

Socio-Economic, Parental-Health, and Family Functioning Differentials in Children's Emotional and Behavioral Characteristics: Comparison between Children with Disability Families and Children with Non-Disability Families

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Abstract : Internalizing and externalizing behavior problems may be more common in children with disability families but rarely known is the magnitude of the problem and the risk factors compared to those in children with non-disability families. This study was undertaken to examine if socio-economic factors, parental health, and family functioning affect children's internalizing and externalizing behaviors differently between two comparison groups. The research literature on childhood behaviors was briefly reviewed. The data was derived from the Mental Health of Children and Young People in Great Britain, 2004. Regression analyses provide evidence that the family type, economic status, and income level are uniquely associated with an increased risks of internalizing or externalizing behavior problems in children with disability families, whereas sex, age, family size, parental health, and family functioning factors have similar impacts on the child's internalizing or externalizing variances between two groups. Intervention is desirable to address the concerns influencing internalizing and externalizing performances among children with disability or non-disability families.

Key Words : Internalizing and externalizing behavior problems, socio-economic parental health-family functioning factors, children with disability families

I. Introduction

Emotional problems are recognized as contributing significantly to psychological morbidity and negative behavioral development throughout the life cycle of children (Bethell *et al.*, 2005). Conduct disorder is one of the most common child psychiatric disorders and it appears to be more common in boys than in girls (U.S. Department of Health and Human Services, 1999). Children with conduct disorder exhibit aggressive, antisocial, psychosocial behavior problems and may also increase the possibility of experiencing antisocial

personality disorder in later life (Zoccolillo *et al.*, 1992). Several studies provide evidence that large family size, parental marital discord, familial malfunctioning, poverty, neglected parenting, and parental mental illness are prime factors for the establishment of early or late onset of childhood conduct disorder (Chitsabesan *et al.*, 2006; Cummings *et al.*, 2006; Davies *et al.*, 2006; Dunn *et al.*, 2006; Commings *et al.*, 2004; Cohen *et al.* 2002; Crockenberg and Langrock, 2001; McLanahan and Sandefur, 1994; Simons *et al.*, 1994; Wilson, 1987).

It has been found that overcrowding (large family size) has negative impacts on parenting environments

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and exacerbate the quality interaction between parent and child, especially in transition to adulthood (Reinherz *et al.*, 2003). Under these negative aspects of the familial environment, later-born children are more likely to be at risk for internalizing behavior problems such as depression, anxiety, and lower esteem than their peers (Ibid.)

Marital conflicts and eventual experiences of growing up in single parent or cohabitating households are long-term, stressful processes and considered to negatively affect emotion and behavior in children with marital problems (Cummings *et al.*, 2006; Dunn *et al.*, 2006). The child's maladaptive responding to non-intact parental environment, if the child's adjustment is latent, may promote negative emotional and behavioral outcomes and could limit significant developmental goals.

Comings *et al.* (2004); Crockenberg and Langrock (2001) have provided evidence that the experience of family malfunctioning (or low levels of family cohesion) is associated with an increased likelihood of having internalizing or externalizing behavior problems of young children. When the family relationship is functioning well, it will serve as an emotional security, reducing the child's interpersonal discord with others (Davies and Cummings, 1998) and the child's subsequent externalizing behaviors problems.

According to the culture of poverty, long histories of poverty experience deepen lives of helplessness and hopelessness (Wilson, 1987). Repeated lone parent difficulties and exposure to financial hardship may weaken supportive parenting environment and may foster negative representation of emotions and behaviors in the context of interrelationships (Simons *et al.*, 1994).

A recent study also suggests that the onset and maintenance of children's risk behavior are influenced by living with parents with mental health problems (Hirshfeld-Becker *et al.*, 2004). Parents with mental health problems may be experiencing financial hardship and weak parenting ability due to lower levels of occupational status and subsequent stressors. These

negative factors contribute to the onset of adverse behaviors.

Few studies have examined socio-economic, parental health, and family functioning together for emotional and behavioral problems among children with disability families compared to children with non-disability families, although associations with poverty, growing up in single parent households, and parenting style in non-disability families have been investigated in many ways (Chitsabesan *et al.*, 2006; Davies *et al.*, 2006; Cohen *et al.*, 2002; McLanahan and Sandefur, 1994; Simons *et al.*, 1994). What is not well known the magnitude of the risk of emotional and behavioral problems in relation to gender, age, family type, income, employment status, and family functioning among children with disability families. As the elevated risk in emotional and behavioral problems among children with poor, non-intact, unhealthy, malfunctioning families is well established, comparative study of the risks of emotional and behavioral problems among children with disability families requires urgent investigation.

