Relationship between parental psychopathology, parenting strategies and child mental health: Findings from the GB national study

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ABSTRACT

Background: Parental and child psychiatric disorders have been found to be associated, and this association can be mediated by other psychosocial variables, including parenting attitudes and strategies. As most previous studies included clinical samples, the purpose of this study was to establish the relationship between parental psychopathology and parenting strategies with child psychiatric disorders in a national survey population.

Methods: The sample included 10,438 children of 5-15 years and their parents, from representative UK households. Families were assessed on child psychiatric diagnosis, parental psychopathology, family functioning, and socioeconomic status. Parenting strategies included using rewards, physical and non-physical punishments towards their child.

Findings: Parental psychopathology scores (OR 3.99, 95% CI 3.13-5.09) and non-physical punishment (OR 1.50, 95% CI 1.27-1.76) were associated with child psychiatric disorders. This association was particularly prominent among children with conduct disorders: parental psychopathology scores (OR 3.13, 95% CI 2.28-4.30) and non-physical punishment (OR 3.19, 95% CI 2.55-3.97). Absence of child psychopathology was associated with a combination of rewarding and non-punitive parenting strategies.

Conclusions: Although parents in the general population may be using less physical strategies than in the past, non-physical punishment is strongly related to mental health problems in children. Enhancement of positive parenting through universal and targeted interventions is an important preventive strategy.

Key words: child, mental health, parenting, psychiatric disorder

Introduction

The association between parental and child psychiatric disorders is well established [18, 25]. The psychological and social development of children of mentally ill parents is at high risk of a range of emotional, behavioural, cognitive and social difficulties [15, 31]. Furthermore, children of mentally ill parents are more likely to lack adequate support, care provision and access to services [7, 19, 21].

This relationship between parental and child psychopathology has been found to be confounded by family discord [26] and socioeconomic adversity [4]. Less is known on the relationship between adult psychopathology and parenting attitudes or strategies, and how these impact on children's mental health [2]. Some studies established a mediating role of negative parenting attitudes [12], which themselves were predicted by previous life events and adversities [13, 24]. In a sample of mentally ill mothers, permissive parenting style was related to higher symptoms of adolescent depression and anxiety, while a positive and directive parenting style was related to fewer symptoms of depression [22]. Parents' perceptions of reasons involved included problems with diagnosis and treatment, stigma, interpersonal difficulties, social supports, strain of parenthood, and custody issues [1, 23]. Children's own perceptions and attributions of parents' symptoms, behaviours and illness are also contributing variables [28], as well as their coping strategies in processing and responding to adult symptoms of mental illness [14].

Several previous studies were confined to clinical samples and were based on information from adults [20, 21]. An analysis of the 1970 British national cohort accounted for these methodological constraints, and found that maternal authoritarian

attitudes predicted conduct problems in children, independently of socio-economic status and maternal psychopathology [30]. In a retrospective descriptive survey, adults who reported having been slapped or spanked as children in Canada had a significantly higher prevalence of psychiatric disorders than those who had not [16].

Previous research thus indicates the importance of studying the impact of parenting on children's mental health. As child rearing attitudes can reflect societal changes, it is important that new information reflects such current family and parent characteristics. Therefore, the rationale for this study was to investigate the association between parental psychopathology, parenting strategies and child mental health in a representative UK sample of families. An advantage over previous cohorts was the use of detailed diagnostic measures collected from different informants, including young people themselves, and the selection of different age groups form childhood to adolescence. The purpose of this study was to establish the relationship of parental psychopathology and parenting strategies with child psychiatric disorders in a national survey population.

Method

It was hypothesised that parental psychopathology would be associated with the main types of child psychiatric disorders, and that this association would be significantly mediated by punitive parenting strategies.

Sample

The main aspects of the study design are summarised here, with a more detailed account of the survey methodology available from Meltzer et al. [17]. As most children in Great Britain are entitled to benefits, i.e. financial contributions/support from the state (unless placed with a foster family or in a residential unit), the GB Child Benefit Register centralised computerised records were used as the sampling frame of all children between 5-15 years living in England, Wales and Scotland. Of the 8,265 postal sectors of the country, 475 sectors were selected at random, with a probability proportional to the size of the sector. A letter was sent to the parents/carers of 14,250 children, or 30 children in each of the 475 postal sectors. There were 931 (6.5%) refusals, and 790 (5.5%) families were excluded from the study, mainly those who had moved and could not be traced (629 or 4.4%), as well as children in care or outside the age range. Of the 12,529 eligible children, information from interviews was collected on 10,438 (83%) children. The study received research ethics approval, and all procedures were in accordance with ethical standards.

