

# Internalizing symptoms and disorders in families of adolescents: A review of family systems literature

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## Abstract

Internalizing symptoms and disorders are relatively common during adolescence and impact considerably on social and emotional functioning. Using a family systems framework, this paper reviews the current literature examining the impact of internalizing symptoms and disorders on the functioning of the family system, the spouse subsystem and the parent–child subsystem. Moreover, literature examining the relationship between parents’ and adolescents’ internalizing symptoms and disorders is reviewed. The reviewed research demonstrates that there exists an association between internalizing symptoms and disorders and poorer functioning at various levels of the family system. Longitudinal studies have generally reported that parent internalizing symptoms and disorders predict poorer functioning in the family system as well as internalizing symptoms and disorders in adolescents. However, few longitudinal studies have examined whether adolescent internalizing symptoms and disorders predict poorer family functioning and internalizing symptoms and disorders in parents. Those that have examined such effects report mixed results. On the basis of our review, we make recommendations about future research directions. In particular, it is argued that more research on the reciprocal effects of internalizing symptoms and disorders within families is needed to better understand the antecedents and consequences of these conditions for families of adolescents.

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*Keywords:* Depression; Anxiety; Adolescents; Parents; Family systems theory; Parent–child relations

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## Contents

1. The current review . . . . .	94
2. Family systems theory . . . . .	94
3. Families of parents with internalizing symptoms and disorders. . . . .	101
3.1. Family system . . . . .	101
3.2. Spouse subsystem . . . . .	102
3.3. Parent–child subsystem . . . . .	103
3.4. Adolescent functioning and psychopathology . . . . .	104

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4.	Families of adolescents with internalizing symptoms and disorders . . . . .	106
4.1.	Family system. . . . .	106
4.2.	Spouse subsystem. . . . .	107
4.3.	Parent–child subsystem . . . . .	108
4.4.	Parental psychopathology . . . . .	110
5.	Reciprocal effects in the family system . . . . .	111
6.	Limitations . . . . .	112
7.	Summary and conclusions . . . . .	113
	References . . . . .	114

Internalizing symptoms and disorders are characterized primarily by a disturbance in mood or emotion and incorporate both depression and anxiety. They are contrasted with externalizing symptoms and disorders which are characterized primarily by a disturbance in the regulation of behavior, for example conduct disorder (Kovacs & Devlin, 1998). An important distinction has been made between internalization at the symptom level and diagnosable internalizing disorders (Merikangas & Avenevoli, 2002). For example, a person may experience symptoms of depression in the form of feelings of sadness and tearfulness, or symptoms of anxiety in the form of worries and fears. Such symptoms at low levels are considered normal and typically pass with time. Conversely, these symptoms may be of sufficient number and severity to cause significant impairment and to meet defined diagnostic criteria for a depressive or anxiety disorder.

The precise prevalence of internalizing symptoms and disorders in adolescents is difficult to ascertain due to the effects of changes in diagnostic criteria and differences in measurement tools as well as variations in the methods of sampling used in different studies. Reported rates tend to vary considerably, although some general estimates can be made.

The point prevalence of major depressive disorder in adolescents has been estimated to range from 0.4% to 8.3%, with a lifetime prevalence of between 15% and 20% (Birmaher et al., 1996). The prevalence of depressive symptoms in adolescents has been estimated to be higher, between 20% and 50% (Kessler, Avenevoli, & Merikangas, 2001), although some studies have reported lower rates (Boyd, Kostanski, Gullone, Ollendick, & Shek, 2000; Millikan, Wamboldt, & Bihun, 2002; Romano, Tremblay, & Vitaro, 2001). Prior to adolescence, depression is reported to occur equally among males and females with some reports of a slight preponderance of males. After this time, depression is twice as common in females as males (Merikangas & Avenevoli, 2002). Rates of onset of depression have also been reported to increase with age, with one study reporting rates rising from 1% to 2% at age 13, to 3% to 5% at age 15 (Lewinsohn, Moerk, & Klein, 2000).

With regard to anxiety disorders, the prevalence has been estimated to be up to 20% for adolescents (Essau, Conradt, & Petermann, 2000; Shaffer, Fisher, Dulcan, & Davies, 1996) with rates increasing with age (14.7% at 12–13 years, 19.7% at 14–15 years, 22% at 16–17 years; Essau et al., 2000). Anxiety disorders are also reported to be significantly more prevalent in females than males (21.8% versus 13.8%; Essau et al., 2000). Prevalence rates also vary by source. Romano et al. (2001) reported that the point prevalence of anxiety disorders in 14- to 17-year-olds was 14% when both adolescent and mother reports were considered, but only 8.9% and 6.5% if only adolescent or the mother reports were used, respectively. At the symptom level, Boyd et al. (2000) summarized numerous studies from around the world and reported rates of anxiety symptoms varying between 3.8% and 25%.

While the prevalence rates for anxiety and depression are often reported separately, comorbidity between anxiety and depression is estimated to be high, although reports vary considerably. For example, one review reported that between 20% and 75% of depressed youth also have a comorbid anxiety disorder, while between 5% and 55% of anxious youth also have a depressive disorder (Merikangas & Avenevoli, 2002). The frequency of comorbid cases, along with the strong conceptual overlap of the two constructs and the high correlations often reported between depression and anxiety, has led to various debates in the literature regarding the nature of these constructs. Indeed it has been noted that pure depression and pure anxiety are rare and that anxiety is often observed as a precursor to depression. Such findings have resulted in the proposal that depression and anxiety are more accurately conceptualized

as manifestations of a broader construct such as internalization or negative affectivity (see Brady & Kendall, 1992; King, Ollendick, & Gullone, 1991 for reviews).

It is clear that internalizing symptoms and disorders have important consequences for adolescents' current and future social and emotional well-being. They have been associated with drug use, suicide attempts, stressful events, reduced life satisfaction, poor self-esteem, educational underachievement, early marriage, marital dissatisfaction, and early parenthood (Gotlib, Lewinsohn, & Seeley, 1998; Rao et al., 1995; Woodward & Fergusson, 2001). Furthermore, contrary to earlier beliefs, internalizing disorders in adolescents have been reported to be relatively stable over time. For example, the probability of recurrence of major depressive disorder is reported to be 40% over the course of 2 years during adolescence and 60% to 70% in adulthood (Birmaher et al., 1996). Essau, Conradt, and Petermann (2002) reported that 22.6% of 12- to 17-year-olds with an anxiety disorder continued to have an anxiety disorder approximately 15 months later. Adolescents with internalizing disorders are also more likely to have or to develop other psychiatric disorders including disruptive, substance use, somatoform, and personality disorders (Birmaher et al., 1996; Essau et al., 2002; Kasen et al., 2001; Woodward & Fergusson, 2001).

In sum, internalizing symptoms and disorders are relatively common during adolescence and can have lasting effects on social and emotional well-being. Due to their clear negative effects on adolescents' lives, understanding the aetiology of internalizing symptoms and disorders and further examining their sequelae have become important and rapidly expanding areas of research. In particular, potential contextual risk factors, such as family environment, are of central importance.

## 1. The current review

This paper reviews the current literature on internalizing symptoms and disorders in families of adolescents within a family systems framework. While much of the literature emphasizes the effect that parents and families have on the well-being of adolescents, this review aims to highlight the importance of considering possible reciprocal effects between parents, adolescents, and their families.

The majority of research examining associations between family climate and internalizing symptoms and disorders can be classified into two main areas: (i) studies of families of parents with internalizing symptoms and disorders and (ii) studies of families of adolescents with internalizing symptoms and disorders. The findings of these two bodies of literature are presented from a family systems perspective along with the few existing studies which have attempted to examine possible reciprocal effects between parents, adolescents, and their families.

Studies of focus for this review were those examining depression and anxiety in families with adolescents. Included studies examined factors related to the family system, the spouse subsystem, the parent–child subsystem, or individual functioning of parents and adolescents. Adolescents were defined as individuals being aged between 11 and 18 years. Whilst studies of offspring outside this age range were generally excluded, a number of informative studies have included pre-adolescent children (i.e., under 11 years) or young adults (i.e., older than 18 years) in addition to adolescents. Such studies were included in the review with age-specific results reported when available. Details of all reviewed studies are listed in Table 1. The table does not include papers cited in the introductory and concluding sections only, nor those cited primarily for the purpose of background information. Throughout the review, we have remained cognizant of the distinction made between internalizing symptoms and internalizing disorders, and indicate such for each study included.

## 2. Family systems theory

Extrapolating from theories frequently applied to biological and social systems, family systems theory conceptualizes the family as an organized whole in which all the elements (i.e., members) are interdependent (Minuchin, 1985). Thus, an individual's behavior is viewed as being strongly influenced and determined by the structure, organization, and transactional patterns of the family system (Miller, Ryan, Keitner, Bishop, & Epstein, 2000). Likewise, the characteristics and behavior of all other members as well as the functioning of the whole family system and its subsystems (e.g., spouse subsystem, parent–child subsystem) are influenced by the characteristics and behavior of the individual. Family systems theory further states that patterns in a system are circular rather than linear (Minuchin, 1985). This means that effects of the individual on the family, or of the family on the individual, feed back

Table 1  
Studies of internalizing symptoms and disorders in families of adolescents