In light of the critical need to identify risk factors that influence children experience emotional and behavioral problems, the following research question was explored: How socio-economic, parental health, and family functioning factors affect emotional and behavioral characteristics differently between children with disability families and children with non-disability families?

II. Research Methods

1. Data

The study used *Mental Health of Children and Young people in Great Britain, 2004* which is a longitudinal data set targeted to examine the prevalence and any changes of mental disorders among children and young people aged 5-16 between 1999 and 2004. The current study used 2004 data to investigate associations between socio-economic, parental health, family functioning, and

mental behavioral characteristics. The data population consisted of total 18,415 children and young people. It was found that 17,413 (94.6%) were drawn from children and young people with no disability families and 1,002 (5.4%) survey participants were from disability households which receive disability living/attendance allowance.

2. Independent and dependent variables

1) Independent variables

Based on the previous literature reviews and the purpose of this research, the current study included 7 socio-economic factors, 2 parental general & mental health factors, and 1 family functioning factor for the purpose of study. Two standard instruments FAD (General Functioning Scale of the MacMaster Family Activity Device) and GHQ (General Health Questionnaire)

(Goldberg and Williams, 1998) were used to test the levels of family functioning and the mental health of parents. General Functioning Scale of the MacMaster Family Activity Device (FAD) was applied to examine family functioning. It consists of 12 statements and parents are requested to rate on a scale of four: strongly agree, agree, disagree and strongly disagree. The scale has shown high reliability scores with internal consistency and validity. The GHQ (General Health Questionnaire) was also administered to assess the mental health status of young people's parents: mostly mothers were asked to answer 12 questions about their own mental health which were designed to examine non-psychotic psychiatric disorders. Each item is 1 (Yes) or 0 (No) and total scores are ranged from no problem (0) to severe problem (12). The details are shown on <Table 1>.

Further, DAWBA (the Development and Well-Being

<Table 1> Independent and dependent variables selected for this study

	Variables	Value and Label
Socio-economic factors	Sex	1 = male, 2 = female
	Age	
	Number of people in household	
	Family type	1 = Married, 2 = Cohabiting, 3 = Lone parent
De facto marital status		1 = Married, 2 = Cohabiting, 3 = Single, 4 = Widowed, 5 = Divorced, 6 = Separated, 7 = Same sex couple
	Family's economic status	1 = Both parent working, 2 = one parent working, 3 = Neither parent working
Gross income (£)		1 = Less than 1000, 2 = 1,000 to 1,999, 3 = 2,000 to 2,999, 4 = 3,000 to 3,999, 5 = 4,000 to 4,999, 6 = 5,000 to 5,999, 7 = 6,000 to 6,999, 8 = 7,000 to 7,999, 9 = 8,000 to 8,999, 10 = 9,000 to 9,999, 11 = 10,000 to 10,999, 12 = 11,000 to 11,999, 13 = 12,000 to 12,999, 14 = 13,000 to 13,999, 15 = 14,000 to 14,999, 16 = 15,000 to 17,499, 17 = 17,500 to 19,999, 18 = 20,000 to 24,999, 19 = 25,000 to 29,999, 20 = 30,000 to 39,999, 21 = 40,000 or more
Parent's general & mental health factors	Parent: General health Mental health of parent: General Health Questionnaire Score	1 = very good, 2 = good, 3 = fair, 4 = bad, 5 = very bad 1 = having mental health problem, 0 = no mental health problem
Family functioning factors	Family functioning score	Lowest 12 – Highest 45
Internalizing & externalizing behavior problems (clinical diagnosis)	Emotional diagnosis	Whether the child has had clinical-based emotional disorder diagnosis: 0 = No disorder, 1 = Disorder present
	Behavioral diagnosis	Whether the child has had clinical-based behavioral disorder diagnosis: 0 = No disorder, 1 = Disorder present

Assessment) was also used to assess the mental and behavior characteristics in children. DAWBA developed by Goodman *et al.* (2000) is a package of questionnaires, interviews, and rating techniques designed to identify whether the child meets the criteria for common operationalized ICD/International Classification of Diseases -10 and DSM-IV psychiatric diagnoses such as anxiety, depression, PTSD (post traumatic stress disorder), and/or obsessive-compulsive behavioral symptoms (conduct and hyperactivity symptoms) for 5-16-year-old children. DAWBA combines the features of structured and semi-structured interviews, composing 21 questions relating to a number of common emotional and behavioral disorders in children. These computer-generated summary sheets and all interview data subsequently were reviewed by experienced clinicians, who confirm or overturn the computer-generated diagnoses. The reliability (the kappa statistic) of any DSM-IV diagnosis was 0.86 (95% CI 0.78-0.95).