Measures

The *Development and Well-Being Assessment* (DAWBA) [11] was used to establish psychiatric diagnoses based on both DSM-IV and ICD-10 diagnostic criteria for research. The assessment was administered by trained interviewers to parents. The

comparable DAWBA adolescent interviews were only administered to the 11-15 year olds. Questions on common psychiatric symptoms and their impact were followed by open-ended questions and supplementary prompts. A teacher questionnaire on common psychiatric symptoms and their impact was also administered, and data from all informants were combined to produce computer-generated diagnoses. All interview data were subsequently reviewed by experienced clinicians who confirmed or overturned the computer-generated diagnoses. The main types of disorders are reported in this paper, i.e. conduct, emotional and hyperkinetic disorders.

The *General Health Questionnaire* (GHQ) [10] was used to assess common mental health problems (depression, anxiety, somatic problems, or social dysfunction) among parents. Mothers were available for the interviews in over 95% of the subjects. The GHQ is a standardised and widely used 12-item self-report instrument, with established cut-off scores indicating psychiatric morbidity.

Parenting strategies: In order to examine how parents reward their children for good behaviours and punish them for negative behaviours, parents were asked to rate the frequency with which they use three types of rewards and six types of punishments (non-physical and physical). Parents reported whether they 'never', 'seldom', 'sometimes', or 'frequently' used each one. These were grouped in two categories, 'never/seldom using this strategy' and 'sometimes/frequently using this strategy'. Rewards strategies included, giving encouragement or praise; giving treats such as extra pocket money, staying up late or a special outing; and giving the child favourite objects (such as toys or sweets). Punishment regimes (non-physical) included, sending child to his/her room; grounding or keeping him/her in; and shouting or

yelling at him/her. And physical punishments were, smacking him/her; hitting him/her with a strap or something else; shaking him/her. Variables were analysed both as individual items and total rewards or punishments scores.

The *General Functioning Scale* of the *McMasters Family Assessment Device* (FAD) [8] was completed by parents. This assesses the level of the family discord and includes 12 items, scored on a 1-4 scale, with a total score 0-48, with family functioning being classified as 'healthy' or 'unhealthy'.
Sociodemographic data was collected from parents.

Statistical analysis

Exploratory analysis: Relationship between parenting items and child psychiatric disorders

The association between individual risk factors (as established by previous research) and each of the main categories of child psychiatric disorders (dependent variable) was investigated by univariate logistic regression analyses. Those variables that were significantly associated with a diagnostic category were entered in a multivariate model, with parenting items as covariates.

Primary analysis: Relationship between rewarding or punitive categories and child psychiatric disorders

Parenting items were then grouped in three categories, reward, physical punishment and non-physical punishment. Each category was dichotomised into 'high' if a parent used two out of the three strategies in this category, and 'low' if they used one strategy, i.e. 'high/low reward, high/low physical punishment, and high/low non-

physical punishment'. The multivariate models were repeated, with parenting categories as the covariates.

Secondary analysis: Relationship between combined parenting categories and child psychiatric disorders

As parents may concurrently use reward and punishment (physical/non-physical), eight parenting 'types' were established for all possible combinations of the parenting categories (combination of high/low severity and rewarding/physically punitive/non-physically punitive categories), and were entered in multivariate models.

Results

The prevalence for any psychiatric disorder was 9.5%[22]. Prevalence rates of the main disorders were, conduct disorders 5.3%, emotional disorders 4.3%, and hyperkinetic disorders 1.4%.

Primary analysis: Relationship between rewarding or punitive categories and child psychiatric disorders

Parental psychiatric morbidity (GHQ scores within the clinical range 9-12) was associated with most types of disorder (separate univariate logistic regression models), i.e.: any psychiatric disorder Odds Ratio 5.55, 95% CI 4.46-6.92, p=0.001; conduct disorder OR 5.17, 95% CI 3.91-6.85; emotional disorder OR 6.35, 95% CI 4.80-8.39, p=0.001. Hyperkinetic disorder was predicted by lower GHQ scores (6-8): OR 3.03, 95% CI 1.88-4.90, p=0.001. As a number of sociodemographic variables (child's gender, child's age, family income, family type, and family functioning score) were also independently associated with child psychiatric disorders in series of

univariate logistic regression analyses, these variables were included in the next stage of multivariate logistic regression as potential confounding factors (the results of univariate tests are not reported in detail).

