messer<sup>a</sup>**,  
**Michael Rutter<sup>a</sup>**, **Christina Shearer<sup>c</sup>** and **Barbara Maughan<sup>a</sup>**

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### **Abstract**

#### **Objective**

Child abuse is an important risk for adult psychiatric morbidity. However, not all maltreated children experience mental health problems as adults. The aims of the present study were to address the extent of resilience to adult psychopathology in a representative community sample, and to explore predictors of a good prognosis.

#### **Methods**

**Data are drawn from a follow-up of the Isle of Wight study, an epidemiological sample assessed in adolescence and at midlife. Ratings of psychiatric disorder, peer relationships and family functioning were made in adolescence; adult assessments included a lifetime psychiatric history, personality and social functioning assessments, and retrospective reports of childhood sexual and physical abuse.**

#### **Results**

Ten percent of individuals reported repeated or severe physical or sexual abuse in childhood. Prospective measures revealed increased rates of adolescent psychiatric disorders in this group. Rates of adult psychopathology were also high. A substantial minority of abused individuals reported no mental health problems in adult life. Resilience of this kind was related to *perceived parental care, adolescent peer relationships, the quality of adult love relationships, and personality style.*

## Conclusion

*Good quality relationships across childhood, adolescence and adulthood appear especially important for adult psychological well being in the context of childhood abuse.*

**Keywords:** Maltreatment; Child abuse; Resilience; Psychopathology; Isle of Wight

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## **Introduction**

Child abuse is a serious and common risk that affects the long-term mental health of individuals in profound ways. However, a growing body of evidence indicates that the mental health of a substantial minority of abused individuals appears relatively unaffected ([McGloin & Widom, 2001](#)). **Gaining a fuller understanding of the factors and processes involved in positive adaptation is important for several reasons.**

Theoretically, models of resilience have the potential to enhance the understanding of the mechanisms by which abuse affects psychosocial development. Clinically, some protective factors may be amenable to external manipulation and could thus present a potential focus for future treatments and interventions. The present study uses **longitudinal data from a general population sample studied first in adolescence and again at mid-life to examine correlates and outcomes of childhood abuse, the extent of resilience for adult psychopathology, and the factors that best predict such resilience.**

**In the UK approximately one or two children die each week at the hands of an adult.** Over 30,000 children's names in England were on the child protection register in the year up to 31 March 2002, a rate of approximately 2.5 per 1,000 ([NSPCC, 2003](#)). However, estimates of the cumulative incidence of abuse from

general population surveys suggest that **most children's experiences of abuse are not officially recorded**. Such studies point to rates of approximately **8% for serious forms of sexual abuse** (see [Fergusson & Mullen, 1999](#) for a review) and approximately **7% for serious forms of physical abuse** ([Cawson, Wattam, Brooker, & Kelly, 2000](#)), **with many children experiencing both**.

**The implications (of child maltreatment ?) for children's psychological development and long-term mental health have been well documented**. Consequences include cognitive delays and lowered IQ (e.g., [Koenen, Moffitt, Caspi, Taylor, & Purcell, 2003](#)), neurobiological abnormalities (see [Glaser, 2000](#) for a review), dysfunctional behaviors such as conduct problems, aggression and substance abuse (e.g., [Fergusson, Horwood, & Lynskey, 1996](#); [Schuck & Widom, 2001](#)), and an increased risk of adolescent and adult psychiatric disorders including depression, suicide, anxiety disorder, PTSD, and somatization disorders (e.g., [Brown, Cohen, Johnson, & Smailes, 1999](#); [Fergusson et al., 1996](#); [Fergusson & Lynskey, 1997](#); [Lansford et al., 2002](#)). **Associations with adult psychopathology are independent of other associated environmental adversities** (e.g., [Brown et al., 1999](#) and [Fergusson et al., 1996](#)), **and environmentally mediated effects of abuse have been documented in genetically informative designs** ([Kendler et al., 2000](#)).

Current evidence also makes clear, however, that not all abused children go on to experience mental health problems later in life. A number of reviews have estimated that around a third of individuals who have experienced sexual abuse will not exhibit adult

psychiatric problems (e.g., [Fergusson & Mullen, 1999](#); [Stevenson, 1999](#)). [McGloin and Widom \(2001\)](#) found that 48% of children with documented histories of abuse or neglect did not meet criteria for adult psychiatric disorders including depression, anxiety, PTSD and ASPD, while 38% had not had a diagnosis for substance abuse. Examining successful functioning over a broad range of domains of adult psychosocial functioning, 22% were classified as “resilient.”

Researchers have long realized that understanding positive adaptation in the face of adversity is important, but there has been considerable debate on how best to define and study the concept of resilience ([Kaufman, Cook, Arny, Jones, & Pittinsky, 1994](#); [Luthar, 2003](#); [Luthar, Cicchetti, & Becker, 2000](#); [Masten, 2001](#), [Rutter, 1985](#) and [Rutter, 2006](#)). It is generally agreed that a working definition should consider two points. First, the experience to which individuals have been exposed should present a sufficient “risk” to which individuals can be considered to have shown “resilience.” Second, markers of resilience should encompass a variety of domains and be evident across an extended time period ([Luthar et al., 2000](#) and [Rutter, 2006](#)). This is particularly important in discussions of resilience in the face of abuse, given the negative implications over a broad range of functioning. In line with these considerations, we defined resilience in the present study by identifying individuals who (1) had experienced repeated, ongoing or severe sexual and/or physical abuse, and (2) who reported no psychiatric disorders or suicidality over a 30-year adult follow-up period. This definition stringently defined the risk to which

individuals were said to be resilient and covered a broad spectrum of psychiatric outcomes over a long time span.