2) Dependent variables

Dependent variables included emotional disorder and behavioral disorder diagnoses. The clinicians rated whether the child has emotional or behavioral disorders that does not meet operationalized diagnostic criteria, using diagnostic questionnaires and structured interviews (See <Table 1>).

3. Data analysis

All measurement was analyzed using the SPSS for Windows version 12 to examine differences between selected groups and to find out the associations among

selected variables. A T test was first used to determine if the means of two unrelated groups differ, treating emotional and behavioral symptoms scores. Multiple regression analyses were also conducted to explore possible mediating factors on emotional and conduct symptoms of children with non-disability families and disability families, after correlations between the two groups were examined to select factors to put in multiple regressions analyses.

III. RESULTS

1. Group differences in emotional and behavioral symptoms

<Table 2> shows means for the emotional and behavioral diagnostic scores. Mean emotional scores were significantly higher for children with disability families. Children with disability families had also significantly higher scores than children with no disability families on behavioral diagnostic scores. T test analysis showed significant differences in both emotional symptoms ($t = 8.824, p < 0.001$) and behavioral symptoms ($t = 10.461, p < 0.001$) between groups (See <Table 2>).

2. Influences of socio-economic, parental-health, and family functioning factors on emotional and behavior problem symptoms among children with non-disability families

Multiple regression analyses were used to examine

<Table 2> T-test analyses of emotional and behavioral symptoms between children with non-disability families and children with disability families

		Mean	S.D.	t
Emotional diagnosis	Children with no disability families	.04	.187	8.824***
	Children with disability families	.10	.297	
Behavioral diagnosis	Children with no disability families	.04	.207	10.461***
	Children with disability families	.13	.331	

*** p < 0.001

<Table 3> Factors influenced on emotional and/or behavioral disorders for children with non-disability families

	Emotional Disorder				Behavioral Disorder			
	95.0% C.I. for EXP(B)				95.0% C.I. for EXP(B)			
	B	Exp(B)	Lower	Upper	B	Exp(B)	Lower	Upper
Age	.096	1.101***	1.072	1.131	.067	1.069***	1.044	1.096
Sex	.270	1.310**	1.106	1.552	-.780	.458***	.390	.539
Number of people in household	.102	1.108**	1.027	1.195	.117	1.124***	1.050	1.204
Family type		NS				NS		
Marital status		NS				NS		
Family economic status		NS				NS		
Both parent working								
One parent working								
Neither parent working								
Gross income		NS				NS		
Parent's general health	.773	2.167***	1.952	2.405	.383	1.467***	1.322	1.629
Mental health of parent	.152	1.164***	1.136	1.192	.124	1.132***	1.107	1.157
Family functioning score	.016	1.017*	1.001	1.033	.073	1.076***	1.060	1.093
			Chi-square = 656.368 for 40 df				Chi-square = 781.448 for 40 df	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Variables which were not significant predictors of the disorders are denoted as 'NS'.

whether socio-economic, parental-health, and family functioning factors influence the emotional and behavior symptoms differently between two comparison groups. Table display the findings of logistic regression analyses in which socio-economic, parental-health, and family functioning factors were included as predictor variables among children with non-disability families.

Female students were more likely to show emotional disorders (OR = 1.310; 95% CI = 1.106-1.552; $p < .01$) whereas male students were more likely to have behavioral problems (OR = 0.458; 95% CI = 0.390-0.539; $p < .001$).

Emotional symptoms (OR = 1.101; 95% CI = 1.072-1.131; $p < 0.001$ / OR = 1.108; 95% CI = 1.027-1.195; $p < .01$) and behavioral problems (OR = 1.069; 95% CI = 1.044-1.096; $p < .0001$ / OR = 1.124; 95% CI = 1.050-1.204; $p < .0001$) were somewhat more likely in older children and those in large households.