Citation	Design, duration of follow-up	Sample	Child age range (years) <sup>a</sup>	Parent internalization <sup>b</sup>	Offspring internalization <sup>b</sup>	Other relevant constructs <sup>c</sup>
Armsden and Greenberg (1987)	Cross-sectional	186 offspring	16–20		Self-reported symptoms (depression, anxiety)	Parental attachment <sub>o</sub>
Armsden et al. (1990)	Cross-sectional	29 depressed, 12 depressed (recovered), 14 other-disordered, and 52 non-disordered offspring, and their parents	10–17	Study-diagnosed disorder (depression, anxiety)	Study-diagnosed disorder (depression); Self-reported symptoms (depression)	Parental attachment <sub>o</sub>
Aseltine et al. (1994)	Longitudinal, 2 years	939 offspring	14–17/16–19		Self-reported symptoms (depression)	Family functioning <sub>o</sub>
Biederman et al. (2001)	Cross-sectional	59 offspring of depressed parents, 29 offspring of anxious parents, 179 offspring of anxious-depressed parents, 113 offspring of non-disordered parents	2–25	Independently diagnosed disorder (depression, anxiety)	Study-diagnosed disorder (depression, anxiety)	Offspring global functioning <sub>s</sub> ; School functioning <sub>s</sub> ; Treatment history <sub>s</sub>
Biederman et al. (2006)	Cross-sectional	319 offspring of 136 anxious-depressed, 27 anxious, 27 depressed, and 103 non-disordered parents	4–31	Study-diagnosed disorder (depression, anxiety)	Study-diagnosed disorder (anxiety)	
Brendgen et al. (2005)	Longitudinal, 8 years	414 offspring and their mothers	6/14		Self-reported symptoms (depression)	Parent–child relationship <sub>o</sub> ; Temperament <sub>p</sub> ; Family adversity <sub>p</sub> ; Parental attachment <sub>o</sub>
Buist et al. (2004)	Longitudinal, 2 years	288 offspring	11–15		Self-reported symptoms (depression, anxiety)	Parental attachment <sub>o</sub>
Burt et al. (2005)	Longitudinal, 13.5 years	184 offspring and their mothers	4/17.5	Self-reported symptoms (depression)		Family functioning <sub>p,s</sub> ; Offspring psychiatric symptoms <sub>p,s</sub> ; Parent–child relationship <sub>o,p</sub>
Caster et al. (1999)	Cross-sectional	2708 offspring and 404 of their parents	7–9th and 11th grade		Self-reported symptoms (depression, anxiety)	
Compton et al. (2003)	Longitudinal, 10 years	73 offspring and their mothers	6–8/12–19	Self-reported symptoms (depression)	Self-, parent- and observer-reported symptoms (depression)	
Cooper et al. (2006)	Cross-sectional	85 anxious and 45 non-disordered offspring and their parents	6–16	Study-diagnosed disorder (depression, anxiety)	Study-diagnosed disorder (anxiety)	
Cumsille and Epstein (1994)	Cross-sectional	93 offspring	13–15		Self-reported symptoms (depression)	Family functioning, support, and satisfaction <sub>o</sub>

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Table 1 (continued)

Citation	Design, duration of follow-up	Sample	Child age range (years) <sup>a</sup>	Parent internalization <sup>b</sup>	Offspring internalization <sup>b</sup>	Other relevant constructs <sup>c</sup>
Dadds et al. (1992)	Cross-sectional	Families of 18 depressed, 27 conduct disordered, 12 mixed-disordered, and 16 non-disordered offspring	7–14		Independently diagnosed disorder (depression); self-reported symptoms (depression)	Parent–child communication <sub>s</sub>
Davies and Lindsay (2004)	Cross-sectional	924 offspring, and 172 of their mothers	10–15		Self- and mother-reported symptoms (depression, anxiety)	Interparental conflict <sub>o,p</sub> ; Communion <sub>o</sub>
De Ross et al. (1999)	Cross-sectional	42 offspring and their parents	10–17	Self-reported symptoms (depression)	Self-reported symptoms (depression)	Family functioning <sub>o,p</sub>
Demo and Acock (1996)	Cross-sectional	850 offspring and their mothers	12–18	Self-reported symptoms (depression)		Offspring socioemotional adjustment, academic performance, and global well-being <sub>p</sub>
Doyle and Markiewicz (2005)	Longitudinal, 2 years	175 offspring	13/15		Self-reported symptoms (depression, anxiety)	Interparental conflict <sub>o</sub> ; Parenting style <sub>o</sub> ; Parental attachment <sub>o</sub> ; Self-esteem <sub>o</sub>
Du Rocher Schudlich and Cummings (2003)	Cross-sectional	267 offspring and their parents	8–16	Self-reported symptoms (depression)	Self-reported symptoms (depression, anxiety)	Marital conflict <sub>s</sub>
Duggal et al. (2001)	Longitudinal, 17.5 years	168 offspring and their mothers and teachers	Birth/17.5	Self-reported symptoms (depression)	Self-, mother-, teacher-, and observer-reported symptoms (depression, anxiety)	
El-Sheikh and Elmore-Staton (2004)	Cross-sectional	103 offspring and their parents	Mean = 11.15, S.D. = 1.89		Parent- and self-reported symptoms (depression, anxiety)	Marital conflict <sub>o,p</sub> ; Parent–child conflict <sub>p</sub> ; Parental attachment <sub>o</sub>
Essau (2004)	Cross-sectional	1035 offspring	12–17	Child-reported symptoms (depression, anxiety)	Study-diagnosed disorder (depression)	Parental attachment <sub>o</sub> ; Other parent psychiatric symptoms <sub>o</sub> ; Offspring functioning <sub>o</sub>
Fendrich et al. (1990)	Cross-sectional	153 offspring and their depressed parents, and 67 offspring and their non-depressed parents	6–23 (42% aged 12–18)	Study-diagnosed disorder (depression)	Study-diagnosed disorder (depression, anxiety)	Family functioning <sub>o</sub> ; Marital adjustment <sub>p</sub> ; Divorce <sub>p</sub> ; Parenting style <sub>o</sub> ; Parent–child relationship <sub>p</sub>
Forehand et al. (1988)	Longitudinal, 1 year	59 offspring and their mothers	11–14/12–15	Self-reported symptoms (depression)	Self-reported symptoms (depression)	Marital conflict <sub>o</sub>
Formoso et al. (2000)	Cross-sectional	284 offspring	10–16		Self-reported symptoms (depression)	Parental attachment <sub>o</sub>
Friedmann et al. (1997)	Cross-sectional	Families of 111 depressed, 15 anxious, 241 other-disordered, and 353 non-disordered individuals	12+	Independently diagnosed disorder (depression, anxiety)	Independently diagnosed disorder (depression, anxiety)	Family functioning <sub>o,p</sub>

Frye and Garber (2005)	Longitudinal, 2 years	194 offspring and their mothers	6th grade (mean = 11.88, S.D. = .55)/ 8th grade	Study-diagnosed disorder (depression)	Mother-reported symptoms (depression, anxiety)	Maternal criticism <sub>s</sub>
Ge et al. (1995)	Longitudinal, 2 years	368 offspring and their parents	7th grade (mean = 12.7)/ 9th grade	Self-reported symptoms (depression, anxiety)	Self-reported symptoms (depression, anxiety)	
Ge et al. (2006)	Longitudinal, 11 years	550 offspring	12–14/22–24		Self-reported symptoms (depression)	Divorce <sub>o</sub> ; Stressful life events <sub>o</sub>
Gil-Rivas et al. (2003)	Cross-sectional	262 offspring	High school (mean = 15.9)		Self-reported symptoms (depression)	Parenting style <sub>o</sub> ; Parent–child conflict <sub>o</sub>
Gotlib et al. (1998)	Longitudinal, 7 years	1709 offspring	Mean = 16.6, S.D. = 1.2/ Mean = 23.5, S.D. = 1.2		Study-diagnosed disorder (depression)	Marital conflict <sub>o</sub>
Greenberger and Chen (1996)	Cross-sectional	470 offspring	7–8th grade (mean = 13.1), College students (mean = 20.0)		Self-reported symptoms (depression)	Family functioning <sub>o</sub> ; Parenting style <sub>o</sub> ; Parent–child conflict <sub>o</sub>
Grych et al. (2004)	Cross-sectional	388 offspring	14–19		Self-reported symptoms (depression, anxiety)	Marital conflict <sub>o</sub>
Hammen and Brennan (2003)	Cross-sectional	816 female offspring of 234 depressed and 566 non-disordered mothers	15	Study-diagnosed disorder (depression)	Study-diagnosed disorder (depression)	
Hammen et al. (1991)	Longitudinal, 3 years	70 offspring and their depressed, bipolar, chronically ill, or non-disordered mothers	8–16	Study-diagnosed disorder (depression)	Study-diagnosed disorder (depression)	
Hammen et al. (1999)	Cross-sectional	43 mothers of depressed offspring	8–16	Study-diagnosed disorder (depression)	Study-diagnosed disorder (depression)	Marital satisfaction <sub>p</sub> ; Marital status <sub>p</sub> ; Other parent psychiatric disorder <sub>s</sub>
Hernandez-Guzman and Sanchez-Sosa (1996)	Cross-sectional	3432 offspring	15–18		Self-reported symptoms (anxiety)	Parent–child relationship <sub>o</sub>
Hudson and Rapee (2001)	Cross-sectional	43 anxious and 32 non-anxious offspring, and their mothers	7–15		Study-diagnosed disorder (anxiety)	Maternal negativity and criticism <sub>s</sub>
Hudson and Rapee (2005)	Cross-sectional	Parents of 45 anxious and 33 non-disordered offspring	7–16		Study-diagnosed disorder (anxiety)	Parenting style <sub>p</sub>
Keitner et al. (1995)	Longitudinal, 1 year	Families of 45 depressed individuals	12+	Independently diagnosed disorder (depression)	Independently diagnosed disorder (depression)	Family functioning <sub>o,p</sub>
Keller et al. (1986)	Cross-sectional	37 families (72 offspring) with one or more depressed parent	6–19	Study-diagnosed disorder (depression)	Study-diagnosed disorder (depression)	Offspring adaptive functioning <sub>s</sub> ; Other offspring psychiatric disorder <sub>s</sub>

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Table 1 (continued)