Research has highlighted a variety of mechanisms that may explain positive life trajectories in the face of childhood adversity. Resilient functioning appears to arise from the interaction between heritable factors, individual characteristics and experiential factors over time. Genetic factors (e.g., polymorphism in monoamine oxidase A genotype), biological factors (e.g., stress-reactivity), cognitive factors (e.g., intelligence, locus of control, self-esteem, planning, self-regulation), and inter-personal factors (e.g., emotionally-responsive parenting, peer affiliations and friendships, supportive and affectionate marital relationships) are all related to individual variability in responses to adversity (e.g., [Caspi et al., 2002](#) and [Masten et al., 1999](#); [Quinton, Rutter, & Liddle, 1984](#); [Rutter, 2006](#); [Werner & Smith, 2001](#)).

In relation to child abuse, previous research has highlighted several important factors that consistently appear to be related to better or worse adaptation. First, cognitive ability, cognitive styles and personality factors may be important. Studies of selected samples suggest that high self-esteem, internal locus of control, external attributions of blame, and individuals' coping strategies all predict more positive outcomes both cross-sectionally and prospectively across childhood (e.g., [Cicchetti, Rogosch, Lynch, & Holt, 1993](#); [McGee, Wolfe, & Olson, 2001](#)).

The family background and parenting of abused and neglected children are also likely to be important. Most studies suggest that the more sensitive, caring and safe the home environment, the

more adaptive the outcome will be (Egeland, Carlson, & Sroufe, 1993; Romans, Martin, Anderson, O'Shea, & Mullen, 1995; Spaccarelli & Kim, 1995). In addition, Heller, Larrieu, D'Imperio and Boris (1999) suggest that the availability of emotional support at the time of the abuse will strengthen the ability of an individual to draw support from others in adulthood, thereby engendering resilient functioning. The ability to form, maintain and benefit from good inter-personal relationships appears to be another important factor in predicting positive adaptation in the context of childhood abuse (Bolger & Patterson, 2003; Lynskey & Fergusson, 1997). Lynskey and Fergusson (1997) studied resilience following childhood sexual abuse in a community sample that combined retrospective reports of abuse with prospective and contemporaneous reports of potential protective factors. The strongest predictors of resilience were the extent of recalled parental care and support, and the quality of adolescent peer **relationships**.

Adults with a history of child abuse are more likely to have difficulties over a broad range of inter-personal functioning, including adult love relationships, friendships, criminality and employment. In addition, they also appear at increased risk of serious negative life events such as revictimization (Coid et al., 2001). Both prospective and retrospective evidence suggests that adult experiences may mediate the relationships between childhood abuse and adult psychopathology (Coid et al., 2003; Horwitz, Widom, McLaughlin, & White, 2001). At the same time, research also highlights the potential for adult experiences as providing important turning points for individuals from at-risk

backgrounds ([Rutter, 2006](#)). Taken together, these findings suggest that mechanisms of resilience need to take account of the pathways linking childhood experience to adult psychopathology ([Hill, 2003](#)).

Finally, when testing predictors of resilience it is also necessary to consider variability in the severity of the initial risk exposure. Characteristics of the abuse experience, such as timing, duration, frequency, severity, degree of threat and relationship to the perpetrator are all associated with better or worse outcomes (e.g., [Bulik, Prescott, & Kendler, 2001](#); [Keiley, Howe, Dodge, Bates, & Pettit, 2001](#); [Manly, Kim, Rogosch, & Cicchetti, 2001](#)). Given these consistent findings, it is clearly important to test whether specific risk and protective factors predict resilience over and above the severity of the abuse experience.

To summarize, research to date has highlighted a range of possible mechanisms that may account for resilience following child abuse. However, important gaps in understanding remain. Many previous studies have only tested resilience in the short term or for particular outcomes. Second, few studies have examined resilience to the effects of child abuse in representative epidemiological surveys. Finally, many hypothesized resilience factors may be as important to positive adaptation in non-abused as in abused samples. Non-abused comparison groups are required to identify factors that are of *particular* importance for understanding resilience in the context of abuse.

Aims and hypotheses

This paper capitalizes on a unique epidemiological sample first assessed in the 1960s and since followed to midlife. The first aim was to examine adolescent and adult psychopathology in individuals who reported being abused in childhood and to establish the extent of resilience in this group. It was hypothesized that abuse would be associated with increased risks for psychiatric disorder, even controlling for correlated childhood family adversity. Additionally, it was hypothesized that a significant minority of abused individuals would show no evidence of adult psychiatric disorder and would be classified as resilient. The second aim was to identify factors that distinguished resilient and non-resilient individuals with experiences of abuse. For this purpose, the study included a rich set of both prospectively and retrospectively assessed explanatory factors, relating to the nature and severity of the abuse, family background, inter-personal relationships in childhood and adulthood, cognitive ability, and personality style. Finally, the inclusion of a comparison group allowed us to test which factors were specifically related to resilience following abuse and which were more general predictors of positive adaptation. It was hypothesized that some factors would be associated with adult psychopathology regardless of abuse status (e.g., maternal psychopathology, neuroticism, gender), while others would show stronger or unique associations in the context of abuse (e.g., relationships with parents, friends and adult partners).

## **Method**

### **Sample and design**

The Isle of Wight study began in 1964 as one of the first systematic epidemiological investigations in child psychiatry. The Isle of Wight is located off the south coast of mainland England, with a population of just over 100,000 living in small towns or in rural areas. At the time of the original childhood studies the socio-economic profile of the Island was closely comparable to that of the UK as a whole. Comparisons with national indicators of economic, social, housing and environmental conditions, educational participation and achievements, and standardized mortality ratios suggest that the population of the Island remains broadly representative of the UK population today. Study members were first seen at age 9–10 years and were followed up in adolescence at age 14–15 years. They have since been re-contacted in mid-life at around 44–45 years of age. This study draws on data collected in adolescence and in adulthood.