A series of multivariate analyses were subsequently conducted, with parental psychiatric (GHQ) ratings as the independent variable, and parenting strategies (treated as individual items), family functioning (FAD) type and sociodemographic variables as the covariates. A 'best' multivariate model was established for each child diagnostic category (according to R-squared score and level of significance).

The best multivariate model for any psychiatric disorder (Table 1) included the variables of parental psychiatric morbidity (GHQ), grounding the child (depriving of favourite outings or habits), sending the child to his/her room, age 11-15 years, male gender of child, low family income, family type of lone or cohabiting parent, and unhealthy family functioning (model significant $p<0.001$; Nagelkerle R-squared score 0.132).

Insert **Table 1** about here

The same variables, with the addition of shouting and smacking, were significantly associated with conduct disorder (Table 2 - model significant $p<0.001$; Nagelkerle R-squared score 0.178).

Insert **Table 2** about here

Hyperkinetic disorder was associated with parental GHQ scores 6-8 (OR 2.51, 95% CI 1.53-4.11, p=0.001), sending child to their room (OR 2.01, 95% CI 1.42-2.84, p=0.001), male gender (OR 5.22, 95% CI 3.27-8.34, p=0.001), and unhealthy family functioning (OR 2.00, 95% CI 1.38-2.89, p=0.001). The model was significant at p<0.001; Nagelkerke R-squared 0.092.

Emotional disorder was associated with parental GHQ scores 6-8 (OR 3.08, 95% CI 2.28-4.15, p=0.001) and scores 9-12 (OR 5.05, 95% CI 3.74-6.83, p=0.001), grounding child (OR 1.30, 95% CI 1.05-1.60, p=0.015), 11-15 years age (OR 1.59, 95% CI 1.29-1.95, p=0.001), low weekly family income (<£199) (OR 1.96, 95% CI 1.46-2.95, p=0.001), and unhealthy family functioning (OR 1.45, 95% CI 1.15-1.83, p=0.001). The model was significant at p<0.001; Nagelkerke R-squared 0.091.

Primary analysis: Relationship between rewarding or punitive categories and child psychiatric disorders

High use of non-physical punishment was significantly associated with all disorders, particularly conduct disorders. The best models for any psychiatric diagnosis (high non-physical punishment OR 1.50, 95% CI 1.27-1.76, p=0.001; R square 0.132) and conduct disorder (high non-physical punishment OR 3.18, 95% CI 2.55-3.97, p=0.001; R square 0.171) are presented in tables 3 and 4.

Insert **Tables 3 and 4** about here

The variables associated with hyperkinetic disorder, were: parental GHQ score 6-8, OR 2.49, 95% CI 1.52-4.09, p=0.001; high non-physical punishment OR 2.16, 95%

CI 1.50-3.11, p=0.001; male gender OR 5.11, 95% CI 3.19-8.16, p=0.001, unhealthy type of family functioning OR 1.89, 95% CI 1.30-2.75, p=0.001 (model p<0.001; Nagelkerke R square 0.091).

The variables associated with emotional disorder, were: parental GHQ score 6-8, OR 3.09, 95% CI 2.29-4.17, p=0.001; parental GHQ score 9-12 OR 5.08, 95% CI 3.75-6.86, p=0.001; high non-physical punishment OR 1.36, 95% CI 1.11-1.67, p=0.003; age 11-15 years OR 1.65, 95% CI 1.33-2.01; p=0.001; low income OR 1.99, 95% CI 1.48-2.68, p=0.001; and unhealthy type of family functioning OR 1.44, 95% CI 1.14-1.81, p=0.002 (model p<0.001; Nagelkerke R square 0.091).

Secondary analysis: Relationship between combined parenting categories and child psychiatric disorders

In this tentative analysis, the concurrent use of rewards and punishments was associated with the presence of psychiatric disorders: high reward / high non-physical punishment / low physical punishment (OR 2.00, 95% CI 1.40-2.87, p<0.001); high reward / high non-physical punishment / high physical punishment (OR 4.42, 95% CI 1.77-11.04, p=0.001). Interestingly, absence of any psychiatric disorder was significantly associated with the combination of high reward / low non-physical / low physical punishment (OR 4.73, 95% CI 2.02-11.12, p=0.001).

