

Parenting and Obsessive Compulsive Symptoms: Implications of Authoritarian Parenting

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Cognitive behavioral theories of obsessive-compulsive disorder (OCD) have hypothesized a central role of social learning in the development of OCD. Research indicates that learning via key developmental relationships, such as parent–child interactions, may account for the emergence and maintenance of OC symptoms in adulthood. Baumrind identified three parental authority prototypes or styles, including permissive, authoritative, and authoritarian, that differ on the two dimensions of nurture and behavioral control. Permissive parents allow their children to do as they wish with little discipline, whereas authoritative parents implement reasonable guidelines while still providing a warm and nurturing environment. The third style, authoritarian, represents parenting that is rigid and values strict adherence to rules with lower levels of nurturing. To date, there has been no study examining these parenting styles and OCD symptomatology. The current investigation examined the relationships between parenting styles, obsessive-compulsive (OC) symptoms, and OC-related dysfunctional beliefs (i.e., “obsessive beliefs”) in a nonclinical sample ($N = 227$). Participants completed measures of these constructs, as well as a measure of general mood and anxiety symptoms. Results indicated that the authoritarian parenting style was significantly associated with both OC symptoms and OC beliefs (e.g., beliefs about the importance of thoughts and personal responsibility), even after controlling for general distress. Analyses also revealed that OC beliefs act as a partial mediator of the relationship between parenting style and OC symptoms. Findings are discussed in light of the implications for future research, particularly that pertaining to risk for OCD and the development of vulnerability factors.

Keywords: obsessions; compulsions; obsessive-compulsive disorder; parenting styles; authoritarian parenting; dysfunctional beliefs

Obsessive-compulsive disorder (OCD) is a heterogeneous psychological disorder characterized by recurrent and distressing intrusive thoughts, images, or impulses (obsessions) that provoke anxiety and distress and repetitive behaviors (compulsions) performed to reduce this distress. Obsessions and compulsions may concern various themes, with the most common being contamination, harm or injury, sex, religion, violence, and order/symmetry (McKay et al., 2004). Historically considered a rare disorder, epidemiological findings now indicate that OCD has a lifetime prevalence of approximately 1.6% to 3.5% (Angst et al., 2004; Kessler et al., 2005). Research conducted during the last few decades has dramatically expanded our understanding of the phenomenology and treatment of OCD, yet many mechanisms and factors involved in the etiology and maintenance of this disorder remain unknown. Biologically based investigations, including family and twin studies, have provided evidence for the role of genetics in the development of OCD (van Grootheest, Cath, Beekman, & Boomsma, 2005, 2007; van Grootheest et al., 2008). What has also emerged from this research is that any number of environmental factors, working either in conjunction with one another or as modulators of certain genotypes, may play an additional role in the etiology of OCD. With respect to specific environmental factors that could be involved in the development of OCD, research has slowly begun to identify a number of variables that fall within the broad category of psychosocial factors, including certain beliefs (Obsessive-Compulsive Cognitions Working Group [OCCWG], 2003), trauma (Cromer, Schmidt, & Murphy, 2007), and environmental agents such as bacterial infections (Swedo et al., 1998). The present study focused on another possible factor: parenting styles.

Cognitive behavioral models of anxiety disorders, including OCD, posit that social learning plays a central role in the development of these conditions (Manassis, Bradley, Goldberg, Hood, & Swinson, 1994; Vasey & Dadds, 2001). These models suggest that the family unit plays a crucial role in social learning during childhood and adolescence (Chorpita & Barlow, 1998). Investigations have consistently provided support for the link between variations in the familial environment and the subsequent emergence of psychopathology (Stark, Humphrey, Crook, & Lewis, 1990). Within the general familial environment, the parent-child relationship is believed to provide the groundwork for social learning. In most families, parents not only “design” the structure of the basic familial environment for their children, but also influence other opportunities their children may have for additional social learning outside of the direct family unit.