### **The Isle of Wight study—adolescence (1968)**

The adolescent studies used a multi-method multi-phase approach to estimate the prevalence of disorder, combining population screening with an intensive investigation of a selected sub-sample. The screen population in adolescence consisted of a 2-year age-cohort of children with home addresses on the Island (all those born between 1 September 1953 and 31 August 1955). Eligible children ( $N = 2,307$ ) were identified from local education and health authority records. The only exclusions were the small group of children who attended private schools (approximately 6% of the child population). Screening for both psychiatric and educational problems was undertaken using the Rutter A parent and Rutter B teacher behavior questionnaires (

reading and IQ tests. All adolescents scoring beyond selected cut-points were included in the intensive study phase, as were children who had attended child guidance, appeared before juvenile court, or been in long-term residential placements in the previous year. A randomly selected comparison group (approximately 1 in 12 of the screen population) was also intensively studied. Response rates were high—97% of the teacher and 83% of the parent behavioral questionnaires were completed, together with 92% of the educational tests.

[The intensive study included 571 adolescents and their parents.](#)

Interviews assessed adolescent and parental psychopathology, adolescent peer relationships, family functioning, and collected a variety of socio-demographic information. Teachers provided additional reports on possible behavioral and emotional manifestations of disorder. The response rate from teachers was 96.6%, and 90.1% of parents/caretakers and 98.4% of adolescents were successfully interviewed.

### **The Isle of Wight follow-up study (1998–2000)**

The Isle of Wight follow-up study was approved by the Ethical Committee (Research) of the Institute of Psychiatry. Informed consent for participation in the study was obtained from study members. The adult follow-up took place in 1998–2000 when participants ranged in age from 42 to 46 years (mean age = 44 years 2 months). [All but 18 members of the original adolescent cohort were included in the follow-up study](#) (16 were severely intellectually retarded, and two were identified as permanent refusals). [Those who were intensively studied in adolescence were](#)

included in a group to be interviewed in adulthood; the remainders were sent a questionnaire to complete. Of the 571 study members selected for intensive study, 13 were known to have died by the time of the follow-up; 97% of the remainder were successfully located in adulthood ( $n = 541$ ), and follow-up data were collected for 70% of those traced ( $n = 378$ ). The great majority (367/378) were interviewed in person; 5 study members were interviewed by telephone; and 11 completed questionnaires. Of those who were interviewed ( $n = 367$ ), almost all answered the questions relating to childhood abuse (99.5%;  $n = 364$ ). On the whole, attrition patterns at follow-up showed little evidence of systematic response bias. Responders were representative of the full sample in terms of gender, social background and in terms of adolescent emotional/behavioral adjustment and psychiatric status. The only significant predictors of non-response were low adolescent reading and IQ scores.

## **Prospective measures collected in adolescence**

### **Psychopathology**

Psychiatric disorder was assessed through interviews with parents and children and through reports from teachers. Trained psychiatrists or social scientists, blind to the children's selection status, conducted all interviews. Interviews assessed the frequency, severity and duration of specific behaviors and symptoms over the past year. Diagnoses were based on clinical review of the interview protocols by two experienced child psychiatrists, undertaken blind to selection status. Severity was rated on five-point scales, differentiating cases with no

abnormality, those with sub-threshold symptoms, and those with mild, moderate or marked disorder. [Inter-rater reliability was high](#) ( $r = .89$ ). Clinical ratings of any disorder, anxiety disorders and suicidal ideation are used here. In addition, while the studies took place before the development of formal research diagnostic interviews, the symptom data were used to identify cases of conduct disorder (two or more symptoms) and minor depression according to DSM-IV criteria

### **Peer relationships**

Accounts by adolescents and parents were used to rate the adequacy of peer relationships over the past year on a 3-point scale (normal, moderate abnormality, marked abnormality). The assessment focused on difficulties such as an inability to make or keep friends, being teased or bullied, teasing or bullying other children, and feeling unpopular or lonely.

### **Family functioning and demographics**

Interviews with parents provided information on parental separation and divorce, parental discord, family size, repeated long-term separations from parents (three or more separations of 1 month or longer since birth), family social class (manual or unemployed vs. non-manual), and housing tenure (owner occupier vs. other). In addition, clinical reviews of the parental interviews were used to rate the presence of maternal psychiatric disorder over the past year. Information was obtained on family contacts with health, family or social services (e.g., child guidance, police, welfare, marriage guidance). A childhood family adversity index

was constructed by counting across indicators of parental divorce, parental discord, maternal psychiatric disorder, separations from mother, and family service use. To ensure maximum available Ns for analyses in which family adversity is controlled, missing scores on this index ( $n = 58$ ) were imputed using retrospective accounts of family adversity (parental divorce, parental discord, parental psychopathology or alcoholism, periods in foster or institutional care).

## **Retrospective measures collected in adulthood**

### **Childhood abuse**

Childhood abuse was defined using retrospective reports collected during adult interviews with the intensively studied sample. The sexual and physical abuse modules were based on the Childhood Experience of Care and Abuse Interview (CECA, [Bifulco, Brown, & Harris, 1994](#)). An assessment of the validity of the CECA among pairs of sisters at risk of abuse showed high levels of corroboration of accounts of both sexual and physical abuse ([Bifulco, Brown, Lillie, & Jarvis, 1997](#)).