Lower levels of parent's general health or mental health status appeared to contribute to higher levels of

emotional problems (OR = 2.167; 95% CI = 1.952-2.405; $p < 0.001$ / OR = 1.132; 95% CI = 1.136-1.192, $p < .001$) or behavioral problems among children with non-disability families (OR = 1.467; 95% CI = 1.322-1.629; $p < .0001$ / OR = 1.132; 95% CI = 1.107-1.157), consistent with the previous studies (Minkovitz *et al.*, 2002; Kuhlthau & Perrin, 2001).

Having low scores of family functioning also increased the likelihood of showing emotional or behavior problems (OR = 1.164; 95% CI = 1.136-1.192; $p < 0.001$ / OR = 1.132; 95% CI = 1.107-1.157; $p < .0001$). Children with family dysfunction may have more difficulties or be more easily impaired in adaptive social functioning and emotional adjustments compared to those in well functioning families (Rutger *et al.*, 2005; Sukhodolsky *et al.*, 2005).

Family type, marital status, family economic status, and gross income did not show any statistical differences in effects of having emotional or behavioral problems among children with non-disability families.

<Table 4> Factors influenced on emotional and/or behavioral disorders for children with disability families

	Emotional Disorder				Behavioral Disorder				
	B	95.0% C.I. for EXP(B)			B	95.0% C.I. for EXP(B)			
		Exp(B)	Lower	Upper		Exp(B)	Lower	Upper	
Age	.092	1.096*	1.016	1.183	.079	.026*	1.082	1.010	
Sex		NS			-1.038	.000	.354	.222	
Number of people in household		NS			.171	.046*	1.187	1.003	
Family type									
Married		NS							
Cohabiting					.727	2.070*	.974	4.398	
Lone parent					.349	1.418*	.007	298.174	
Marital status		NS			NS				
Family economic status		NS							
Both parent working									
One parent working					-.060	.941	.476	1.863	
Neither parent working					.544	1.723**	.976	3.042	
Gross income(£)									
Less than 1000									
7,000 to 7,999	-1.697	.183*	.037	.898	-2.402	.091**	.010	.792	
10,000 to 10,999	-3.030	.048***	.008	.309					
20,000 to 24,999	-2.263	.104	.014	.769					
30,000 to 39,999	-20.908	.000	.000	.					
40,000 or more	-19.349	.000***	.000	.					
Parent: General health	.237	1.268*	1.004	1.601	.342	1.407**	1.132	1.749	
Mental health of parent	.178	1.194***	1.123	1.270	.023	1.024	.961	1.090	
Family functioning score		NS			.095	1.100***	1.055	1.146	
		Chi-square = 108.506 for 40 df					Chi-square = 139.891 for 40 df		

*** p < 0.001, **p < 0.01, *p < 0.05

Variables which were not significant predictors of the disorders are denoted as 'NS'.

3. Influences of socio-economic, parental-health, and family functioning factors on emotional and behavior problem symptoms among children with disability families

Table 4 shows the impacts of socio-economic, parental-health, and family functioning factors on emotional and behavior problem symptoms for children with disability families. All the factors which were associated with emotional and behavioral problems among children with non-disability families were also significantly and positively related to emotional and behavioral disorders, suggesting that emotional and

behavioral problems were likely to be more common when both children with disability and non-disability families are older, have more numbers of people in the household, and show lower levels of parental general and mental health, and have a malfunctioning family.

Apart from the statistical results for children with non-disability families, family type (OR = 2.070; 95% CI = 0.974-4.398; p < .05 for behavior problems), economic status (OR = 1.723; 95% CI = 0.976-3.042; p < 0.01 for behavior problems), or income status (OR = 0.183; 95% CI = 0.037-0.898; p < .05 for emotional problems/ OR = 0.091; 95% CI = 0.010-0.792; p < .01) were significantly related to emotional and behavioral problems among children with disability families. The

unique contribution of the family type and income status for increasing the risk of emotional or behavioral problems indicates that children with cohabitating or low income among children with disability families are more likely to be at risk of having emotional or behavioral problems. The reason why family types and economic factors did not affect emotional or behavioral problems in children with disability families may be attributed to the fact that divorce and poverty rates are generally high in disabled families (Disability Rights Commission, 2006; Coles *et al.*, 2001; Kilborn, 1999).