A substantial literature has investigated the role parenting exerts on a child's development. Two main parenting factors or dimensions have been identified, including warmth/nurturance and behavioral control. High levels of warmth/nurturance reflect parenting that is child-centered, accepting, and responsive. High levels of behavioral control are indicative of dictatorial and demanding parenting (Rapee, 1997). Baumrind (1971) conducted extensive, large-scale laboratory and naturalistic investigations focused on differences in parenting styles and the two dimensions of warmth and control. Her work identified three parental authority prototypes or styles—permissive, authoritative, and authoritarian—which are characterized as being either high or low on the two parenting dimensions. The permissive parenting style is high on warmth/nurturance and low on behavioral control. This type of parenting allows children to do as they wish with little discipline. Authoritarian parenting is low on warmth/nurturance and very high on behavioral control, and represents parenting that is rigid and values strict adherence to rules with relatively less affection and nurturing. Finally, the third style, authoritative parenting, is high on both dimensions. That is, authoritative parents implement reasonable guidelines while still providing a warm and nurturing environment.

Extensive research has extended Baumrind's seminal work, and has linked these parental prototypes to disparate outcomes on a wide range of domains (Ballash, Leyfer, Buckley, & Woodruff-Borden, 2006; Barber, Stolz, & Olsen, 2005; Baumrind, 1991). The authoritarian style has been linked with a number of negative outcomes, including low self-reliance, low global self-worth, decreased happiness, lower achievement motives, increased drug use, less active coping,

and increased anxiety (Furnham & Cheng, 2000; Klein, O'Bryant, & Hopkins, 1996; Wolfradt, Hempel, & Miles, 2003). In contrast, children whose parents follow a permissive parenting style are generally positive and show more vitality than those with authoritarian parents; however, they also report low self-control, less responsibility, lower grades, and low self-reliance (Dornsbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Furnham & Cheng, 2000). Distilling the research findings across studies, it appears that the authoritative style of parenting is considered the most ideal style for child development. This style has been associated with happiness, lower neuroticism, positive global self-worth, strong motivation to achieve, independence, assertiveness, advanced moral reasoning, autonomy, and a host of other positive outcomes (Boyes & Allen, 1993; Furnham & Cheng, 2000; Klein et al., 1996; Steinberg, Elmen, & Mounts, 1989).

Despite an extensive literature linking these parental styles to a wide variety of outcomes, only a few studies have examined their association with OC-related symptomatology. Early studies were largely inconsistent in linking parenting styles to OCD, though there was some support indicating that characteristics such as being overprotective, demanding, and meticulous were associated with OC symptoms (Frost, Steketee, Cohn, & Griess, 1994; Steketee, Grayson, & Foa, 1985). Ehiobuche (1988) found that, compared to control subjects, individuals with elevated obsessional symptoms perceived their parents as expressing less emotional warmth. Similarly, Alonso and colleagues (2004) reported that low parental warmth was associated with the hoarding OCD symptom dimension. Three studies found a positive association between obsessional symptoms and the perception that one's parents were overly protective (Cavedo & Parker, 1994; Merkel, Pollard, Wiener, & Staebler, 1993; Turgeon, O'Connor, Marchand, & Freeston, 2002). In concert, these studies suggest that perceived parental control and low warmth are associated with OCD symptoms. However, no studies have directly addressed the relationship between OC symptoms and Baumrind's parenting styles, *per se*, which propose an interplay between the two traits of "warmth" and "control." In addition, no studies have examined the relationship between parenting styles and dysfunctional beliefs thought to underlie OC symptoms. Indeed, cognitive-behavioral models predict that parenting styles may affect psychopathology via their effects on dysfunctional beliefs or cognitions, in addition to other facets such as emotion regulation (Gallagher & Cartwright-Hatton, 2008; Morris, Silk, Steinberg, Myers, & Robinson, 2007).

Contemporary cognitive-behavioral models of OCD are consistent with Beck's (1976) cognitive specificity hypothesis, which proposes that different types of psychopathology arise from different types of dysfunctional beliefs. Accordingly, obsessions and compulsions are thought to arise from dysfunctional beliefs that lead to the misinterpretation of normal negative intrusive thoughts (e.g., the unwanted image of harming a loved one) as suggesting something very important or meaningful (e.g., "thinking this thought means I will act on it"; Rachman, 1997, 1998). Such misinterpretations are thought to lead to anxiety, and the use of compulsive rituals to remove intrusions and to prevent any perceived harmful consequences (Salkovskis, Forrester, & Richards, 1998). Compulsions become persistent and excessive because they are reinforced by immediate distress reduction and by temporary removal of the unwanted thought (Rachman & Hodgson, 1980). Compulsions also prevent the person from learning that their dysfunctional beliefs and interpretations of intrusive thoughts are unrealistic (e.g., the person fails to learn that unwanted harm-related thoughts do not lead to acts of harm; Rachman, 1997).