Study members were asked about the degree of sexual contact involved in each experience, the frequency of experiences, the age of the study member, and the age and relationship to the study member of the perpetrator. Sexual abuse was rated taking into account these different factors. In particular, incidents were rated as abusive if the sexual contact was age-inappropriate (experiences prior to age 16 years involving adults, not peers), if sexual contact clearly over-stepped normal boundaries (e.g.,

genital touching by strangers), or exceptionally in cases of non-contact abuse (e.g., exposure by known persons, being forced to watch sexual activity; in contrast, exhibitionism by strangers was excluded). For the purposes of this study, only repeated, ongoing sexual abuse or isolated but very severe forms of abuse (e.g., rape) were considered.

Physical abuse was defined as the repeated experience of physical violence before age 16 years by a parent, caretaker or other adult. It covered being beaten, kicked, burned, and hit with belts or other objects. Threats of violence and less severe forms of physical chastisement (e.g., slapping or hitting with a slipper) were excluded.

### **Adult psychopathology**

Adult psychopathology was assessed using the Schedule for Affective Disorders and Schizophrenia—Lifetime version, revised as appropriate to cover DSM-IV diagnostic criteria. Diagnoses of Axis I disorders since age 16 were made according to DSM-IV criteria for symptoms and associated impairment [major depression (MDD), dysthymia (DD), generalized anxiety disorder (GAD), panic with and without agoraphobia, social phobia, post-traumatic stress disorder (PTSD), obsessive compulsive disorder (OCD), anorexia and bulimia, alcohol and substance abuse or dependence]. In addition, an assessment of lifetime suicidal ideation and attempted suicide was made. The assessments were used to generate counts of number of episodes for each disorder, and age at first and most recent episode. Simple phobias were not examined here, as these are common in both non-abused and

abused groups. No assessment was made of somatization disorder.

### **Parental care**

Study members completed mother and father versions of the shortened seven-item Parental Bonding Instrument to measure their perceptions of the parenting they experienced as children. The PBI has been shown to have good psychometric properties, and the abbreviated version used here correlates highly with the full scales. The PBI generates two scale scores (care and control); we focused here on categorical indicators of low and high care, with low care defined as scores of 5 or lower, and high care defined as scores of 8 or 9 on the three-item care subscales (range 0–9).

**The Adult Personality Functioning Assessment (APFA)** is an investigator-based interview designed to assess patterns of specific and general social dysfunction. The APFA covers six domains of functioning: work, marriage/cohabitation, friendships, non-specific social contacts, day-to-day coping, and negotiations. A rating in each domain is made reflecting the level of functioning (1—unusually effective to 6—pervasive failure). A general measure of personality functioning is derived by summing ratings for each domain. For this study we focused on an indicator of the quality of adult friendships over the past 10 years and on global difficulties.

### **Relationship history**

Informants' descriptions of their first long-term relationship were used to rate how supportive their first partner was (both

emotionally and practically). An indicator of relationship instability identified those who had experienced a divorce or the breakdown of a long-term cohabitation (6 months or longer).

## **Personality**

The 48-item Eysenck Personality Questionnaire was administered. We focused on scores for the Neuroticism sub-scale, identifying the top quartile of the distribution of scores.

## **Crime**

Study members completed [a questionnaire about involvement in illegal activities since age 18](#). We identified those who reported any criminal activity with the exception of minor motoring offences.

## **Self-rated health**

Individuals rated their current health on a five-point scale (poor, fair, good, very good, excellent). This widely used scale is reported to be a reliable and valid index of ill health.

## **“Quality of relationships” index (adolescent / adult composite)**

A summary scale of positive relationships across the life span was derived by counting across the following indicators: either parent rated as very caring (score of 8 or 9 on the PBI care subscale); adolescent peer relationships rated as normal; adult friendships rated as positive (APFA rating of 1–3); first adult partner rated as supportive; stable relationship history. Due to the small number of individuals with competencies in every domain or in no domain,

scores of 0 and 1 were grouped together, as were scores of 4 or 5, to form a four-point scale (range 1–4).

### **Analysis strategy**

All analyses focused on individuals with data for relevant variables from the intensive study phases in adolescence and at follow-up. [Table 1](#) illustrates the methods used to adjust reported cumulative incidence rates and group comparisons to account for the multi-phase nature of the study design and non-response variations by screen status. In particular, weights of 18.146 (i.e., 1869/103) and 1.617 (i.e., 422/261) were applied to “screen-negative” and “screen-positive” study members respectively in the group comparisons of abused and non-abused study members (first four sections of “Results”). For comparisons of “resilient” and “non-resilient” subgroups of abused individuals (fifth and sixth sections of “Results”), unadjusted proportions are reported due to problems of high sensitivity to large weights that arise when applied to small subgroups of individuals. In addition, statistical tests in the fifth and sixth sections took a simpler approach to adjusting for the design of the study, with an identifier of screen status included as a covariate throughout. Logistic regression analyses were used for tests of dichotomous outcomes. Tables report adjusted (first four sections) or unadjusted (fifth and sixth sections) percentages, odds ratios (OR), 95% confidence intervals (CI), and associated significance levels. Analyses were conducted in STATA ([StataCorp, 2003](#)), with analyses using weighted likelihood estimation and the robust or sandwich parameter covariance matrix estimator of [Huber \(1967\)](#).

Table 1.

Calculating the cumulative incidence of childhood abuse<sup>a</sup>

	Adolescent study (N)	Data at follow up (N)	Reporting abuse (N)	Report abuse (%)
Not selected on screening procedures	149	103	10	9.7
Selected on screening procedures	422	261	34	13.0
<b>Total</b>	<b>571</b>	<b>364</b>	<b>44</b>	

<sup>a</sup> Total cumulative incidence of abuse estimated as  $236/2291 = 10.3\%$ .