Citation	Design, duration of follow-up	Sample	Child age range (years) <sup>a</sup>	Parent internalization <sup>b</sup>	Offspring internalization <sup>b</sup>	Other relevant constructs <sup>c</sup>
Kendler et al. (1997)	Cross-sectional (retrospective)	828 twin pairs and their parents	17–55	Study-diagnosed disorder (depression, anxiety); Self-reported symptoms (depression, anxiety)		Parenting style <sub>o,p</sub>
Kim et al. (2003)	Longitudinal, 14 years	206 male offspring and their parents	9–10/23–24	Self-reported symptoms (depression)	Self-reported symptoms (depression)	Marital transitions <sub>p</sub>
Kutcher et al. (2004)	Cross-sectional	43 female offspring with a depressed mother, 40 female offspring with a non-depressed mother	12–15	Study-diagnosed disorder (depression)		Social support <sub>o</sub>
Lewinsohn et al. (2005)	Longitudinal, 10 years	941 offspring and their parents	14–18/23–25	Study-diagnosed disorder (depression)		Offspring impairment <sub>o,s</sub>
Manassis and Hood (1998)	Cross-sectional	74 anxious offspring, and their mothers	6–16	Self-reported symptoms (anxiety)	Study-diagnosed disorder (anxiety)	Child global functioning <sub>s</sub>
Marmorstein and Iacono (2004)	Cross-sectional	79 depressed, 135 conduct-disordered, 44 depressed and conduct-disordered, and 184 non-disordered offspring and their parents	17	Study-diagnosed disorder (depression)	Study-diagnosed disorder (depression, conduct disorder)	Parent–child conflict <sub>o,p</sub> ; Other parent psychiatric disorder <sub>s</sub>
McCarty and McMahon (2003)	Longitudinal, 8 years	224 offspring and their mothers	Kindergarten/7th grade (approximately age 12)	Self-reported symptoms (depression)	Study-diagnosed disorder (anxiety, depression)	Parent–child communication <sub>o,p</sub> ; Parent–child relationship <sub>p,s</sub> ; Offspring externalizing disorder <sub>s</sub>
McClure et al. (2001)	Cross-sectional	816 offspring and their parents	15	Study-diagnosed disorder (depression, anxiety)	Study-diagnosed disorder (anxiety)	Parenting style <sub>o</sub>
McFarlane et al. (1995)	Cross-sectional	801 offspring	12th grade (mean = 17.1, S.D. = 1.0)		Study-diagnosed disorder (depression)	Family functioning <sub>o</sub> ; Parenting style <sub>o</sub>
McKeown et al. (1997)	Longitudinal, 1 year	3191 offspring	7–9th grade/8–10th grade		Self-reported symptoms (depression)	Family functioning <sub>o</sub>
Miller et al. (1986)	Cross-sectional	Families of 22 depressed, 64 other-disordered, and 23 non-disordered individuals	12+	Independently diagnosed disorder (depression)	Independently diagnosed disorder (depression)	Family functioning <sub>o,p</sub>
Millikan et al. (2002)	Cross-sectional	201 twin offspring and their parents	12–19		Self-reported symptoms (depression, anxiety)	Family functioning <sub>o,p</sub>
Mufson et al. (1992)	Cross-sectional	74 offspring of depressed parents, 79 offspring of anxious-depressed parents, 41 offspring of other-disordered parents,	6–23	Independently diagnosed disorder (depression, anxiety)	Study-diagnosed disorder (depression, anxiety)	Other child psychiatric disorder <sub>s</sub> ; Child psychiatric treatment <sub>s</sub>



		and 20 offspring of non-disordered parents, and their parents				
Muris et al. (2003)	Cross-sectional	742 offspring	12–18		Self-reported symptoms (depression, anxiety)	Parenting style <sub>o</sub> ; Parental attachment <sub>o</sub>
Muris et al. (2001)	Cross-sectional	155 offspring	12–14		Self-reported symptoms (depression, anxiety)	Parental attachment <sub>o</sub>
Nilzon and Palmerus (1997)	Cross-sectional	Parents of 16 depressed offspring and 16 non-depressed offspring	12–14		Study-diagnosed disorder (depression, anxiety)	Family functioning <sub>p</sub> ; Interparental conflict <sub>p</sub>
Papini et al. (1991)	Cross-sectional	231 offspring	12–13		Self-reported symptoms (depression, anxiety)	Parental attachment <sub>o</sub>
Puig-Antich et al. (1993)	Cross-sectional	62 depressed and 38 non-disordered offspring and their parents	Tanner stage III–19 years		Study-diagnosed disorder (depression)	Marital relationship <sub>s</sub> ; Parent–child relationship <sub>s</sub>
Robertson and Simons (1989)	Longitudinal, 1 year	300 offspring	13–17/14–18		Self-reported symptoms (depression)	Parenting style <sub>o</sub>
Robila and Krishnakumar (2006)	Cross-sectional	239 offspring and their mothers	12–14	Self-reported symptoms (depression)	Self-reported symptoms (depression, anxiety)	Parenting style <sub>o</sub>
Rueter et al. (1999)	Longitudinal, 7 years	303 families (2 parents and 2 offspring)	7th grade (mean = 12.7, S.D. = 0.54)/ 19–20		Self-reported symptoms (depression, anxiety); Study-diagnosed disorder (depression, anxiety)	Parent–child conflict <sub>o,p</sub>
Sanders et al. (1992)	Cross-sectional	18 depressed, 27 conduct disordered, 12 mixed depression–conduct disordered and 16 non-disordered offspring, and their mothers	7–14		Study-diagnosed disorder (depression, conduct disorder)	Parent–child communication <sub>s</sub>
Sarigiani et al. (2003)	Longitudinal, 1 year	36 offspring and their depressed parent(s), 165 offspring and their non-depressed parents	11–14	Self-reported symptoms (depression)	Self-reported symptoms (depression)	Family functioning <sub>o</sub> ; Family experiences <sub>o</sub>
Sheeber and Sorensen (1998)	Cross-sectional	26 depressed and 26 non-disordered offspring and their mothers	12–19		Study-diagnosed disorder (depression)	Family functioning <sub>o,p</sub> ; Parent–child aggression <sub>s</sub>
Sheeber et al. (1997)	Longitudinal, 1 year	222 offspring and their mothers	14–20/15–21		Self-reported symptoms (depression)	Family support <sub>o,p,s</sub>
Shiner and Marmorstein (1998)	Cross-sectional	79 depressed and 82 non-depressed offspring and their parents	17	Study-diagnosed disorder (depression)	Study-diagnosed disorder (depression)	Family functioning <sub>o,p</sub> ; Parent–child relationship <sub>o,p</sub> ; Divorce <sub>p</sub>
Slavin and Rainer (1990)	Longitudinal, 8 months	333 offspring	9–11th grade (mean = 15.5, S.D. = 0.99)/ 10–12th grade (mean = 16.05, S.D. = 0.98)		Self-reported symptoms (depression)	Family support <sub>o</sub>

(continued on next page)



Table 1 (continued)

Citation	Design, duration of follow-up	Sample	Child age range (years) <sup>a</sup>	Parent internalization <sup>b</sup>	Offspring internalization <sup>b</sup>	Other relevant constructs <sup>c</sup>
Slesnick and Waldron (1997)	Cross-sectional	17 depressed and 20 non-depressed offspring and their parents	Up to 16 (mean=15.1, S.D.=0.8)		Study-diagnosed disorder (depression)	Parent–child relationship <sub>s</sub>
Spence et al. (2002)	Longitudinal, 13.5 years	4434 offspring and their mothers	0.5/14	Self-reported symptoms (depression, anxiety)	Self-reported symptoms (depression, anxiety)	Marital satisfaction <sub>p</sub> ; Marital break-up <sub>p</sub>
Stice et al. (2004)	Longitudinal, 2 years	496 female offspring	11–15/13–17		Self-reported symptoms (depression)	Parental support <sub>o</sub>
Sund and Wichstrom (2002)	Longitudinal, 1 year	2360 offspring	12–15/13–17		Self-reported symptoms (depression)	Parental attachment <sub>o</sub>
Tamplin et al. (1998)	Longitudinal, 15 months	61 depressed and 32 non-disordered offspring and their parents	8–16/9.5–17.5		Study-diagnosed disorder (depression)	Family functioning <sub>o,p</sub>
Thomas and Forehand (1991)	Cross-sectional	Parents and teachers of 115 offspring	10–14	Self-reported symptoms (depression)	Teacher-reported symptoms (depression)	
Vandewater and Lansford (2005)	Cross-sectional	755 offspring and their mothers	12–18	Self-reported symptoms (depression)	Mother-reported symptoms (depression, anxiety)	Family functioning <sub>o</sub> ; Parent–child conflict <sub>p</sub>
Vazsonyi and Belliston (2006)	Cross-sectional	6935 offspring	15–19		Self-reported symptoms (depression, anxiety)	Parent–child relationship <sub>o</sub>
Warner et al. (1995)	Cross-sectional	32 depressed, 17 anxious, 60 anxious-depressed, and 36 non-disordered parents, and their 145 offspring	6–24	Study-diagnosed disorder (depression, anxiety)	Study-diagnosed disorder (depression, anxiety)	Family functioning <sub>p</sub> ; Marital satisfaction <sub>p</sub> ; Divorce <sub>p</sub>
Warren et al. (1997)	Longitudinal, 16.5 years	172 offspring	1/17.5		Study-diagnosed disorder (anxiety)	Parental attachment <sub>s</sub>
Whaley et al. (1999)	Cross-sectional	18 anxious and 18 non-disordered mothers and their offspring	7–14	Study-diagnosed disorder (anxiety)	Study-diagnosed disorder (anxiety)	Parenting style <sub>s</sub>
Young et al. (2005)	Longitudinal, 2 years	389 offspring	11–16/13–18		Study-diagnosed disorder (depression)	Parent support <sub>o</sub> ; Peer support <sub>o</sub>

<sup>a</sup> Mean age or grade level listed when range not provided in paper. Age range listed as first wave/last wave for longitudinal studies.

<sup>b</sup> Study-diagnosed=Disorder diagnosed by study personnel, usually by structured clinical interview. Independently diagnosed=Disorder diagnosed by a clinician external to the study. Symptoms=Typically reported via a pen and paper inventory or short interview.

<sup>c</sup> Only constructs relevant to the review listed. Subscripts indicate informant/rater: o=offspring, p=parent, s=study personnel.

to create a cycle of interaction. For example, an ill child may raise concern in family members who therefore pay more attention to the child. The child in turn may report more symptoms and gain further attention. When such a cycle is ongoing and has negative consequences for the family and its members, the cycle must be interrupted in some way, a frequent goal of family therapy.

Within a family systems approach to psychopathology, psychiatric disorders are hypothesized to be at least partly a product of the family system in which an individual exists (Steinglass, 1987). Furthermore, the principles of interdependence and circularity assume that psychiatric disorder in a family member impacts on the functioning of the family system, including its subsystems and individual members, which in turn impacts further on the individual.