Why do some people develop dysfunctional beliefs and misinterpret their intrusive thoughts, but not others? Life experiences shape the basic assumptions we hold about ourselves and the world (Beck, 1976). Salkovskis (1985) proposed that assumptions about blame, responsibility, or control play an important role in OCD, as illustrated by beliefs such as "Having a bad thought about an action is the same as performing the action," and "failing to prevent harm is the same as having caused the harm in the first place." These assumptions are thought to be acquired from a strict upbringing or from other factors—perhaps parenting styles—that reinforce certain beliefs, codes of conduct, and attitudes toward responsibility (Salkovskis, Shafran, Rachman, & Freeston, 1999).

The purpose of the current investigation was to conduct a detailed investigation of the relationships between parenting styles, obsessive-compulsive (OC) symptoms, and OC-related dysfunctional beliefs (i.e., “obsessive beliefs”). In accord with previous research and consistent with the cognitive behavioral model described earlier, we hypothesized a relationship between greater OC symptoms and Baumrind’s authoritarian parenting style. In contrast, we predicted that the authoritative parenting style would be associated with lowered levels of OC symptoms. Second, we predicted that authoritarian parenting would also be associated with greater endorsement of obsessive beliefs. Finally, we hypothesized that obsessive beliefs would mediate the relationship between parenting styles and OC symptoms. That is, we predicted that specific parenting styles would be associated with greater levels of specific beliefs, which in turn are related to OC symptom severity.

METHOD

Participants

The sample consisted of 227 (76% female) undergraduate students who received partial course credit for participation. Ages ranged from 17 to 24 ($M = 18.7$, $SD = 1.1$). The racial/ethnic composition of the sample was as follows: African American (8.7%), Asian American (2.6%), White (70.3%), Hispanic/Latino (10.5%), and other (7.8%).

Procedure

All research was conducted in accordance with the American Psychological Association ethical guidelines, and the study was approved by a University Institutional Review Board prior to data collection. Participants were informed that they would be asked about their emotions, behaviors, and self-perceptions. Informed consent was obtained prior to completing a battery of self-report questionnaires in a group setting. At the completion of the experimental session, participants were debriefed about the nature of the research.

Measures

Parental Authority Questionnaire (PAQ). The PAQ (Buri, 1991) is a 30-item questionnaire designed to assess three distinct parental authority styles (permissive, authoritarian, and authoritative), which are based on Baumrind’s (1971) work. The items are divided equally to assess the three parenting styles, and participants rate on a 4-point Likert-type scale how much each statement applied to their parent’s parental style when they were growing up. The PAQ has been found to have good test–retest reliability (.77–.92; Buri, 1991) and in the present sample the internal consistency was also good ($\alpha = .88$ –.92). Discriminant, criterion, and content validity have also been reported to be high (Buri, Louiselle, Misukanis, & Mueller, 1988). Participants completed the PAQ in reference to their primary caretaker (e.g., mother or father) when they were a child, consistent with other reports (Rapee, 1997).

Obsessive-Compulsive Inventory–Revised (OCIR). The OCIR is an 18-item self-report measure of common OCD symptoms (Foa et al., 2002). Respondents rate the degree to which they have been bothered by each symptom using a scale from 0 (*not at all*) to 4 (*very much*). The OCIR has been found to demonstrate good test–retest reliability, good internal consistency, and to differentiate between patients with and without OCD (Foa et al., 2002). In the present sample, the OCIR demonstrated good internal consistency ($\alpha = .88$).

Obsessive Beliefs Questionnaire (OBQ). The OBQ is a 44-item self-report measure designed to assess dysfunctional cognitions that are characteristic of OCD symptoms (OCCWG, 2003).

The measure is composed of three subscales: Responsibility/Threat Estimation, Perfectionism/Certainty, and Importance/Control of Thoughts. Participants rate on a 7-point Likert-type scale (1 = *disagree very much*; 7 = *agree very much*) the extent to which each item describes their thinking. The OBQ has established good convergent and discriminant validity in both clinical and nonclinical samples (OCCWG, 2005). In the present sample, the OBQ demonstrated good internal consistency ($\alpha = .95$).