<sup>b</sup> 16 children with severe retardation excluded.

## Results

### Cumulative incidence and characteristics of reported abuse in childhood

In total, 44 individuals (20 men and 24 women) reported experiences of childhood abuse—a weighted rate of 10.3% (95% CI = 5.6%–15.1%) (see also Table 1). Twenty-eight individuals (8 men and 20 women) reported repeated or very severe sexual abuse, corresponding to an estimated 7.8% (95% CI = 3.5–12.2%) of the original population. Twenty-six individuals reported physical abuse (14 men and 12 women), corresponding to an estimated 4.7% (95% CI = 1.6–7.8%) of the full cohort. In nine cases, the

abuse was rated as major (hospitalization for physical injuries or attempted/actual sexual intercourse), 12 individuals reported both physical and sexual abuse, 29 reported that the abuse had occurred in their own home, 42 reported repeated or ongoing episodes of childhood abuse, 30 that the abuse had occurred for longer than a year, and 31 that the abuse had begun before the age of 10 years. To identify the most severely affected individuals a dichotomous indicator of major abuse and/or comorbid physical and sexual abuse was derived ( $N = 16/44$ ).

### Adolescent correlates of child abuse

Table 2 summarizes the association of retrospectively recalled abuse with a range of prospectively assessed adolescent family correlates. Findings showed that child abuse was more common in the context of other family adversity—study members reporting abuse had much-increased odds of having experienced a parental divorce or separation, parental discord, multiple long-term separations from their mother, and of their mother having been rated as having a psychiatric disorder. As expected, retrospective reports also showed strong associations between abuse and low parental care.

Table 2.

Childhood and adolescent correlates of child abuse

	No abuse (%) <sup>a</sup>	Abuse (%) <sup>a</sup>	OR [CI] <sup>a</sup>	<i>p</i>

	No abuse (%) <sup>a</sup>	Abuse (%) <sup>a</sup>	OR [CI] <sup>a</sup>	<i>p</i>
Prospectively ascertained				
Socio-economic factors				
Social class (semi- or unskilled)	33.1	32.1	1.04 [.4–3.1]	Ns
Rented accommodation	47.6	77.4	3.77 [1.1–13.4]	.04
Family size (4+ siblings)	23.2	27.6	1.26 [.4–4.0]	Ns
Family functioning				
Parental divorce/separation	15.3	41.5	3.91 [1.2–12.4]	.02
3+ separations from mother	11.3	47.0	6.97 [2.1–23.3]	.002
Parental discord	3.4	22.5	8.16 [1.7–40.3]	.01
Maternal psychopathology	8.9	30.7	4.56 [1.2–17.2]	.03
Service use (2+ in past year)	13.6	31.7	2.95 [.8–10.4]	.09
Family adversity index (2+)				
	12.9	55.8	8.51 [2.5–28.9]	.001
Retrospectively ascertained				
Parental care				
Low care—mother	21.1	58.8	5.33 [1.8–15.5]	.002
Low care—father	29.2	57.8	3.29 [1.1–9.8]	.03
Low care—both	10.3	44.4	6.81 [2.2–21.5]	.001

<sup>a</sup> Proportions and analyses weighted to account for study design and attrition.

Table 3 summarizes associations between reported abuse and assessments of adolescent psychopathology and peer relationships. Abused individuals were considerably more likely to have suffered from adolescent minor depression or anxiety disorder than non-abused study members, and had increased odds for adolescent suicidal ideation and marginally elevated rates of adolescent conduct disorder. Abuse was also significantly associated with dysfunctional adolescent peer relationships.

Table 3.

Reported child abuse and adolescent psychopathology and peer relationship problems

	No abuse (%) <sup>a</sup>	Abuse (%) <sup>a</sup>	OR [CI] <sup>a</sup>	<i>p</i>
Minor depression	3.7	37.4	15.5 [4.8–49.9]	<.001
Suicidal ideation	4.3	28.4	8.87 [2.3–34.7]	.002
Anxiety disorder	4.3	26.6	8.11 [2.2–29.8]	.002
CD (2 or more symptoms)	2.7	10.6	4.57 [.8–26.5]	.09
Peer relationship problems	19.8	44.3	3.22 [1.1–9.3]	.03

<sup>a</sup> Proportions and analyses weighted to account for study design and attrition; all analyses controlled for gender.

### Adult psychopathology

Table 4 displays rates of adult lifetime diagnoses of a range of disorders, together with odds ratios for each disorder (controlled for gender): 55.5% percent of study members who reported abuse

in childhood were diagnosed with at least one Axis-I psychiatric disorder in adulthood, compared with 36.2% of non-abused individuals. The estimated rate of every disorder was higher among the abused group, and statistical tests showed significant associations with abuse in most cases. In order to assess the extent to which abuse was related to adult psychiatric disorder independent of correlated family risk, analyses were repeated including the childhood adversity index as an additional covariate. Risks for recurrent MDD [OR = 5.79 (1.1–31.3),  $p = .04$ ], suicidal behavior [OR = 3.33 (.9–12.3),  $p = .07$ ], PTSD [OR = 5.68 (1.2–26.7),  $p = .03$ ], and substance dependence/abuse [OR = 7.75 (1.4–43.0),  $p = .02$ ] remained elevated among individuals reporting abuse after controlling for childhood family adversity.

Table 4.