Research on internalizing symptoms and disorders in families has provided valuable information on the possible causes and consequences of such disorders in families. However, it has been predominantly biased towards the unidirectional effects of parents on children and the family (i.e., linear effects), with remarkably few studies considering the likely contributions of family functioning and children's symptomatology to the development and/or maintenance of parental symptoms. Minuchin (1985) pointed out the misleading nature of such simplistic unidirectional interpretations in the following eloquent example:

It is an epistemological error to state that an overprotective mother is creating anxiety in her child. Rather, mother and child have created a pattern in which (starting anywhere) the child's fears trigger concerned behavior in the mother, which exacerbates the child's fears, which escalates the mother's concern, and so forth. (p. 290)

The existence of reciprocal effects between parents and children is not a new idea (Bell, 1968) and has been explored in studies of socialization (Bell & Chapman, 1986), substance use (Stice & Barrera, 1995), and externalizing disorders (Anderson, Lytton, & Rommey, 1986). However, equivalent research in the area of internalizing disorders is sparse.

### **3. Families of parents with internalizing symptoms and disorders**

#### *3.1. Family system*

Family functioning refers to the family's ability to deal with everyday life and cope effectively with problems and changes. Researchers and theorists have included various aspects of family life and relationships in their conceptualizations of family functioning which have been assessed via various self-report and observational measures. These aspects include, but are not limited to, communication, conflict, cohesion, affective expression, roles, behavioral control, adaptability, and organization.

In general, families of individuals with major depression and anxiety disorders tend to report greater family dysfunction than families of individuals with no disordered members, particularly in the areas of communication and affective involvement (Friedmann et al., 1997; Keitner et al., 1995; Miller, Kabacoff, Keitner, Epstein, & Bishop, 1986; see Table 1). Furthermore, while family functioning may improve somewhat post-hospitalization for depression, such improvement may not be sustained over a 12-month period (Keitner et al., 1995). Although such research suggests that functioning may be significantly compromised in families with depressed and anxious members, these studies made no comparisons by membership status. Thus it is unclear whether the impact of internalizing disorders on functioning is specific to families with an affected parent vis-à-vis a child.

However, there is some evidence specific to internalizing symptoms and disorders in parents which suggests such are associated with various aspects of family dysfunction. In regard to parental depressive symptoms, both maternal and paternal symptoms are reportedly associated with lower family cohesion and warmth (De Ross, Marrinan, Schattner, & Gullone, 1999; Vandewater & Lansford, 2005; see Table 1) and higher family conflict (De Ross et al., 1999; Sarigiani, Heath, & Camarena, 2003). Paternal depressive symptoms are also reportedly associated with greater family control (De Ross et al., 1999). A major limitation of these findings is that they are entirely cross-sectional, thus restricting speculation regarding direction of effects. The only longitudinal study that has been conducted yielded significant associations between general family functioning when offspring were 4 years old and maternal depressive symptoms when offspring were 16 years old (Burt et al., 2005; see Table 1). However, earlier maternal depressive symptoms were not associated with later family conflict. Unfortunately, variations in the measures used and a lack of statistical control for previous levels of symptoms and family

functioning, limit the conclusions that can be drawn from this study. Thus, while parental depressive symptoms appear to be associated with family dysfunction, the possible reciprocal relationship between these factors over time remains unclear.

In regard to parental anxiety symptoms in families of adolescents, no studies could be found that reported on family functioning. Research on functioning in families of parents diagnosed with depressive or anxiety disorders was similarly scarce. Only two relevant studies could be found, and both included offspring aged from childhood through to young adulthood with no examination of possible associated age differences (Fendrich, Warner, & Weissman, 1990; see Table 1; Warner, Mufson, & Weissman, 1995). Furthermore, the findings of these studies are somewhat contradictory. One study reported that, consistent with studies of parental depressive symptoms, offspring of parents diagnosed with major depression report lower family cohesion compared to offspring of non-depressed parents (Fendrich et al., 1990). However, a later study found no such difference when parent-reported family cohesion was examined (Warner et al., 1995). Nor did this latter study find any difference in reported family cohesion between parents with and without panic disorder. However, they did find that parents with either or both major depression and panic disorder were more likely to report their family to have poorer adaptability, reflecting a more chaotic family environment when compared to parents without a disorder. Differences in findings by informant are not uncommon, however, the best way to interpret such differences remains contentious. Although a full discussion of this issue is beyond the scope of this review, we will return to it in brief later. While these two studies generally support an association between parent internalizing disorders and family dysfunction, replication is required to further delineate the exact nature of this association, and the specificity of findings to families of adolescent offspring.

Overall, research has indicated that elevated depressive symptoms in parents tend to be associated with greater dysfunction in families of adolescents. There is also some support for an association between parental internalizing disorders and family dysfunction. Areas of particular concern include conflict, cohesion, warmth, and adaptability. However, the literature remains vastly limited in that no studies of parental anxiety symptoms could be found, the current research is almost entirely cross-sectional, and the one longitudinal study that has been reported did not adequately examine reciprocal effects. In addition, those studies which examined parental internalizing disorders did not report adolescent-specific results, and differences in findings by informant further complicate the drawing of firm conclusions.

### 3.2. Spouse subsystem

In addition to overall family functioning, researchers have attempted to examine the relationship between parental internalizing symptoms and disorders and the functioning of family subsystems. One such subsystem is the spouse subsystem, or marital relationship. While the wider literature generally supports an association between marital difficulties and internalizing symptoms and disorders (e.g., Mead, 2002), research specific to families of adolescents is relatively sparse.

The few studies that have examined families of adolescents have generally reported significant associations between parental depressive symptoms and marital conflict (Du Rocher Schudlich & Cummings, 2003), and between parental diagnosis of either or both major depression and panic disorder and both poorer marital adjustment and lower satisfaction (Fendrich et al., 1990; Warner et al., 1995). In addition, parents diagnosed with major depression, or both major depression and panic disorder, report higher rates of divorce than parents with no disorder or panic disorder alone (Fendrich et al., 1990; Warner et al., 1995). However, as previously noted, this latter research is not specific to adolescents (i.e., Fendrich et al., 1990; Warner et al., 1995).

In regard to marital conflict, it appears that it may be important to examine the *quality* of marital conflict rather than simply the quantity, as is often the case in studies of interparental conflict. For example, Du Rocher Schudlich and Cummings (2003) reported that maternal and paternal depressive symptoms were related to less constructive marital conflict (e.g., positive problem solving) and more depressive marital conflict (e.g., withdrawal, tearfulness). Paternal depressive symptoms were also related to more destructive marital conflict (e.g., verbal hostility, physical aggression). While this study included both children and adolescents, no differences in model fit were found between offspring aged 8 to 11 years and those aged 12 to 16 years.

While research on the spouse subsystem has largely been cross-sectional, and therefore unable to indicate likely directions of effects, there is some longitudinal support for the contention that parental depression precedes marital dysfunction. In one study, elevated maternal depressive symptoms were reported to predict an increase in adolescent-

reported marital conflict 1 year later (Forehand et al., 1988; see Table 1). In another study, major depression during adolescence was reported to predict marital dissatisfaction in young adulthood (Gotlib et al., 1998; see Table 1). Although these studies suggest a direction of causation from depression to marital dysfunction, it is important to note that no longitudinal study could be found that examined whether previously non-depressed couples who experience marital difficulties are at increased risk of developing depression. In addition, no longitudinal research on anxiety and the spouse subsystem was found.

Overall, it appears that parental internalizing symptoms and disorders, particularly depression, may be related to significant dysfunction in the spouse subsystem. However, findings are limited at this stage. Once again, there is no research on parental anxiety symptoms, longitudinal studies are sparse and do not examine reciprocal effects, and studies which include both children and adolescents frequently fail to report adolescent-specific results. Also noteworthy is a lack of research utilizing spouse-reported measures. As previously highlighted, multi-informant data can produce difficulties in interpretation, however, it would be of arguable import to examine spouse perceptions given the potential biases in reports by individuals affected by depression and anxiety.

### 3.3. Parent–child subsystem

Parental internalizing symptoms and disorders have been reported to be related to various aspects of the parent–child subsystem, particularly parenting style and quality of attachment. Unfortunately, while there is a great deal of research focusing on parents and young children, equivalent research with adolescents is limited.

Various parenting behaviors of adults with internalizing symptoms and disorders have been studied, including warmth, acceptance, control, and communication. One particular area of interest has been a parenting style labeled ‘affectionless control’ (Parker, Tupling, & Brown, 1979). This style of parenting is characterized by a lack of warmth and affection together with a high level of control or protectiveness.

A number of studies have reported on affectionless control parenting in relation to parental internalizing symptoms and disorders, however, results have been mixed (Fendrich et al., 1990; Kendler, Sham, & MacLean, 1997; McClure, Brennan, Hammen, & Le Brocque, 2001; Robila & Krishnakumar, 2006; see Table 1). For example, one study reported maternal depressive symptoms to be associated with higher parental psychological control, but not behavioral control or acceptance (Robila & Krishnakumar, 2006), while another reported parental depressive symptoms and a history of internalizing disorder to be associated with lower parental warmth but not protectiveness or authoritarianism (Kendler et al., 1997). Further, while parental depressive disorder has been reported to be associated with affectionless control parenting (Fendrich et al., 1990; McClure et al., 2001), no such association has been reported for parental anxiety disorder (McClure et al., 2001). Thus, while affectionless control is typically associated with offspring internalizing symptoms and disorders, as will be discussed later, there is currently only tentative support for an association with parental internalizing symptoms and disorders in families of adolescents.

In addition to affectionless control parenting, parental internalizing symptoms and disorders have been associated with more negative parent–child interactions as reported by both parents and offspring (Fendrich et al., 1990; Frye & Garber, 2005; Kutcher et al., 2004; McCarty & McMahan, 2003; Vandewater & Lansford, 2005; see Table 1). Specifically, parental depressive disorder and maternal distress (including depressive symptoms) have been reported to be associated with greater parent–child conflict (Fendrich et al., 1990; Vandewater & Lansford, 2005), and maternal depression has been reported to be associated with greater maternal criticism (Frye & Garber, 2005) and less emotional support as perceived by daughters (Kutcher et al., 2004). Furthermore, maternal depressive symptoms in childhood reportedly predict poorer parent–child communication and a more cold and hostile parent–child relationship in early adolescence (McCarty & McMahan, 2003).

Observational methods are also frequently utilized to assess parent–child interactions, however, only one relevant study including adolescence could be found (Whaley, Pinto, & Sigman, 1999; see Table 1). In this study, mothers with and without anxiety disorder were observed during problem-solving interactions with their children. Anxious mothers were reported to be less warm and positive, less granting of autonomy, and more critical and catastrophizing compared to mothers with no disorder. In addition, maternal warmth and granting of autonomy were particularly low when the child was also anxious. Unfortunately, although the study included adolescents up to the age of 14 years, it also included children as young as 7 years, and did not report comparisons between children and adolescents.