Depression, Anxiety, and Stress Scale (DASS-21). The 21-item short-form (DASS-21) was used to assess depressive and anxious symptoms (Lovibond & Lovibond, 1995). Participants rate on a 4-point Likert-type scale (0 = *did not apply to me at all*; 3 = *applied to me very much*) how much a given statement has applied to them over the past week. The DASS-21 is composed of three relatively independent subscales measuring levels of depression, anxiety, and stress. The total score and each of the subscales have been found to be both reliable and valid measures of negative affect (Henry & Crawford, 2005). In the present sample, the DASS demonstrated excellent internal consistency ($\alpha = .95$).

RESULTS

Association Between Parenting Styles and OC Symptoms

Means and standard deviations for the OCIR total score and PAQ subscales, as well as zero-order correlations among these variables, are presented in Table 1. Scores on the OCIR were positively correlated with the PAQ Authoritarian subscale, negatively correlated with the Authoritative subscale, and not significantly associated with the Permissive subscale. To determine whether the three PAQ parenting styles might have a differential relationship with OC symptoms, we next constructed a simultaneous linear regression equation with the OCIR total score as the dependent variable and all three PAQ subscales entered into Step 1. The overall model was significant and accounted for 6.2% of the variance. Results revealed that the association with OC symptoms only remained significant for authoritarian parenting, $\beta = .19$, $t(227) = 2.47$, $p < .01$. To examine how robust this association may be, we included two relevant covariates in the equation. Specifically, we selected mood and anxiety symptoms, as measured by the DASS Anxiety and Depression subscales, since general negative affect is associated with both authoritarian parenting and OC symptoms. As shown in Table 2, despite controlling for general negative affect, the

TABLE 1. ZERO-ORDER CORRELATIONS, MEANS, AND STANDARD DEVIATIONS FOR OCIR TOTAL SCORE, PAQ STYLES, AND COVARIATES

	OCIR	PAQ- Authoritarian	PAQ- Permissive	PAQ- Authoritative	<i>M</i>	<i>SD</i>
OCIR	—				11.59	8.59
PAQ-Authoritarian	.21**	—			22.76	6.10
PAQ-Permissive	-.05	-.43**	—		35.03	6.87
PAQ-Authoritative	-.19**	-.37**	.19**	—	30.22	8.26
DASS-Depression	.36**	-.13*	-.13*	-.27**	3.27	3.51
DASS-Anxiety	.47**	.16*	-.09	-.24**	2.83	3.31

Note. *M* = mean; *SD* = standard deviation; OCIR = Obsessive Compulsive Inventory Revised; DASS = Depression, Anxiety, and Stress Scale; PAQ = Parental Authority Questionnaire.

* $p < .05$. ** $p < .01$.

TABLE 2. SIMULTANEOUS REGRESSION EQUATION EXAMINING THE RELATIONSHIP BETWEEN PARENTING STYLES AND OC SYMPTOMS

Dependent Variable	<i>B</i>	<i>SE</i>	β	<i>t</i>
OCIR ($R^2 = .26$)				
DASS-Depression	.29	.18	.12	1.65
DASS-Anxiety	.98	.19	.38	5.25***
PAQ-Authoritarian	.17	.07	.16	2.36*
PAQ-Permissive	.11	.09	.08	1.24
PAQ-Authoritative	-.03	.08	-.02	-0.37

Note. PAQ-Authoritarian = Parental Authority Questionnaire, Authoritarian Subscale; DASS = Depression Anxiety and Stress Scale; OCIR = Obsessive Compulsive Inventory Revised.

* $p < .05$. *** $p < .001$.

Authoritarian subscale remained significantly linked with greater OCIR scores, $\beta = .16$, $t(227) = 2.36$, $p < .05$.

Association Between Authoritarian Parenting Style and OC Symptom Dimensions

Given the relationship between authoritarian parenting and OC symptoms in general, we conducted exploratory analyses to examine the relationship between this parenting style and the various OC theme-based symptom dimensions as assessed by the OCIR subscales. Zero-order correlations between the PAQ Authoritarian subscale and the OCIR subscales, and relevant means and standard deviations are presented in Table 3. As can be seen, scores on the PAQ Authoritarian subscale were significantly, albeit somewhat weakly, associated with the OCIR Checking, Washing, and Obsessing subscale scores, but not with any of the other subscales.