Adult psychiatric disorder

	No abuse (%) <sup>a</sup>	Abuse (%) <sup>a</sup>	OR [CI] <sup>a</sup>	$p$
Major depressive disorder (MDD)	21.1	37.0	2.19 [.8–6.4]	.15
Recurrent MDD (3+ episodes)	3.3	20.3	7.80 [1.7–35.5]	<.01
Suicidality (planning or attempts)	7.4	23.9	4.17 [1.2–14.0]	.02
Suicide attempt	1.3	4.9	3.98 [1.4–11.3]	.01
Any anxiety disorder	21.4	39.6	2.41 [.8–7.2]	.12
PTSD	2.2	19.0	9.93 [1.6–59.9]	.01
Substance abuse/dependence	4.1	17.5	5.45 [1.1–26.8]	.04
Any DSM-IV psychiatric disorder	36.2	55.5	2.19 [.8–6.3]	.15

<sup>a</sup> Proportions and analyses weighted to account for study design and attrition; all analyses controlled for gender.

Further analyses examined whether abuse engendered a long-term risk for psychopathology by testing the association between abuse and adult recurrent MDD, controlled for adolescent minor depression, gender and family adversity. Abuse continued to be strongly associated with recurrent adult MDD [OR = 8.08 (1.2–54.1),  $p = .03$ ]. Similarly, [abuse was strongly associated with adult suicidal behavior, controlled for adolescent suicidal ideation](#) [OR = 4.81 (1.1–21.3),  $p = .04$ ].

### **Resilience in the abused group**

A significant proportion of the abused group reported no psychopathology over the 30 years of adult life prior to the interview [ $N = 14$ ; adjusted rate, 44.5% (95% CI = 19.3–69.7%)] and were classified here as “resilient.” To test whether problems had manifested themselves in other ways for these individuals, rates of personality functioning difficulties (total APFA score: 20+), relationship instability, crime and poor self-rated health were compared for the abused resilient subgroup and the subset of the non-abused comparison group who also reported no adult psychiatric problems. Some individuals in the abused resilient group showed evidence of isolated difficulties, but rates of difficulties were *lower* than for the comparison group (adjusted rates: personality difficulties: 3.1% vs. 9.8%; criminality: 6.1% vs. 19.3%; poor health: 3.1% vs. 7.8%; relationship instability: 7.7% vs. 44.9%). A logistic regression analysis compared rates of adult difficulty in one or more of these domains and found a significant

interaction between abuse status and adult psychiatric disorder ( $p < .01$ ), indicating significantly better psychosocial functioning among resilient abused study members than among non-abused individuals without psychiatric problems.

**Predictors of resilience to adult psychopathology (abused group only) :**

Analyses within the abused group tested the extent to which resilience to adult psychopathology was associated with a range of adolescent and adult risk and protective factors (see [Table 5](#) and [Table 6](#)). As outlined in the analysis strategy section, unweighted percentages are reported for these within-group comparisons, and statistical tests using logistic regression analyses were adjusted for the design of the study by controlling for screen status.

Table 5.

Correlates of resilience to adult psychopathology: characteristics of abuse

	<b>N w/o factor</b>	<b>% Resilient</b>	<b>N w/factor</b>	<b>% Resilient</b>
Major abuse <sup>b</sup>	35	37.1	9	11.1
Abuse within household	15	53.3	29	20.7
Comorbid sexual and physical abuse	32	37.5	12	16.7
Age at onset of abuse (<10 years)	11	45.5	31	25.8
Duration of abuse (>1 year)	10	50.0	30	20.0
Major or comorbid sexual/physical abuse	28	42.9	16	12.5

<sup>a</sup> Logistic regression analyses with screen status as covariate to control for study design.

<sup>b</sup> Hospitalization for physical injuries or attempted/actual sexual intercourse.

Table 6.

Correlates of resilience to adult psychopathology: individual characteristics, adolescent factors, adult relationships

	<b>N w/o factor</b>	<b>% Resilient</b>	<b>N w/factor</b>	
<b>Individual characteristics</b>				
Gender (male)	24	33.3	20	3
IQ > 100	15	46.7	28	2
Neuroticism (top quartile)	23	47.8	18	1
<b>Adolescent factors</b>				
Family adversity index (2+)	23	43.5	21	1
Maternal psychiatric disorder	22	31.8	12	2
Adolescent psychiatric disorder	20	50.0	23	1
Normal peer relationships	23	13.0	19	5
Either parent rated as caring (PBI—retrospective)	30	20.0	13	6
<b>Adult relationships</b>				
Supportive first partner	22	18.2	20	4
Stable relationship history	27	18.5	17	5
Friendships (good APFA rating)	17	11.8	27	4

<sup>a</sup> Logistic regression analyses with screen status as covariate to control for study design.

<sup>b</sup> Continuous IQ and EPQ neuroticism scale scores used as predictors in logistic regression analyses of resilience.

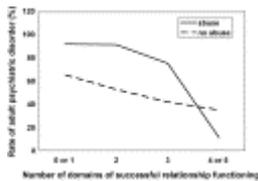
Table 5 shows that even with a stringent definition of abuse such as that used here, variations in severity, duration and context of abuse were associated with variations in the risk of subsequent psychopathology, with effects approaching statistical significance. As shown in Table 6, rates of resilience to adult psychopathology did not differ between men and women, or according to adolescent assessments of cognitive ability. Abused individuals with high neuroticism scores were significantly less likely to be resilient to adult psychopathology. Resilience was marginally associated with prospective accounts of family adversity, but not with maternal psychiatric disorder. There was, however, a considerable degree of continuity between psychiatric disorders assessed in adolescence and in adulthood, as shown by the significantly lower rates of resilience among those with an adolescent psychiatric disorder. Rates of resilience were also considerably higher among adults reporting the presence of at least one parent rated as very caring. Finally, peer relationships in adolescence, the quality of adult friendships and the stability of adult love relationships were all strongly related to resilience.