Also of importance to research into parent–child relationships in families of parents with internalizing symptoms or disorders is attachment. Extensive research with young children using the Ainsworth’s Strange Situation Procedure

(Ainsworth, Blehar, Waters, & Wall, 1978) suggests that offspring of depressed or anxious mothers tend to have more insecure patterns of attachment compared to offspring of non-depressed and non-anxious mothers (Manassis, Bradley, Goldberg, Hood, & Swinson, 1994, 1995; Martins & Gaffan, 2000). However, despite measures of adolescent parental attachment being available, there is almost no equivalent research on the relationship between attachment and parent internalizing symptoms and disorders during adolescence. The one exception found no relationship between parental internalizing disorders and adolescent attachment (Armsden, McCauley, Greenberg, Burke, & Mitchell, 1990; see Table 1). In comparison, there is considerable research on the relationship between attachment and adolescent internalizing symptoms and disorders which will be described later.

Overall, parents with internalizing symptoms and disorders appear to have more negative relationships with their adolescent offspring. This includes less warmth and acceptance, greater control and overprotection, and increased conflict. However, specific support for an affectionless control style of parenting in depressed or anxious parents is only tentative at this stage. In relation to attachment, while research supports a relationship between maternal internalizing symptoms and disorders and children's insecure attachment, parallel research with adolescents is sparse. Lastly, no studies have examined reciprocal effects between parent internalizing symptoms and disorders and the parent–child subsystem.

### 3.4. *Adolescent functioning and psychopathology*

In addition to the functioning of the overall family system and its subsystems, family systems theory predicts that parental internalizing symptoms and disorders are likely to be related to the functioning of other individuals in the family. Much research has examined the relationship between parental internalizing symptoms and disorders and the functioning of offspring, including the occurrence of psychopathology. Adolescent-specific samples exist, but often studies have included children, adolescents, and young adults, with comparisons across developmental periods being only sporadically reported.

Research has generally reported parental internalizing symptoms and disorders to be associated with poorer offspring socioemotional and cognitive functioning (Biederman et al., 2001; Demo & Acock, 1996; Keller et al., 1986; Lewinsohn, Olino, & Klein, 2005; see Table 1). For example, maternal depressive symptoms have been associated with poorer adolescent global well-being (Demo & Acock, 1996) and offspring of parents with major depression, or both major depression and panic disorder are reported to have poorer levels of global functioning and adaptive functioning compared to offspring of non-disordered parents (Biederman et al., 2001; Keller et al., 1986). Furthermore, while maternal depressive symptoms are reportedly not associated with adolescents' socioemotional adjustment or academic performance (Demo & Acock, 1996), offspring of parents with both major depression and panic disorder are more likely to have repeated a grade at school compared to offspring of non-disordered parents (Biederman et al., 2001). No differences in global or academic functioning have been reported between offspring of parents with panic disorder only and offspring of non-disordered parents (Biederman et al., 2001).

Unfortunately, these findings have important limitations. Firstly, the use of non-validated, study-designed measures, including some single-item scales (e.g., Demo & Acock, 1996), may call into question the validity of findings. Secondly, age group comparisons have not consistently been reported, despite the inclusion of both children and adolescents (i.e., Biederman et al., 2001; Keller et al., 1986). Only one study has examined the relationship between parental internalizing disorders and offspring functioning across developmental groups (Lewinsohn et al., 2005). This study found that parental depressive disorder was associated with impaired offspring psychosocial functioning during adolescence, and that such impairment persisted into young adulthood. Interestingly, paternal but not maternal depressive disorder was associated with impairment in multiple domains of functioning during adolescence, while the reverse was true during young adulthood. Thus there appear to be important differences in the relationships between parental internalizing disorder and offspring functioning across these developmental periods.

Overall, there is some research to suggest that offspring of parents with internalizing symptoms and disorders have poorer socioemotional and cognitive functioning when compared to offspring of parents with no psychiatric disorder. While there is some evidence to suggest that impairment in adolescence persists into young adulthood (Lewinsohn et al., 2005), the continuities from childhood into adolescence are less clear. In addition, it appears that offspring may be more likely to experience difficulties when their parent is either depressed or both depressed and anxious, rather than anxious alone (Biederman et al., 2001). However, as there is little research regarding the functioning of offspring of anxious parents, more research is needed to clarify these findings.



More striking than its association with offspring general functioning is the frequently reported association between parental internalizing symptoms and disorders and psychiatric symptoms and disorders in their adolescent offspring. In total, 12 studies were found which examined the prevalence of adolescent psychiatric symptoms and disorders in samples of parents with internalizing symptoms and disorders (Biederman et al., 2001, 2006; Duggal, Carlson, Sroufe, & Egeland, 2001; Hammen & Brennan, 2003; Keller et al., 1986; McCarty & McMahan, 2003; McClure et al., 2001; Mufson, Weissman, & Warner, 1992; Sarigiani et al., 2003; Spence, Najman, Bor, O'Callaghan, & Williams, 2002; Thomas & Forehand, 1991; Warner et al., 1995; see Table 1).

With regard to internalizing symptoms, research suggests that elevated levels of parental depressive symptoms tend to be associated with more depressive symptoms in adolescent offspring (Duggal et al., 2001; Sarigiani et al., 2003; Thomas & Forehand, 1991). Furthermore, there is evidence of longitudinal relationships between maternal depressive and anxiety symptoms during early childhood and offspring internalizing and externalizing symptoms and disorders during early adolescence (McCarty & McMahan, 2003; Spence et al., 2002). Noteworthy in these relationships are potential gender effects. For example, Thomas and Forehand reported that whereas mothers' depressive symptoms were related to daughters' internalizing symptoms, fathers' depressive symptoms were related to sons' internalizing symptoms. Further to this, Duggal et al. reported an interaction between age and gender whereby maternal depressive symptoms were related to sons' depressive symptoms in childhood and to daughters' depressive symptoms in adolescence. These findings suggest that the effect of parental depression may vary not only according to the gender of the parent and child but also to the age of the child, reinforcing the need to examine age effects when sampling across developmental periods.

With regard to internalizing disorders, research suggests that offspring of parents with depressive and anxiety disorders tend to have high rates of psychiatric disorders, particularly depressive and anxiety disorders, when compared to offspring of non-disordered parents (Biederman et al., 2001, 2006; Hammen & Brennan, 2003; Keller et al., 1986; McClure et al., 2001; Mufson et al., 1992; Warner et al., 1995). In one study, 65% of offspring of parents with a depressive disorder had at least one psychiatric diagnosis (Keller et al., 1986). Major depressive disorder was the most common (24%), with the risk of first depressive episode increasing sharply during mid-adolescence. In another study, offspring of mothers with an anxiety disorder were twice as likely to have an anxiety disorder by age 15 compared to offspring of mothers with no disorder (McClure et al., 2001). However, in this latter study, offspring of fathers with an anxiety disorder were not at increased risk of anxiety disorder.

Further to these general findings, two research groups have contributed extensive information about the prevalence of psychiatric disorders in offspring of parents with either or both depressive or anxiety disorders (Biederman et al., 2001, 2006; Mufson et al., 1992; Warner et al., 1995). Unfortunately, the samples utilized by these researchers have spanned from childhood through to young adulthood, and results have not been reported by age or developmental period. Thus definitive conclusions regarding the specificity of their findings to adolescent populations cannot be drawn. Nevertheless, some general assumptions regarding the co-occurrence of internalizing disorders in parents and adolescents can be made.

Each of these groups has noted differential findings by parent diagnosis, highlighting the importance of studying depression and anxiety in parallel. Studies by one group reported that not only was parental major depression and panic disorder associated with offspring internalizing disorders but that offspring of parents who were both depressed and anxious were also at greatest risk of having major depression and anxiety disorders when compared to offspring of parents who were depressed only or had other disorders (Mufson et al., 1992; Warner et al., 1995). The second group reported similar associations between parent and offspring internalizing disorders, noting that offspring risk for specific psychiatric disorders was dependent on whether their parents were depressed, anxious or both (Biederman et al., 2001, 2006). Further examination found that risk for social phobia and separation anxiety disorder in offspring was predicted by the same disorder in parents, while risk for agoraphobia and obsessive compulsive disorder in offspring was predicted by parental panic disorder (Biederman et al., 2006). The authors concluded that the expression of anxiety disorders in offspring at risk for panic disorder may be influenced by differing risk factors.

In line with the above, researchers have reported on various family systems factors which may influence the effect of parent internalizing symptoms and disorders on offspring. Family conflict (Burt et al., 2005), family warmth (Vandewater & Lansford, 2005), marital conflict (Du Rocher Schudlich & Cummings, 2003), parental psychological control (Robila & Krishnakumar, 2006), and mother–adolescent conflict (Vandewater & Lansford, 2005), but not maternal criticism (Frye & Garber, 2005), have been variously reported to mediate relationships between parent and offspring internalizing symptoms and disorders. Furthermore, one study reported that while the relationship between

maternal depressive symptoms and offspring externalizing disorders was mediated by parent–child relationship difficulties, the relationship between maternal depressive symptoms and offspring internalizing disorders was mediated by low maternal social support (McCarty & McMahon, 2003). This suggests that the quality of relationships outside, as well as within, the family may be of importance when examining factors which may influence the effect of parent internalizing symptoms and disorders on offspring.

In summary, it appears that parental internalizing symptoms and disorders are closely associated with internalizing symptoms and disorders in their adolescent offspring. There is some research to suggest that this association may differ depending on the gender of the parent and the offspring, the age of the offspring, and the specific type of disorder. Furthermore, there is some support for the role of family systems factors in mediating the relationship between parent symptoms, particularly maternal depression, and adolescent symptoms. While reciprocal effects in parent and adolescent internalizing symptoms and disorders were not examined in these studies, there is some support for such effects as will be discussed later.

The close association between parental and offspring internalizing symptoms and disorders naturally gives rise to the question of whether this is due to genetic or environmental factors. A growing number of studies have examined genetic contributions to internalizing symptoms and disorders. While these studies have consistently confirmed a genetic influence for both depression and anxiety, this influence has tended to be modest to moderate (Eley, 1999). It is therefore without question that environmental factors also play a significant role.