To determine which of the OCIR subscales were uniquely associated with authoritarian parenting, we built a linear regression model with the authoritarian parenting style as the dependent variable and all of the OCIR subscales entered simultaneously. Results revealed that the overall model was significant, $R^2 = .09$, $F(227) = 3.74$, $p < .001$; however, only the Obsessions subscale was uniquely associated with greater endorsement of authoritarian parenting. That association remained significant even after including DASS depression and anxiety scores as covariates (results summarized in Table 4).

Association Between Parenting Styles and OC Beliefs

To assess the relationship between parenting styles and three domains of obsessive beliefs, we first computed zero-order correlations between the OBQ subscales and PAQ subscales. As can be seen in Table 5, the PAQ Authoritarian subscale was significantly and positively associated with all three OBQ subscales, while the PAQ Authoritative subscale was negatively correlated with the OBQ responsibility/threat estimation and importance/control of thoughts subscales. The PAQ Permissive subscale was not associated with any of the OBQ subscales.

To examine whether the parenting styles were unique predictors of obsessive beliefs, we computed three simultaneous regression equations with OBQ subscale scores serving as the respective dependent variables. In line with our analyses for the OCIR, we included DASS Depression and Anxiety subscale scores as covariates, along with the three parenting styles. Results revealed that for each of the three equations, the PAQ Authoritarian subscale was the only significant predictor

TABLE 3. ZERO-ORDER CORRELATIONS, MEANS, AND STANDARD DEVIATIONS FOR THE AUTHORITARIAN PARENTING STYLE AND THE OCIR SUBSCALES

	Correlation With PAQ Authoritarian	<i>M</i>	<i>SD</i>
OCIR-Checking	.17**	1.77	1.89
OCIR-Ordering	.09	3.11	2.45
OCIR-Neutralizing	.12	0.96	1.59
OCIR-Washing	.16*	1.66	2.10
OCIR-Obsessing	.29**	1.68	2.07
OCIR-Hoarding	.07	2.41	2.21

Note. *M* = mean; *SD* = standard deviation.

* $p < .05$. ** $p < .01$.

TABLE 4. SIMULTANEOUS REGRESSION EQUATION ASSESSING THE RELATIONSHIP BETWEEN OC SYMPTOM DIMENSIONS AND AUTHORITARIAN PARENTING

Dependent Variable	<i>B</i>	<i>SE</i>	β	<i>t</i>
PAQ-Authoritarian ($R^2 = .09$)				
DASS-Depression	-0.12	.20	-.05	-0.61
DASS-Anxiety	0.09	.21	.04	0.43
OCIR-Checking	0.34	.40	.08	0.85
OCIR-Ordering	-0.16	.26	-.05	-0.63
OCIR-Neutralizing	0.08	.39	.02	0.20
OCIR-Washing	0.18	.30	.05	0.61
OCIR-Obsessing	1.16	.35	.29	3.33**
OCIR-Hoarding	-0.35	.29	-.09	-1.19

Note. PAQ-Authoritarian = Parental Authority Questionnaire, Authoritarian Subscale; DASS = Depression Anxiety and Stress Scale; OCIR = Obsessive Compulsive Inventory Revised.

** $p < .01$.

of the respective OBQ subscale. Results are summarized in Table 6. Comparison of the betas from the three analyses revealed that the association between authoritarian parenting and the three OBQ subscales did not significantly differ from one another.

Do Obsessive Beliefs Mediate the Relationship Between Authoritarian Parenting and OC Symptoms?

The results reported thus far suggest that of the three parenting styles, the authoritarian style is most consistently associated with OC symptoms and obsessive beliefs. Given the cognitive-behavioral model of OC symptoms described earlier, we hypothesized that obsessive beliefs would mediate the relationship between authoritarian parenting and OC symptoms.