Although the potential for a complete multivariate analysis within the abused sample was limited by the statistical power of the study, we did examine whether the significant correlates of resilience identified in the preceding analyses remained independently associated with resilience when accounting for

ratings of the severity of abuse. A series of logistic regression analyses (adjusted for study design and abuse severity) showed that parental care ( $p = .07$ ), adolescent peer relationship quality ( $p = .04$ ), adolescent psychiatric disorder ( $p = .04$ ), and adult neuroticism ( $p = .06$ ) remained as significant or as near-significant predictors of adult psychiatric disorder/resilience.

### General or abuse-specific predictors of adult psychopathology

To test the hypothesis that the quality of interpersonal relationships would be more strongly associated with psychiatric outcomes in individuals who reported abuse, rates of adult psychiatric disorder/resilience were broken down by scores on the composite measure of relationship quality, separately for abused and non-abused subgroups. As shown in [Figure 1](#), scores on this index were more strongly associated with psychiatric outcomes in the abused group, and a logistic regression analysis (controlled for study design) showed a significant interaction between abuse status and relationship quality ( $p = .03$ ), together with a significant main effect of relationship functioning ( $p = .003$ ). Parallel tests for interactions between abuse status and other factors identified a near significant interaction with adolescent psychiatric disorder ( $p = .06$ , indicating a stronger association between adolescent and adult psychopathology for abused study members), but no interaction with gender ( $p > .2$ ), IQ ( $p > .1$ ) family adversity ( $p > .3$ ), maternal psychopathology ( $p > .9$ ), or neuroticism ( $p > .9$ ).



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Figure 1. Quality of relationships: a specific predictor of resilience/vulnerability following abuse. Rate of adult lifetime DSM-IV psychiatric disorder according to scores on the index of relationship functioning (number of “successful” domains: high parental care; normal adolescent peer relationships; good adult friendships; supportive first partner, stable relationship history).

## Discussion

### Main findings

The present findings come from a long-term follow-up of a community sample. They provide further evidence that child abuse is relatively common, and that it constitutes a serious risk for adult psychopathology. Risks for adult recurrent depression, suicidal behavior, PTSD, and substance abuse were elevated several-fold among abused individuals, even controlling for prospective indicators of other types of adolescent family adversity. However, not all individuals with abusive experiences showed such difficulties—a substantial proportion reported no psychiatric problems over the 30-year follow-up period. Further tests also showed positive adaptation in other domains such as health, interpersonal relationships and non-criminality in this non-disordered group, supporting the view that these individuals can be described as “resilient” in the face of abuse. While variations in adult psychiatric outcomes in both abused and non-abused groups were related to a variety of general risk factors (e.g., family adversity,

high neuroticism scores), the findings also highlighted two domains of particular relevance for understanding the risk of psychopathology in the context of abuse. First, even within the boundaries of the relatively severe definition of abuse used here, variations in the characteristics and severity of abuse were strongly related to better or worse outcomes in adulthood. Second, prospective and retrospective assessments of individuals' relationships with parents, friends and partners were potent predictors of adult resilience. **Finally, measures of relationship quality were independently associated with resilience when controlling for variations in abuse severity.**

### **Strengths and limitations**

Our findings derive from a population-based study, followed prospectively over a 30-year period. The Isle of Wight study contained rich and detailed information on important aspects of abused individuals' lives: characteristics and context of the abuse, adolescent family life, relationships with others, and adult psychopathology. Importantly, resilience was clearly defined. A stringent definition of abuse ensured that resilience really did reflect a positive outcome for people who had experienced serious childhood adversity. Adult psychopathology was assessed over a long time span and was defined to include a broad range of psychiatric disorders. Further tests ensured that those defined as resilient had not experienced an excess of difficulties in non-psychiatric domains.

Set against these strengths, it is also important to consider the limitations of this study. First, experiences of physical and sexual

abuse were reported retrospectively at adult follow-up. Prospective investigations show that while most documented instances of abuse are reported to interviewers, a substantial proportion is not. [Hardt and Rutter \(2004\)](#) reviewing the literature estimated a false negative rate of around 30%. At the same time, there is little satisfactory evidence on the likely rate of false positives—that is, how often childhood abuse is reported when it did not occur. We have no direct means of assessing the likely impact of under- or over-reporting of abuse for our findings, but we used the style of interviewing argued to be most likely to minimize under-reporting ([Brewin, Andrews, & Gotlib, 1993](#)). In addition, previous research suggests that in spite of the uncertainty regarding estimated rates of retrospectively reported abuse, associations of reported abuse with psychopathology appear robust and valid ([Brewin et al., 1993](#); [Fergusson, Horwood, & Woodward, 2000](#)).

Second, [the number of study members with interview data in the abused group was relatively small \( \$N = 44\$ \)](#). This limited the statistical power for comparisons of resilient and non-resilient subgroups of abused study members. While many differences were substantial and significant at the conventional alpha level of .05, the interpretation of comparisons showing no or only marginally significant differences is more difficult, given the risk of type II errors. In addition, the power to conduct multivariate analyses was limited. Nevertheless, we were able to show that associations between abuse and adult disorder held, even when adjusted for an index of childhood family adversity, and that protective influences associated with resilience within the abused group were not mere markers for less severe maltreatment.

Third, there were two important gaps in the present study. The study did not include assessments of individuals' cognitive styles and coping strategies. These are likely to be relevant for understanding resilience to psychopathology (e.g., [Cicchetti et al., 1993](#), [McGee et al., 2001](#) and [Rutter, 2006](#)). Second, heritable factors have been shown to be important predictors of resilience in the context of adverse childhood experience (e.g., [Caspi et al., 2002](#) and [Rutter, 2003](#)), but these are not considered here.