DISCUSSION

This general population study established an association between parental psychopathology and use of punitive parenting strategies with child psychiatric disorders, particularly conduct disorders. This relationship was previously established

in studies with high risk families, such as those with mentally ill parents [12]. The emerging evidence indicates that the three variables are inter-related, and that the underlying mechanisms are more complex than a linear relationship between parental and child disorders, with other confounding psychosocial and child-related factors also involved [9, 16].

The study has a number of limitations, mainly the lack of observational parenting instruments (which may have detected higher rates of physical punishment strategies) and adult psychiatric diagnostic interviews. Another limitation was the failure to establish severity of psychopathology and parenting strategies in both parents, but attempts to obtain data directly from fathers in large community samples such as ours are liable to fail, with low response rates and an unrepresentative sample of fathers. Large-scale epidemiological studies of this kind inevitably can not use detailed measurements and are constrained by their cross-sectional design; however, they can test hypotheses at a population level generated by previous smaller-scale research in a statistically more powerful way. A longitudinal design would have enabled the investigation of the predictive value of the key variables, including the potential reverse or contributing effect of child behaviour on parent-related outcomes. For example, it maybe that some parents who find it difficult to deal with children's behaviours develop more anxiety and depressive symptoms, consequently use more punitive strategies, not being able to break this escalating family pattern. Such associations should therefore be interpreted with caution [20]. Future research could investigate the impact of parenting types in more detail, as well as the relationship between attachment and later parenting types among high risk parents such as those with mental health problems.

The findings highlight societal changes in parenting attitudes towards punishment, with the predominant use of non-physical strategies. However, the impact of non-physical punishment is not necessarily lesser. The reverse finding is particularly important in considering implications for prevention and treatment. The combination of using rewarding strategies, without either physical or non-physical punishment, was found to be strongly associated with the absence of mental health problems in children.

Although beyond the direct remit of this study, there are implications for different levels of parent education, support and specialist intervention [29]. These should aim to enhance positive parenting such as the use of rewarding strategies, and reduce punitive and rejecting attitudes towards children. Programmes could respectively target all parents, families at risk, and parents with established mental illness, preferably on a service continuum, depending on families' level of need. Such a comprehensive parenting programme has been described and evaluated in Australia, which encompasses prevention, secondary and tertiary treatment, with families moving flexibly between different programme components, as appropriate [27]. Parents with mental illness may require more intensive and specialist interventions [5]. There is also a requirement for closer links between child and adult mental health services [3, 19].

In conclusion, negative parenting attitudes, involving physical and non-physical punishment, were associated with both parental and child mental health problems, and were mediated by other family and socioeconomic factors, in a national survey population. Parenting styles combining the use of rewards and the lack of punishment

were strongly associated with absence of child psychiatric disorders. The findings have implications for a range of health and welfare agencies and professionals planning universal and targeted preventive programmes, as well as secondary interventions for children, young people and their families.

ACKNOWLEDGEMENTS

We are grateful to all children, parents and teachers who took part in this study. This was funded by the British Department of Health and carried out by the Office for National Statistics.

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Table 1

Multivariate model of variables predicting any child psychiatric disorder (all parenting strategies items entered as covariates)

Model = p<.001. Nagelkerke R square = .132.

VARIABLE	CATEGORY	ODDS RATIO	95% CONFIDENCE INTERVALS		SIGNIFICANCE LEVEL
			Low	High	
Parental GHQ p<.001 (Reference category = GHQ score 0-2)	GHQ score 3-5	1.650	1.351	2.015	.001
	GHQ score 6-8	2.659	2.123	3.329	.001
	GHQ score 9-12	3.999	3.137	5.099	.001
Punishment by sending to room (reference category = 'never/seldom')	Sometimes/ frequently	1.500	1.276	1.763	.001
Punishment by grounding (reference category = 'never/seldom')	Sometimes/ frequently	1.547	1.315	1.820	.001
Gender (reference category = female)	Male	1.466	1.263	1.702	.001
Age (reference category = 5-10yrs)	11-15yrs	1.336	1.150	1.551	.001
Family type p<.001 (reference category = married parents)	Cohabiting	1.345	1.030	1.758	.030
	Lone	1.461	1.196	1.784	.001
Family functioning (reference category = healthy family functioning)	Unhealthy	1.725	1.466	2.031	.001
Weekly household income p<.001 (reference category = £0-199)	£200-399	.864	.705	1.060	.161
	£400-599	.581	.448	.754	.001
	£600+	.571	.442	.737	.001

Table 2
Multivariate model of variables predicting conduct disorder
(all parenting strategies items entered as covariates)
Model = p<.001. Nagelkerke R square = .178.