To examine this hypothesis we applied the procedures described by Kenny, Kashy, and Bolger (1998) for testing mediational models. The first step in this procedure is to determine whether

TABLE 5. ZERO-ORDER CORRELATIONS, MEANS, AND STANDARD DEVIATIONS FOR THE THREE PARENTING STYLES AND THE THREE OBQ SUBSCALES

OBQ Subscale	PAQ Subscale			<i>M</i>	<i>SD</i>
	Permissive	Authoritarian	Authoritative		
Responsibility/threat estimation	-.09	.27**	-.16*	53.37	16.97
Perfectionism/certainty	-.07	.22**	-.09	58.81	16.81
Importance/control of thoughts	-.01	.21**	-.19**	31.43	11.03

Note. *M* = mean; *SD* = standard deviation; OBQ = Obsessive Beliefs Questionnaire; PAQ = Parental Authority Questionnaire; OBQ = Obsessive Beliefs Questionnaire.
* $p < .05$. ** $p < .01$.

or not the predictor (parenting) and the criterion (OC symptoms) are significantly associated. The second step requires establishing a relationship between the predictor variable (parenting) and the proposed mediator (obsessive beliefs). The third step requires establishing a relationship between the proposed mediator and the criterion after controlling for the effects of the predictor. The final step involves evaluating the relationship between the predictor and the criterion when the variance accounted for by the proposed mediator has been removed. Traditionally, when this equation yields a nonsignificant effect for the predictor, the controlling variable is said to mediate the relationship.

In selecting the criterion of interest, we chose the Obsessions subscale of the OCIR, given our findings that this was the only subscale that was uniquely associated with authoritarian parenting. We then conducted three sets of analyses to test whether the three OBQ subscales mediate the relationship between the PAQ authoritarian parenting style and the OCIR Obsessions subscale. The results of these analyses are summarized in Table 7. DASS depression and anxiety scores were entered as covariates in all equations. In each case, all requirements outlined earlier were met, with the exception of the fourth step. That is, despite controlling for the respective OBQ subscale, PAQ authoritarian was still significantly associated with greater OCIR obsessions scores. Holmbeck (2002) has suggested that despite the fourth criterion not being met, one should conduct a significance test of the mediated effect in an effort to avoid false-negative conclusions. We thus conducted a Sobel test for each of the models, which revealed that all three OBQ subscales significantly mediated the association between the PAQ authoritarian and OCIR Obsessions scores. This then is indicative of partial mediation.

DISCUSSION

In line with our hypotheses, we found that greater OC symptoms were associated with retrospective reports of authoritarian parenting. We also found that authoritative parenting, which includes both high levels of warmth and behavioral control, was negatively correlated with OC symptoms. Analyses revealed, however, that OC symptoms were specifically linked only with authoritarian parenting after taking into account the other parenting styles and general mood and anxiety symptoms. These results by and large correspond to findings from extant retrospective and observational studies, which have illustrated an association between parental control and greater rates of child anxiety (Ballash et al., 2006). By focusing on Baumrind's parenting prototypes, we were able to consider both dimensions of warmth and control, and found that greater

TABLE 6. SIMULTANEOUS REGRESSION EQUATION ASSESSING THE RELATIONSHIP BETWEEN OBQ SUBSCALES AND AUTHORITARIAN PARENTING

Dependent Variable	<i>B</i>	<i>SE</i>	β	<i>t</i>
OBQ-RT ($R^2 = .30$)				
DASS-Depression	0.32	.34	.07	0.93
DASS-Anxiety	2.30	.36	.45	6.41***
PAQ-Permissive	0.16	.17	.06	0.90
PAQ-Authoritarian	0.48	.14	.24	3.56***
PAQ-Authoritative	0.11	.15	.05	0.73
OBQ-PC ($R^2 = .22$)				
DASS-Depression	0.67	.36	.14	1.86
DASS-Anxiety	1.71	.38	.34	4.54***
PAQ-Permissive	0.13	.18	.05	0.74
PAQ-Authoritarian	0.42	.14	.21	2.96**
PAQ-Authoritative	0.24	.16	.10	1.46
OBQ-IC ($R^2 = .20$)				
DASS-Depression	0.25	.24	.08	1.06
DASS-Anxiety	1.05	.25	.32	4.19***
PAQ-Permissive	0.23	.12	.13	1.87
PAQ-Authoritarian	0.25	.10	.19	2.64**
PAQ-Authoritative	-0.08	.11	-.05	-0.77

Note. PAQ-Authoritarian = Parental Authority Questionnaire, Authoritarian Subscale; DASS = Depression Anxiety and Stress Scale; OCIR = Obsessive Compulsive Inventory Revised; OBQ = Obsessive Beliefs Questionnaire; OBQ-RT = OBQ–responsibility/threat estimation; OBQ-IC = OBQ–importance/control of thoughts; OBQ-PC = OBQ–perfectionism/certainty.