#### **4. Families of adolescents with internalizing symptoms and disorders**

##### *4.1. Family system*

In line with research on parents, research on families of adolescents with internalizing symptoms and disorders has generally reported that family dysfunction is common. However, much of this research has focused solely on depression, with anxiety being once again relatively neglected.

In general, adolescent depressive symptoms and disorders are reported to be related to both overall family dysfunction (McFarlane, Bellissimo, & Norman, 1995; Tamplin, Goodyer, & Herbert, 1998; see Table 1) and to specific aspects of family dysfunction including greater family conflict, lower family cohesion, reduced family support, and adolescents' dissatisfaction with family functioning (Aseltine, Gore, & Colten, 1994; Cumsille & Epstein, 1994; De Ross et al., 1999; Greenberger & Chen, 1996; McKeown et al., 1997; Sheeber & Sorensen, 1998; see Table 1). Such relationships have been reported to be stronger in early, compared to late, adolescence (Greenberger & Chen, 1996), and low family cohesion to predict an increase in adolescent depressive symptoms over 1 year (McKeown et al., 1997).

Despite these generally consistent findings, there is some variation in reported associations between adolescent internalizing disorders and family functioning by informant. For example, Sheeber and Sorensen (1998) reported that while adolescents with major depression and their mothers reported their families to be less cohesive and more conflictual compared to families of non-disordered adolescents, observer ratings of aggression during mother–adolescent problem-solving interactions did not differ by adolescent depression status. A possible explanation for such findings may be that the awareness of being observed may have reduced the occurrence of negative behaviors. Although research suggests that the presence of an observer does not compromise the validity of parent–child interactions, observations conducted in structured or artificial settings may not typify interactions in naturalistic settings (e.g., at home; Gardner, 2000).

Interestingly, it has also been reported that there may be differential effects of difficulties in family systems for depressed and non-depressed adolescents. In a 3-year longitudinal study of adolescent depression, Aseltine et al. (1994) categorized adolescents as either chronically depressed or asymptomatic based on depressive symptom during the first two waves. In the third wave, chronically depressed adolescents reported less family support, more family relationship problems and more negative family events compared to asymptomatic adolescents. However, while a lack of family support and more family relationship problems, but not more negative family events, were associated with higher concurrent depressive symptoms in asymptomatic adolescents, the reverse was true for chronically depressed adolescents. That is, depressed adolescents appeared to be reactive to negative family events, but not to a lack of family support or family relationship problems. Despite the longitudinal design, this study did not examine reciprocal effects as analyses were restricted to relationships between variables within the third wave.



Only two studies have examined anxiety in addition to depression (Millikan et al., 2002; Nilzon & Palmerus, 1997; see Table 1). One study reported that parents of depressed and anxious adolescents perceived their families to be less happy, less confident in problem solving and less likely to share decision making compared to parents of adolescents who were not depressed or anxious (Nilzon & Palmerus, 1997). It is unclear, however, how representative this study was of anxious adolescents. The sample size was small and while all adolescents were reported to have received treatment for depression and were administered a self-report depression inventory, no information on the assessment of anxiety was provided. A more recent, and larger, study involving adolescent twins, found that poorer family functioning was significantly related to symptoms of depression, but was not significantly related to symptoms of anxiety (Millikan et al., 2002).

Overall, there is considerable support for a relationship between family dysfunction and adolescent depressive symptoms and disorders. While some research indicates that family dysfunction predicts the development of depression in adolescents, such research is limited and lacks analysis of reciprocal effects. Currently there is insufficient research on the relationship between family functioning and anxiety in adolescents to draw any conclusions. This highlights an interesting and important area for future research.

#### 4.2. Spouse subsystem

In line with research on parents with internalizing symptoms and disorders, subsystems within the families of adolescents with internalizing symptoms and disorders have also been examined. Studies of the spouse subsystem in families of depressed and anxious adolescents have reported on similar aspects of marital functioning, including divorce, marital satisfaction, and interparental conflict.

In general, adolescent depressive disorder and internalizing symptoms tend to be associated with significant difficulties in the spouse subsystem. Adolescents with a history of depressive disorder, regardless of whether or not their mother is also depressed, are more likely to have parents who are divorced (Shiner & Marmorstein, 1998). They are also likely to have mothers who are not married to their biological father and who report lower satisfaction with their current marital relationship than mothers of non-depressed offspring (Hammen, Rudolph, Wiesz, Rao, & Burge, 1999). Furthermore, there is longitudinal evidence that parental divorce, marital transitions, and low marital satisfaction during the first 5 to 15 years of a child's life are associated with higher levels of internalizing symptoms in adolescence (Ge, Natsuaki, & Conger, 2006; Kim, Capaldi, & Stoolmiller, 2003; Spence et al., 2002; see Table 1). However, Ge et al. suggested that it may not be divorce per se that is detrimental to adolescent well-being, but rather the culmination of divorce and ensuing stressful occurrences and circumstances. This was supported by their finding that the impact of parental divorce on adolescent depressive symptoms is mediated by stressful life events experienced shortly after divorce.

Adolescent internalizing symptoms and depressive disorder are also frequently associated with interparental conflict (Davies & Lindsay, 2004; Doyle & Markiewicz, 2005; El-Sheikh & Elmore-Staton, 2004; Grych, Raynor, & Fosco, 2004; Nilzon & Palmerus, 1997; Puig-Antich et al., 1993; see Table 1). For example, Puig-Antich et al. reported that together with general marital problems, parents of depressed children and adolescents experienced more frequent irritability, quarrelling, and disagreements over childrearing. The significance of disagreements over childrearing may highlight *content* an additional characteristic of interparental conflict that may be of import to this area (cf. *quality*, Du Rocher Schudlich & Cummings, 2003).

Further to the relationship between interparental conflict and adolescent internalizing symptoms, such has been found to be mediated by other family system factors including parental psychological control, offspring involvement in interparental conflict, parental attachment, and parent-child conflict (Doyle & Markiewicz, 2005; El-Sheikh & Elmore-Staton, 2004; Grych et al., 2004; see Table 1). Gender differences have also been noted in that interparental conflict tends to be more strongly related to internalizing symptoms in girls than boys (Davies & Lindsay, 2004). Davies and Lindsay reported that such gender differences were partly explained by girls' tendencies to experience higher levels of communion, a construct encompassing social connectedness and concern for others. Thus the effect of interparental conflict on adolescent internalizing symptoms may be due in part to its effect on other parts of the family system or individual member characteristics.

Unfortunately, many of the above studies have included children as well as adolescents and have not reported age group comparisons. In addition, no studies have reported on spouse subsystem functioning in relation to adolescent anxiety disorders, and the measures utilized to assess internalizing symptoms have often not allowed for comparisons

between depressive and anxiety symptoms. Thus, the specificity of the findings to adolescents remains unclear. It also remains to be determined whether there are differential effects for depression compared to anxiety.

In summary, there appears to be considerable support for an association between adolescent internalizing symptoms and disorders and poorer functioning within the spouse subsystem. This includes more marital dissatisfaction, more parental conflict, and increased rates of divorce and marital transitions. Furthermore, this association appears to be mediated by other family system factors. While there is some research which suggests that dysfunction in the spouse subsystem predicts the development of adolescent internalizing symptoms (e.g., Doyle & Markiewicz, 2005; Spence et al., 2002), no study to date has examined possible changes in spouse subsystem functioning following the onset of depression or anxiety in children and adolescents. Thus, reciprocal effects cannot be ruled out.

#### 4.3. Parent–child subsystem

Much research has examined parent–child relations in families of adolescents with depression and anxiety. This research has generally found such relations to be characterized by negative interaction patterns and suboptimal bonding.

As mentioned earlier, there is some evidence that depressed parents tend to have an affectionless control style of parenting characterized by low levels of warmth and affection and high levels of control and overprotection. Affectionless control parenting has been similarly associated with adolescent depressive symptoms (Gil-Rivas, Greenberger, Chen, & Lopez-Lena, 2003; Greenberger & Chen, 1996; McFarlane et al., 1995; see Table 1) and adolescent internalizing symptoms (Muris, Meesters, & van den Berg, 2003; see Table 1). However, the limited longitudinal research available has reported mixed results in relation to the predictive validity of such parenting to adolescent symptoms. In one study, high parental rejection (i.e., a lack of warmth), but not parental control, significantly predicted adolescent depressive symptoms 12 months later (Robertson & Simons, 1989; see Table 1). In contrast, another study found that parental psychological control, but not behavioral control or warmth, predicted higher adolescent internalizing symptoms 2 years later (Doyle & Markiewicz, 2005; see Table 1). Of import to the current review, the latter study examined reciprocal effects between parenting style and internalizing symptoms. While the researchers reported that internalizing symptoms did not predict changes in parenting style, adolescent self-esteem and parental warmth were reciprocally related. That is, parental warmth predicted increases in self-esteem, and self-esteem predicted increases in parental warmth.

In contrast to the apparent associations between parenting style and adolescent depression, limited conclusions can be drawn regarding associations between parenting style and adolescent anxiety. Despite empirical evidence that parental affectionless control is associated with offspring anxiety, this research has mostly involved children (see Rapee, 1997 for a review). The few studies that have focused on adolescents have measured internalizing symptoms generally, with no separation between anxious and depressive symptoms (Doyle & Markiewicz, 2005; Muris et al., 2003).

Other aspects of the parent–child subsystem have been associated with internalizing symptoms and disorders during adolescence including more conflict, more problematic communication and less effective problem solving. Parent–child conflict, in particular, has been frequently associated with adolescent internalizing symptoms and disorders both cross-sectionally and longitudinally (Brendgen, Wanner, Morin, & Vitaro, 2005; Forehand et al., 1988; Gil-Rivas et al., 2003; Greenberger & Chen, 1996; Marmorstein & Iacono, 2004; Rueter, Scaramella, Wallace, & Conger, 1999; Vazsonyi & Belliston, 2006; see Table 1). Moreover, one study reported this association to be stronger during early rather than late adolescence (Greenberger & Chen, 1996).