### **Extent of resilience to adult psychopathology**

The extent of resilience to adult psychopathology identified here is considerable given the severity of the defined risk and the length of the follow-up period. More than one in three individuals reporting childhood abuse (a weighted rate of 44%) reported no psychiatric problems in adulthood, and also demonstrated positive adaptation in other domains. This level of resilience is compatible with estimates from other studies in the field (e.g., [McGloin & Widom, 2001](#)).

### **Predictors of resilience to adult psychopathology**

Comparisons of abused individuals with and without a history of adult psychiatric disorder focused on several important domains: individual characteristics, adolescent adversity and psychosocial functioning, and adult relationships.

#### **Individual characteristics**

High neuroticism scores distinguished resilient and non-resilient abused individuals, but there were no differences in resilience

according to gender or cognitive ability. In relation to gender, the current findings concurred with other studies that have shown that child abuse is a potent risk factor for adult psychiatric disorder for both males and females (e.g., [Lynskey & Fergusson, 1997](#); [McGloin & Widom, 2001](#)). Although previous studies have shown cognitive abilities to be important when resilience is assessed in terms of educational achievements, our findings suggest that personality characteristics may be more salient in relation to psychopathology.

### **Adolescent family adversity**

Child abuse was strongly associated with an excess of other family adversities, including parental divorce and discord, maternal psychiatric disorder, and childhood separations from parents. While these adversities are likely to have contributed in part to the difficulties faced by abused individuals in adolescence and adulthood, abuse nevertheless showed strong independent associations with psychopathology over and above these effects. Although differences in family adversity between abused resilient and non-resilient individuals approached statistical significance, adolescent family adversity predicted adult psychopathology as strongly among non-abused individuals, indicating that these markers of family adversity functioned as general predictors of psychopathology rather than as specific predictors of risk or resilience in the face of abuse.

### **Adolescent psychiatric impairment**

More than half of study members reporting childhood abuse had suffered significant psychiatric problems in adolescence. Odds for depression, anxiety and suicidality were particularly elevated. The presence of adolescent psychiatric disorder clearly distinguished between resilient and non-resilient subgroups, indicating strong continuity of difficulties into adulthood among individuals who had been abused. Furthermore, a significant interaction between abuse status and adolescent psychiatric disorder provided evidence that this continuity was more marked for abused than for non-abused individuals. Finally, risks for recurrent episodes of adult MDD and suicidality were particularly strongly elevated among abused individuals (see [Table 4](#)). Together, these findings suggest that child abuse is not only linked to adult psychiatric disorder per se, but also to the severity and persistence of disorder across the lifespan.

### **Interpersonal relationships**

In line with a variety of other studies, **the findings of this study provided evidence that child abuse is linked with difficulties in interpersonal relationships** (e.g., [Bolger, Patterson, & Kupersmidt, 1998](#); [Dodge, Pettit, & Bates, 1994](#)). **Almost half of those reporting abuse in adulthood had been rated as showing significant abnormalities in interactions with peers in adolescence. At the same time, peer relationships in adolescence emerged as one of the strongest predictors of resilience within the abused group. These findings provide further support for the view that impairments in interpersonal relationships are of crucial importance for understanding the effects of child abuse on mental health outcomes** In line with a

variety of other studies, **the findings of this study provided evidence that child abuse is linked with difficulties in interpersonal relationships** (e.g., [Bolger, Patterson, & Kupersmidt, 1998](#); [Dodge, Pettit, & Bates, 1994](#)). **Almost half of those reporting abuse in adulthood had been rated as showing significant abnormalities in interactions with peers in adolescence. At the same time, peer relationships in adolescence emerged as one of the strongest predictors of resilience within the abused group. These findings provide further support for the view that impairments in interpersonal relationships are of crucial importance for understanding the effects of child abuse on mental health outcomes** (e.g., [Bolger et al., 1998](#); [Fergusson & Lynskey, 1997](#)).

A number of authors have argued that vulnerability and resilience following abuse should be viewed within a developmental and organizational perspective. For example, [Egeland et al. \(1993\)](#) argued that “resilience is a capacity that develops over time in the context of a supportive environment.” Attachment theory ([Bowlby, 1969](#)) and social information processing models (e.g., [Dodge, Bates, & Pettit, 1990](#)) stress the importance of a cyclical process in which a child develops models of relationships on the basis of early experiences with parents and significant others. Children who have experienced abuse are less likely to bring to a relationship positive expectations or interpersonal strategies ([Dodge et al., 1994](#)), but instead may see others as less trustworthy and predictable, and relationships as a potential source of conflict rather than a source of support and enjoyment (e.g., [Bolger et al., 1998](#) and [Dodge et al., 1990](#)). From these perspectives resilience

is not seen as good fortune arising from chance encounters with a supportive friend, peer or partner, but rather as an ongoing process of developing the competencies necessary to form, maintain and benefit from supportive interpersonal relationships. The findings from this study are consistent with this view. Importantly, results for the composite index of relationship functioning suggested that success in just one or two domains was not sufficient for engendering resilience (see [Figure 1](#)). Instead, it was those individuals with good relationship experiences across different domains and across childhood, adolescence and adulthood who were particularly likely to demonstrate resilience.

Our design did not allow us to test the direction of these effects. It is possible, and indeed likely, that psychiatric problems will undermine individuals' relationship competence (e.g., [Rao et al., 1995](#)), just as chronic problems in interpersonal relationships may elevate the risk of future mental illness (e.g., [Brown, Bifulco, & Andrews, 1990](#)). Our findings suggest that understanding the processes whereby relationship competencies are developed and maintained constitutes an important goal for future research on resilience in individuals exposed to abusive experiences, and may be a core target for clinical interventions.

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