** $p < .01$. *** $p < .001$.

symptom endorsement was linked with the amalgamation of high behavioral control and low warmth/nurturance (i.e., authoritarian parenting).

We found that only the Obsessions subscale of the OCIR was associated with the authoritarian parenting style. In general, the literature linking parenting with specific OCD symptom dimensions or subtypes has been mixed (Alonso et al., 2004; Steketee et al., 1985); though it should be noted that this is the only study to have examined Baumrind's prototypes in relation to OCD, and furthermore, the general pattern of results is consistent with past findings. For example, we found an association between OC symptoms and parenting characterized by low warmth, similar to other reports (Alonso et al., 2004). One of the key differences between our investigation and previous studies is that we relied on a large nonclinical sample. Although this allowed us to examine the associations between OC symptoms and parenting with sufficient power, it is plausible that the associations differ in clinical populations. Another consideration relevant to our sample is that the Obsessions subscale has been identified as the most effective OCIR indicator in differentiating clinical from nonclinical OC symptoms (Foa et al., 2002). Our findings thus may reflect the possibility that authoritarian parenting is linked with the more clinical end of the OC symptom spectrum.

TABLE 7. SUMMARY OF MEDITATIONAL MODELS

IV → MV → DV	βs				Z
	IV → DV	IV → MV	MV → DV/IV	IV → DV/MV	Sobel
PAQ → RT → OBS	.20***	.20**	.21**	.16**	2.33*
PAQ → IC → OBS	.20***	.15*	.20**	.17**	1.98*
PAQ → PC → OBS	.19***	.15*	.24***	.17**	2.19*

Note. IV = independent variable; MV = mediating variable; DV = dependent variable; PAQ = Parental Authority Questionnaire, Authoritarian Subscale; OBS = Obsessive Compulsive Inventory Revised, Obsessions Subscale; RT = OBQ–responsibility/threat estimation; IC = OBQ–importance/control of thoughts; PC = OBQ–perfectionism/certainty.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Our investigation is unique in its consideration of the relationship between parenting styles and beliefs commonly associated with OCD. Similar to our analyses involving the OCIR, we found that the OBQ was only associated with authoritarian parenting after controlling for all parenting prototypes and general depression and anxiety symptoms. We furthermore found that the relationship between authoritarian parenting and the three OBQ domains was equally strong. To date, only one additional investigation has considered the role of cognitions in the link between parental practices and anxiety psychopathology. Gallagher and Cartwright-Hatton (2008) found in a retrospective investigation with students that overreactive parental discipline predicted greater endorsement of both cognitive distortions (e.g., catastrophizing, selective abstraction) and metacognitions (e.g., “I constantly study my thoughts” or “I do not trust my memory”). Future research should be conducted with clinical samples, and investigators should consider the specificity of the association between parenting and various beliefs domains, including more general anxiety-related beliefs and other OCD cognitions.

In considering these findings, the question arises whether authoritarian parenting is specific to particular anxiety disorders such as OCD, or if it functions as a risk factor for general anxiety psychopathology. Within a broader anxiety framework, Rapee (1997) and others (Wood, McLeod, Sigman, Hwang, & Chu, 2003) have proposed a model to explain how parenting might lead to anxiety in offspring. Specifically, they suggest that parental control, characterized by dictatorial and demanding interactions with children, may generate an environmental context that interferes with the child’s acquisition of effective emotion regulation skills and a sense of autonomy. High levels of parental criticism and demanding expectations may elicit in children a hypervigilance towards threat, which could interfere with the learning and acquisition of coping skills, views of self/world, mastery, and a sense of control. Furthermore, it is thought that children who are not afforded the opportunity to influence decisions regarding their environment or themselves may be at risk for developing core beliefs in which they view the world as highly threatening and out of their control. This cognitive style subsequently puts them at risk for developing anxiety (Chorpita & Barlow, 1998). Extending these models to the realm of OCD and considering our findings, we would suggest that authoritarian parenting might be associated with OCD via the development of specific cognitions—responsibility/threat estimation, perfectionism/certainty, and importance/control of thoughts—that function as likely risk factors for OC symptoms (Abramowitz, Khandker, Nelson, Deacon, & Rygwall, 2006; Rector, Cassin, Richter, & Burroughs, 2009).