VARIABLE	CATEGORY	ODDS RATIO	95% CONFIDENCE INTERVALS		SIGNIFICANCE LEVEL
			Low	High	
Parental GHQ p<.001 (Reference category = GHQ score 0-2)	GHQ score 3-5	1.730	1.334	2.243	.001
	GHQ score 6-8	1.958	1.435	2.671	.001
	GHQ score 9-12	3.095	2.249	4.260	.001
Punishment by sending to room (reference category = 'never/seldom')	Sometimes/ frequently	1.577	1.263	1.969	.001
Punishment by grounding (reference category = 'never/seldom')	Sometimes/ frequently	2.025	1.629	2.518	.001
Punishment by shouting (reference category = 'never/seldom')	Sometimes/ frequently	1.892	1.376	2.602	.001
Punishment by smacking (reference category = 'never/seldom')	Sometimes/ frequently	1.450	1.109	1.895	.007
Gender (reference category = female)	Male	2.216	1.793	2.740	.001
Age (reference category = 5-10yrs)	11-15yrs	1.341	1.093	1.646	.005
Family type p<.001 (reference category = married parents)	Cohabiting	1.818	1.301	2.541	.001
	Lone	1.568	1.203	2.044	.001
Family functioning (reference category = healthy family functioning)	Unhealthy	2.132	1.727	2.632	.001
Weekly household income p<.001 (reference category = £0-199)	£200-399	.806	.618	1.052	.112
	£400-599	.564	.397	.801	.001
	£600+	.432	.299	.625	.001

Table 3
Multivariate model of variables predicting any psychiatric disorder (using high/low parenting rewards and punishments categories)
Model = p<.001. Nagelkerke R square = .132.

VARIABLE	CATEGORY	ODDS RATIO	95% CONFIDENCE INTERVALS Low	High	SIGNIFICANCE LEVEL
Parental GHQ p<.001 (Reference category = GHQ score 0-2)	GHQ score 3-5	1.644	1.347	2.008	.001
	GHQ score 6-8	2.651	2.118	3.319	.001
	GHQ score 9-12	3.992	3.132	5.088	.001
Non-physical punishment (reference category = low)	High	1.500	1.276	1.763	.001
Gender (reference category = female)	Male	2.004	1.723	2.330	.001
Age (reference category = 5-10yrs)	11-15yrs	1.356	1.170	1.571	.001
Family type p<.001 (reference category = married parents)	Cohabiting	1.373	1.051	1.794	.020
	Lone	1.477	1.210	1.804	.001
Family functioning (reference category = healthy family functioning)	Unhealthy	1.708	1.452	2.011	.001
Weekly household income p<.001 (reference category = £0-199)	£200-399	.858	.700	1.052	.141
	£400-599	.569	.439	.738	.001
	£600+	.547	.424	.706	.001

Table 4
Multivariate model of variables predicting conduct disorder
(using high/low parenting rewards and punishments categories)
Model = p<.001. Nagelkerke R square = .171

VARIABLE	CATEGORY	ODDS RATIO	95% CONFIDENCE INTERVALS Low	High	SIGNIFICANCE LEVEL
Parental GHQ p<.001 (Reference category = GHQ score 0-2)	GHQ score 3-5	1.749	1.351	2.264	.001
	GHQ score 6-8	2.004	1.471	2.730	.001
	GHQ score 9-12	3.135	2.283	4.304	.001
Non-physical punishment (reference category = low)	High	3.185	2.555	3.971	.001
Gender (reference category = female)	Male	2.317	1.876	2.862	.001
Age (reference category = 5-10yrs)	11-15yrs	1.303	1.069	1.589	.009
Family type p<.001 (reference category = married parents)	Cohabiting	1.851	1.327	2.583	.001
	Lone	1.614	1.240	2.099	.001
Family functioning (reference category = healthy family functioning)	Unhealthy	2.210	1.793	2.723	.001
Weekly household income p<.001 (reference category = £0-199)	£200-399	.805	.615	1.043	.100
	£400-599	.545	.384	.772	.001
	£600+	.403	.280	.581	.001