In general, research suggests that parent–child interactions in families of depressed adolescents are highly negative. For example, diffuse parent–child relationship difficulties, including poorer communication, less warmth, and more tension, hostility and punishment, have been reported in families of offspring with major depression (Puig-Antich et al., 1993; see Table 1). Such findings are further supported by observational studies of depressed offspring and their parents which indicate that communication during problem-solving interactions tends to be hostile, ineffective, and often incongruent (Dadds, Sanders, Morrison, & Rebgetz, 1992; Sanders, Dadds, Johnston, & Cash, 1992; Slesnick & Waldron, 1997; see Table 1). Unfortunately, much of this research has involved both children and adolescents without reporting age group comparisons.

Parent–child interactions in families of anxious adolescents also appear to be highly negative. At the symptom level, adolescent anxiety has been associated with lower parental support and affection, and higher conflict (Hernandez-

Guzman & Sanchez-Sosa, 1996; Vazsonyi & Belliston, 2006), as well as parents who are more socially isolating, more concerned about others' opinions, and more ashamed about their child's shyness and under-performance (Caster, Inderbitzen, & Hope, 1999). At the disorder level, mothers of anxious offspring have been observed to be more intrusively involved and more negative and critical than mothers of non-anxious offspring during problem-solving interactions (Hudson & Rapee, 2001). This latter study found no differences in results between child and adolescent offspring (i.e. aged 7–9, 10–11 and 12–15 years).

Notably, there is some research which has explored possible reciprocal relations between parent–child relations and adolescent anxiety. In one study, maternal criticism predicted higher levels of adolescent internalizing symptoms 2 years later, while adolescent internalizing symptoms predicted later maternal criticism (Frye & Garber, 2005; see Table 1). However, the relationships were no longer significant once maternal depressive history and baseline measures (internalizing symptoms/maternal criticism) were controlled. Another study reported that while parents of offspring with anxiety disorders did not perceive themselves to be more protective overall compared to parents of non-disordered offspring, mothers did report that they were more protective of their anxious offspring than they were of the offspring's non-disordered sibling (Hudson & Rapee, 2005). Paternal protectiveness did not differ between siblings. The authors suggested that these findings lend support to a reciprocal relationship between parenting and offspring anxiety. Unfortunately, this latter study did not report comparisons between child and adolescent offspring.

As mentioned earlier, research investigating the relationship between parental attachment and internalizing symptoms and disorders has focused primarily on young children. However, one longitudinal study has reported on adolescent outcomes in relation to attachment style assessed during infancy (Warren, Huston, Egeland, & Sroufe, 1997; see Table 1). In this study, offspring classified as having an ambivalent style of attachment at 12 months of age using the Strange Situation Procedure, were more likely to have an anxiety disorder at 17.5 years of age compared to those not classified as such. This study suggests that early attachment patterns may have lasting consequences for offspring anxiety.

Given that assessment methods such as the Strange Situation Procedure are inappropriate for the measurement of attachment in adolescents, other measures have been developed. One such measure is the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1989). The IPPA is a self-report questionnaire which measures the quality of children's current attachment to their mother, their father, and their peers. Rather than providing an attachment classification as per the Strange Situation Procedure, the IPPA yields a score on a continuous scale from poor to good quality of attachment.

Studies utilizing the IPPA have consistently reported poor parental attachment to be associated with adolescent depressive and anxiety symptoms (Armsden & Greenberg, 1987; Armsden et al., 1990; Buist, Dekovic, Meeus, & van Aken, 2004; Formoso, Gonzales, & Aiken, 2000; Muris et al., 2003; Muris, Meesters, van Melick, & Zwambag, 2001; Papini, Roggman, & Anderson, 1991; Sund & Wichstrom, 2002; see Table 1), as well as adolescent depressive disorders (Armsden et al., 1990; Essau, 2004; see Table 1). These have included longitudinal relationships between poor parental attachment and later internalizing symptoms (Buist et al., 2004; Sund & Wichstrom, 2002). Of import to the current review, Buist et al. reported that not only did parental attachment at baseline predict adolescent internalizing symptoms at 1-year follow-up, but baseline internalizing symptoms predicted later parental attachment. However, reciprocal effects were not observed between the 1- and 2-year follow-up assessments.

Reciprocal relationships between parental attachment and adolescent internalizing symptoms were also examined by Doyle and Markiewicz (2005; see Table 1) using the Relationship Questionnaire (Bartholomew & Horowitz, 1991). This measure is a self-report questionnaire which can be used either to classify attachment style into one of four categories or to give a continuous rating of attachment quality, the latter of which was used in this study. The study found that while poorer attachment quality predicted internalizing symptoms 2 years later, internalizing symptoms did not predict later attachment. Thus, reciprocity was not supported.

A third measure of attachment is the Attachment Questionnaire for Children (AQ-C). Adapted from the adult version (Hazan & Shaver, 1987), the AQ-C presents respondents with three descriptions of feelings and relationships from which they must select the one that best describes them. The respondent's choice classifies them as securely, avoidantly, or ambivalently attached. Using this measure, Muris et al. (2001) reported that adolescents who were classified as avoidantly or ambivalently attached had higher levels of depressive and anxiety symptoms than adolescents who were classified as securely attached. These results were replicated in a later study including older adolescents (Muris et al., 2003).

Overall, the parent–child subsystems of adolescents with internalizing symptoms and disorders tend to be more dysfunctional than those of adolescents without such symptoms. Relationships are likely to be more conflictual,

communication more problematic and problem solving less effective. Parents are also more likely to have an affectionless control style of parenting. Adolescents with internalizing symptoms and disorders are likely to have a poorer quality of attachment with their parents, with some longitudinal research suggesting that poor attachment quality may contribute to the development of depression and anxiety. Although, two recent studies have examined reciprocal effects in relation to parent–child subsystem functioning and adolescent internalizing symptoms, results remain equivocal.

#### 4.4. Parental psychopathology

As previously described, research involving samples of parents with internalizing symptoms and disorders have often reported poorer offspring functioning, including higher rates of psychopathology. This section reviews converse research involving offspring with internalizing symptoms and disorders that has investigated associations with parental psychopathology in such samples.

Research suggests that parental depressive symptoms during childhood are related to offspring depressive symptoms during adolescence. This has been demonstrated by two studies utilizing longitudinal data from the Oregon Youth Study which followed a group of boys aged 9 to 10 years up to age 23 to 24 years (Kim et al., 2003; see Table 1), and their siblings (Compton, Snyder, Schrepferman, Bank, & Shortt, 2003; see Table 1). Both studies reported that maternal depressive symptoms predicted later adolescent depressive symptoms. However, Kim et al. (2003) reported that this was only true when paternal depressive symptoms were also present, suggesting an additive effect of parent depression. Unfortunately paternal depressive symptoms were not included by Compton et al. (2003), thus restricting conclusions.

Research also suggests that parents of offspring with depressive disorders have increased rates of psychiatric disorders and symptoms (Essau, 2004; Hammen et al., 1999; Marmorstein & Iacono, 2004; Shiner & Marmorstein, 1998; see Table 1). For example, one study reported that 84% children and adolescents treated for depressive disorders, had a mother with a lifetime history of one or more psychiatric disorders, primarily depressive disorders (70%; Hammen et al., 1999). In addition, 72% of fathers were reported by mothers to have a lifetime history of one or more psychiatric disorders, primarily drug or alcohol abuse or dependence (33%). Noteworthy in this research is the observation that family and adolescent functioning may be significantly more compromised when both parent and adolescent are depressed, compared to when only the adolescent is depressed. Specifically, Essau (2004) reported that depressed adolescents who also had depressed parents reported more recurrent depressive episodes and higher suicidal ideation, while Shiner and Marmorstein (1998) reported that depressed adolescents who also had a depressed mother reported lower family cohesion and poorer parent–child relationships. These studies provide further support for the proposal that depression in more than one family member may have an additive effect on the family system and its members.

There is only limited research regarding parental psychopathology and anxiety symptoms and disorders in adolescents. Just one study has reported on rates of depressive and anxiety disorders in parents of offspring with anxiety disorders (Cooper, Fearn, Willetts, Seabrook, & Parkinson, 2006; see Table 1). This study found that mothers of offspring with anxiety disorders had higher rates of current and lifetime anxiety disorder compared to mothers of non-anxious offspring, while fathers of anxious offspring also had higher rates of lifetime anxiety disorder, but not current anxiety disorder. Similar patterns were reported for rates of parental depressive disorder. The only other related study did not report on the prevalence of internalizing disorders in parents, but did note similar findings regarding the additive effects of anxiety in multiple family members to those reported for depression (Essau, 2004; Shiner & Marmorstein, 1998). Specifically, they reported that offspring with anxiety disorders had more impaired global functioning when their mother had elevated anxiety symptoms, suggesting that anxiety may be more disabling for offspring when parents are also anxious (Manassis & Hood, 1998). Unfortunately, both Cooper et al. (2006) and Manassis and Hood (1998) included children and adolescents in their studies and did not report age-based comparisons.

Overall, studies of adolescents with internalizing symptoms and disorders provide additional support for the co-occurrence of parent and adolescent psychopathology, particularly depressive disorder. In addition, there is some indication that parental depressive symptoms may predict the development of depressive symptoms in adolescents, although reciprocal effects were once again not examined in these studies. Also of note are possible additive effects of internalizing symptoms and disorders in multiple family members on the family system. Finally, there are once again few studies of anxiety symptoms and disorders in this area and none specific to adolescents.



## 5. Reciprocal effects in the family system

From the research presented thus far it can generally be concluded that parent and adolescent internalizing symptoms and disorders are associated with poorer family functioning, poorer marital relationships, more negative parenting behaviors, poorer quality of attachment, and higher rates of parent/adolescent psychopathology. However, the main limitation of this research is that the majority of findings are based on correlational designs. While virtually all authors caution that the direction of influences cannot be determined in such studies, their discussion of results is generally biased towards the postulated effects of parents on families, and of parents and families on children. These limited interpretations appear to conceptualize children as being passively molded by their family experiences, and parents as being the creators of those experiences. Recalling the principles of interdependence and circularity posited by family systems theory, this appears to be a rather compromised conceptualization of relationships within families.

Longitudinal studies have been conducted which support the hypothesis that parents' internalizing symptoms and disorders affect the spouse and parent–child subsystems and contribute to the development of internalizing symptoms and disorders in adolescents. However, these studies have typically been designed and their data analyzed in such a way that only the effects of parents and families on adolescents have been examined. Studies which are bidirectional in their analysis of effects are very small in number and have provided mixed results.