For any vulnerability factor investigation, such as that examining the relationship between parenting and a psychiatric phenomenon, it is imperative to consider conclusions regarding causality. The current study was a cross-sectional investigation, and we are thus limited in the inferences one can make. Although our mediational analyses provided support for the assumption

that the link between authoritarian parenting and greater levels of OC symptoms is at least partially via the development of OC-related beliefs, it is important to consider alternative explanations. For example, it may be that parents adjust their levels of warmth and control in response to a child that is exhibiting psychiatric symptoms. This hypothesis is reflected in the literature examining the impact an individual's disorder can have on the family as a whole. A number of studies, including those focused on OCD, have found that the quality of family life decreases dramatically once symptoms onset (Steketee & Pruyun, 1998). One possibility may be that parents react with more authoritarian rearing styles after symptoms emerge in an effort to cope with their children and the difficulties the family has with managing. To our knowledge, no study has examined this hypothesis explicitly.

In addition to the causality of the relationship between OC symptoms and parenting styles, it is informative to consider other vulnerability factors. For example, we did not examine parental psychopathology and how this may impact rearing patterns. We know that OCD may be heritable (Hettema, Neale, & Kendler, 2001; van Grootheest et al., 2005), and it is plausible that the parents of our participants also endorsed OC and related symptoms, which could influence their reliance on specific rearing styles. In line with this hypothesis, a small number of studies have found that anxious parents are more likely to utilize behavioral control in parenting (Woodruff-Borden, Morrow, Bourland, & Cambron, 2002). Furthermore, it is unlikely that parenting in and of itself "causes" OCD. Instead, it is far more likely that in addition to there being a multitude of factors that collide to increase a child's general level of risk, there is a constant bidirectional flow of influence between the child and the parent (Ballash et al., 2006). Within this framework, parenting might elicit more symptoms in the child, which in turn could influence parenting, or vice versa. Future research should consider mechanisms such as this to shed more light on how parenting in concert with other risk factors could lead to the development of specific belief patterns and OC symptoms.

Pending further clarification of the causal relationship between parenting styles and OC symptoms, several potential clinical implications emerge. Our findings add to the growing sense that family factors should be considered in the treatment of pediatric OCD and anxiety. For example, by including such a consideration, clinicians may be able to preemptively educate the parents that their child's OCD symptoms may elicit a more authoritarian parenting style. Alternative effective parenting patterns could then be reinforced or instituted. On the other hand, if an authoritarian parenting pattern is already detected at intake, it might be beneficial to address this in the hope of circumventing the potential downstream implications this has on the child and their symptoms. Similar to parent management training provided to parents of children with externalizing disorders, it may be effective to include such techniques in the treatment of child anxiety and OCD. Very little research has empirically considered this type of addition to traditional treatments; however, one recent study found that targeting parenting styles led to a decrease in symptoms in very young children with internalizing problems (Cartwright-Hatton, McNally, White, & Verduyn, 2005).

A number of limitations should be considered. First and foremost, our investigation utilized a nonclinical sample. As discussed earlier, a different pattern of associations may emerge if one were to examine the constructs presented in the current report in a clinical sample of individuals with OCD. A second limitation was the cross-sectional design of our investigation. Per our discussion on causality, our data do not allow us to tease apart the various mechanisms accounting for the association between OC symptoms and authoritarian parenting. A number of alternative explanations should be considered in addition to those outlined earlier. For example, participants who endorsed more severe OC symptoms and associated beliefs may have a greater tendency to perceive their parent's parenting style as authoritarian. Another related limitation to our design was the use of retrospective questionnaires. Although our sample consisted of first-year college students, and they therefore may not be too far removed from having

experienced active parenting, it is possible that their reports could have been influenced by subjective and inaccurate recollections. Future investigations with clinical samples could address many of these limitations with the utilization of prospective designs, along with multiassessment and informant methodology. Despite these limitations, the current report adds an important consideration to the investigation of the association between parenting and OCD. The findings outlined may provide an important foundation for conducting future research on the topic.

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