IV. Discussion

The purpose of this study was to examine the effects of socio-economic, parental-health, and families functioning on emotional and behavioral problems among children with disability and non-disability. The results show that girls were more likely to have emotional problems than boys and boys were more likely to exhibit behavioral problems among children with non-disability families whereas there were no significant gender differences in emotional or behavioral symptoms among children with disability families. The pattern concerning adolescent internalizing or externalizing behavior problems among children with non-disability families is similar to previous studies. Besides, no relationships between gender and internalizing or externalizing behavior characteristics within subjects with disability families, could be explained by the fact that both internalizing and externalizing problems in children with disability families seem to be more common, with no difference between genders, than those in children with non-disability families.

Results demonstrate that family type, family economic status, and income status were uniquely associated with internalizing or externalizing behavior problems within children with disability families whereas both groups share the effects of age, numbers of people in the household, parent's general/mental health,

and functioning of the family together. The findings first suggest that both groups of children with parental health difficulties may be at increased risks of having internalizing or externalizing behavior problems when they are exposed to parental health problems or familial malfunctioning. Studies (Drotar, 2005; Stewart-Brown *et al.*, 2005; Mark *et al.*, 2003; Reinherz *et al.*, 2003; Qualter & Munn, 2002) on the family environment in the development of emotional and behavior problems in children have indicated the casual link between parental health difficulties or high numbers of people in the household, and problematic behaviors. Children with parental health problems are more likely to have experienced feeling depressed, having problems making or maintaining friends, having a disrupted education or experiencing bullying (Drotar, 2005; Mark *et al.*, 2003). Such familial environments may have short-term or long-term effects on the other situation: it might be relatively hard to have the opportunities of appropriate parenting, prospective psychosocial cognitive interaction, and professional assistance under those familial environments (Stewart-Brown *et al.*, 2005). Dysfunctional interactions between parent and the child may precede the onset of depressive episodes and subsequently the susceptibility to experiencing more problematic behavior problems in children increase. But large family size appears to facilitate healthy adjustment in children in disability households (Qualter & Munn, 2002), whereas overcrowding is generally known to have negative impacts on quality parent-child interaction (Reinherz *et al.*, 2003). This difference in coping negative environments could do partially explained by the following possibilities that emotional stress could be the most damage to those who are isolated, depending on the degree to which children with disabled parents feel isolated. But those with a large family, compared to single parent lone children, may report fewer perceived emotional problems as a result of being buffered by positive social support from their large families.

In addition, findings also highlight the importance of paying attention to cohabitating, lone, or economically

disadvantaged families in taking care of internalizing or behavior problems among children with disability families. The results of this are consistent with other examinations of parents' psychological disturbance according to socio-economic status, especially family type, economic status, and employment status (Cohen *et al.*, 2000; Simons *et al.*, 1994; McLanahan & Sandefur, 1994). Families where an adult has a disability are known to have higher poverty rates (Dearden & Becker, 1997) and perhaps children in the context of parental disability, less advantaged parental economic status, and dysfunctional family relationship (those factors are inter-related each other in many cases, Scullion *et al.*, 2005) may be more likely to have ambivalent/negative feelings to their parents (Duvdevany *et al.*, 2005) and/or increased conflicts between parents and children because of being less responsive and encouraging. This might be reflected in the child's negative emotions and behaviors. A depressed or deviant child may not have a less positive relationship with disabled parents. A negative association between parent-child relationships causes children to show more serious emotional and behavioral problems (Mothersead *et al.*, 1998). The impacts of a parent's disability and his/her familial/economic problems may be extended to the negative care and emotional/behavior developments of dependent children, in addition to the negative influence of quality of parent-child relationship on psychosocial functioning. These findings may help professionals understand the relatively high possibility of showing emotional or behavioral problems in children with disability families within a same familial setting.

Study limitations should be also noted. Because a part of the current study is based on adolescent self-report, the interpretation should be cautious. Data drawn from the UK samples are also limited to those areas but may be applicable to other countries. Further research may need to examine the accumulation effects of risk factors which are associated with internalizing and externalizing behavior development in each group, because it might be helpful to better understand to what extent the

accumulation of risk factors play a role to deepen the internalizing or externalizing behavior problems of each group.

Acknowledgement

I thank ONSSSRD (UK) which has generously given permission to use the *Mental Health of Children and Young people in Great Britain, 2004*.

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Received August 18, 2006

Accepted November 15, 2006