While one study reported reciprocal relationships between adolescent internalizing symptoms and parental attachment (Buist et al., 2004), another reported that reciprocal relations between adolescent internalizing symptoms and maternal criticism were no longer significant once maternal depression and baseline measures were controlled (Frye & Garber, 2005). A third study failed to confirm reciprocity between adolescent internalizing symptoms and either parental attachment or parental psychological control (Doyle & Markiewicz, 2005). However, this last study did report significant reciprocity between adolescent self-esteem and parental warmth.

In addition to these studies, four longitudinal studies examining family or parental support and adolescent depression have also examined reciprocal effects. Generally, the construct of family support in these studies has represented adolescents' perception of the amount of guidance, intimacy, and care they receive from their parents. Thus, this variable tends to reflect the quality of the parent–child relationship rather than a more general measure of family functioning. First, Slavin and Rainer (1990) reported that not only was lower family support associated with higher depressive symptoms in adolescent girls at 8-month follow-up, but higher depressive symptoms were also associated with a subsequent decrease in girls' reported family support. There was no significant relationship between family support and depressive symptoms for boys.

A similar study by Sheeber, Hops, Alpert, Davis, and Andrews (1997), however, did not confirm these findings. They utilized both adolescent and maternal reports of adolescent depressive symptoms, maternal support and mother–child conflict as well as observed problem-solving interactions. The findings indicated that support and conflict were significantly related to adolescent depressive symptoms 1 year later, but that adolescent depressive symptoms were not related to subsequent levels of family support and conflict, even after controlling for gender. Regarding depressive disorder, Stice, Ragan, and Randall (2004) reported that while low parental support was related to subsequent onset of major depression in adolescent females, major depression was not related to a subsequent levels of parental support. Similarly, Young, Berenson, Cohen, and Garcia (2005) reported that adolescent depressive disorder did not predict changes in parental support, however, they also reported that low parental support did not predict onset of depressive disorder unless accompanied by low peer support.

The contradictory findings of these studies highlight the need for more longitudinal studies which are designed to allow for exploration of possible reciprocal effects between internalizing symptoms and disorders and the family system. Support for reciprocity in internalizing symptoms and disorders between family members can, however, be found in studies examining the co-occurrence of parental and child psychopathology. In particular, studies examining the timing of parents' and children's psychiatric episodes suggest a relationship which is more complex than the typical model of transmission of psychopathology from parent to child. For example, Hammen, Burge, and Adrian (1991) studied the timing of depressive episodes in a longitudinal study offspring and mothers with major depression, bipolar disorder, a chronic medical illness or no disorder. They reported that while in most cases maternal depressive episodes preceded offspring depressive episodes, there were some cases of offspring depressive episode preceding the maternal depressive episode. Similarly, in Keller et al.'s (1986) study of offspring of depressed parents, 21% of offspring first psychiatric episodes (any disorder) occurred before the parent's first depressive episode. However, all offspring

depressive episodes occurred subsequent to a parental depressive episode. Neither study reported separate findings for children and adolescents.

It seems quite certain that parents play an important role in the onset of their offspring's psychiatric episodes, either through genetic predisposition or through the expression of sub-clinical symptoms. However, it is also highly likely that, at least in some cases, offspring also play a role in the onset and maintenance of parents' psychiatric episodes.

Consistent with this proposal, support for reciprocity between parents' and adolescents' symptoms was reported in a longitudinal study by Ge, Conger, Lorenz, Shanahan, and Elder (1995) using a cross-lagged effect model. In this study, adolescents and their parents completed a measure of psychological distress (anxiety, depression and hostility) three times: when adolescents were in seventh grade, eighth grade, and ninth grade. The authors reported that adolescents' and parents' psychological distress were significantly related across time. That is, parents who reported higher symptoms in one year had adolescents who tended to report higher symptoms in the following years. Furthermore, adolescents who reported higher symptoms in one year had parents who tended to report higher symptoms in the following years. The authors also examined effects by age and gender, and reported that the observed relationships were strongest for mothers and sons in early adolescence and fathers and daughters in later adolescence. While it is possible that other extraneous factors may impact on parents and adolescents at different times, this study lends some support for reciprocity in parent and adolescent symptoms.

In sum, there is limited research which explores possible reciprocal effects of internalizing symptoms and disorders in families. Further, the findings of studies to date have been mixed. Additional research which is carefully designed to enable the examination of reciprocal effects is clearly needed to explore the impact that internalizing symptoms and disorders have on the families and family subsystems of adolescents.

## 6. Limitations

There are a number of limitations in the current literature on the effects of internalizing symptoms and disorders in families. The two main limitations which have already been discussed are the limited interpretation possible from correlational studies and the paucity of studies examining reciprocal effects. However, there are additional limitations. The first relates to the large number of measures and methods that have been utilized to study internalizing symptoms and disorders and various family constructs. These include self-report questionnaires, diagnostic interviews, and observational rating scales. This wide variability in study designs limits comparability across studies. However, it would not be pragmatically possible, nor always theoretically justified, for studies to utilize the same sets of measures and methods. Therefore, it is unlikely that this situation will change considerably. It is important however that authors justify their selections and report the statistical reliability and validity of their measures, including comparisons with other available measures.

Along with differences in measures and methods, studies often differ with regard to informant. For example, family functioning or offspring symptoms may be reported by mothers, fathers, or offspring, and results can vary considerably depending on the chosen informant. Researchers have tried to overcome this difficulty by obtaining data from more than one informant or by using more than one method (e.g., both self-report and observation). While this seems to be an acceptable solution, the difficulty then becomes one of how to analyze multiple sources of information. The simplest way is to collate the information to form one factor. However, in using this method the richness of information may be lost. The preferred method is to analyze the data at the individual level and by method if applicable. However, while this may provide a wealth of information, differences in findings between informants and methods can be difficult to interpret and even harder to apply clinically. Such issues lead to continued debate regarding the best way to utilize cross-informant data (Renk, 2005) and how to interpret informant discrepancies (De Los Reyes & Kazdin, 2005).

An additional limitation relates to the fact that samples have not always been well defined (e.g., Nilzon & Palmerus, 1997). As previously discussed, there is a high rate of comorbidity between depression and anxiety. However, many studies examining depression have not reported whether the participants were also anxious, and many studies examining anxiety have not reported whether the participants were also depressed. Other studies have used measures which examine internalizing symptoms and disorders simultaneously, restricting comparisons of depression and anxiety. Therefore it is often unclear whether there are real differences and similarities between findings related to depression and those related to anxiety. Further, studies have occasionally not specified whether their sample has a

diagnosable disorder or whether participants had been categorized as disordered based only on elevated symptomatology.

A fourth limitation relates to the limited research with adolescent samples. In some areas, such as the relationship between attachment and parental internalizing symptoms and disorders, there is almost a complete lack of research on adolescents. In other areas, studies have included children, adolescents and young adults, with few reporting separate results and others simply statistically controlling for age. While studies which have included samples spanning childhood through to young adulthood are informative, failure to make age-based comparisons limits the conclusions that can be drawn regarding specific developmental periods.

Fifthly, while there is a large amount of research on depression, corresponding research on anxiety is less abundant. However, this appears to be changing with more studies on anxiety being published in recent years. Lastly, one of the most often criticized features of family research has been the lack of inclusion of fathers. In the past this lack has been attributed to a belief that mothers as the primary caregivers play a greater role in their child's life. However, researchers are becoming increasingly interested in the role of fathers, especially with the growing trend towards shared parenting. This change is evident in the literature presented here, in that many studies have included both mothers and fathers. In addition, the view that fathers are more difficult to engage in research appears to be inaccurate, as many studies have reported participation rates of fathers to be comparable to those of mothers. This has allowed for better examination of the differential effects of mothers and fathers, with research tending to indicate a greater influence of maternal factors (see [Connell & Goodman, 2002](#) for a review). However, it remains to be seen whether the increasing role of fathers in child care will impact on such conclusions.

## 7. Summary and conclusions

By presenting the findings from studies of internalizing symptoms and disorders in families of adolescents from a family systems perspective, this review has aimed to highlight the need for future research to more fully consider possible reciprocal effects in families. Despite some important limitations, there is considerable evidence in the current literature to suggest that parent and adolescent internalizing symptoms and disorders are associated with poorer functioning at various levels of the family system. This includes poorer functioning in the overall family system, poorer marital relationships, more negative parenting styles, poorer parental attachment, and higher rates of parent and child psychopathology. However, the majority of these studies have only allowed for the examination of unidirectional effects.

Viewed within a family systems framework, models which represent only the effects of parents and families on children are overly simplistic and ignore the circularity of effects and interdependence of all members in the family system. Very few longitudinal studies have explored possible reciprocal effects of internalizing symptoms and disorders; that is, both the effects of parents and families on children and the effects of children on parents and families. Furthermore, the results of the few studies that have examined such effects are equivocal. Clearly more research which is designed to allow for the exploration of possible reciprocal effects of internalizing symptoms and disorders in families with adolescents is needed.

The literature reviewed here has been presented as it applies to the various subsystems of the family. While these subsystems each have distinct characteristics, it is interesting to note their similarities in relation to internalizing symptoms and disorders in family members. Aspects such as communication, affection, conflict, satisfaction, and closeness often appear across multiple subsystems as in some way being related to internalizing symptoms and disorders. This suggests that the expression of symptoms may have common effects on relationships within families.

Various directions for future research have been highlighted, with the most pertinent being the need to explore possible reciprocal effects in families with internalizing symptoms and disorders. Parental attachment and the role of fathers have also been noted as areas that would benefit from further research. Examination of other developmental periods and disorders from this same perspective would also be of interest. It is expected that such research would reach similar conclusions to those drawn here, although one might predict that strengths of relationships would vary as a function of age and specific disorder. Lastly, considering that today's adolescents live in quite diverse home environments, examination of how the relationships described in this review differ across family structures (e.g. two-parent, single-parent, and step-families) would be worthwhile. Such is beyond the scope of the current review, but may provide additional insight into the relations described.



Better understanding the processes at play in families affected by internalizing symptoms and disorders is necessary for developing and refining preventative and treatment interventions. There is already an increasing awareness of how parental mental health impacts on families and the importance of monitoring and supporting children of parents with mental illness. However, this is not always equally extended to how families are affected by children's mental health. Family systems theory can provide a useful framework for exploring and understanding the antecedents and consequences of mental illness in families.

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