Research Article

Comorbidity and Family Factors Associated with Selective Mutism

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Recent findings suggest that Selective Mutism (SM) is best conceptualized as a childhood anxiety disorder and that oppositional behavior may or may not be a significant part of the clinical picture. Twenty-nine mothers of children with SM and 28 mothers of children who did not meet diagnostic criteria for any Axis I disorder (a community comparison group) completed parental self-report questionnaires and clinician-rated interviews assessing anxiety and oppositional behavior, parental psychopathology, and family factors with hypothesized relationships with childhood anxiety. Findings suggested that children with SM experienced more anxiety than those in the community comparison group, with significantly higher levels of social anxiety, rumination, and physical symptoms reported. Mothers of children with SM reported greater monitoring of their children's activities, but they did not significantly differ from community comparison group mothers on reports of other parenting behaviors. Such findings may have important implications for guiding family involvement in psychosocial interventions.

1. Introduction

Selective mutism (SM) is characterized by a continuing failure to speak in one or more situations where speech is expected, despite evidence that speech production is possible and occurs in other settings. In order to meet diagnostic criteria for SM, the observed restriction in speech must occur for more than one month and cannot be limited to the first month of school. Finally, the symptoms should not be better accounted for by another medical or psychological condition and must be causing significant interference or distress [1].

Estimates of SM's prevalence range between 0.2% [2] and 2% of the population [3], with girls more commonly affected than boys [4]. Symptoms appear to be present prior to formal school entry [5] although parents may not identify symptoms as problematic until children enter school and fail to speak with peers and/or their teacher [6]. Although symptoms of SM may remit with time, associated symptoms of anxiety tend to remain [7].

High levels of comorbid anxiety are typically observed in samples of children with SM [8, 9], with many studies reporting that nearly 100% of children diagnosed with SM also meet criteria for social phobia [10]. Although other comorbidities may be present (e.g., oppositional behavior), these are typically observed in addition to, not instead of, co-occurring anxiety [9, 11]. Furthermore, efficacious interventions for childhood anxiety disorders appear to be useful for children with SM [7]. Both psychopharmacologic interventions using selective serotonin reuptake inhibitors [12] and exposure-based behavioral and cognitive-behavioral interventions have shown promise in helping children increase the frequency of speaking behaviors [13–15], presumably by reducing anxiety associated with speech production. This and several other lines of evidence suggest that anxiety symptoms are a primary symptom domain of SM (e.g., mutism is driven by a fear of speaking in front of others, a symptom commonly observed in social phobia) [1]. It has been suggested that SM may actually be best conceptualized as a childhood anxiety disorder although

such anxiety symptoms are not part of the criteria [1] for the disorder at this time (see [16] for a review).

The prevalence of other diagnostic comorbidities remain unclear. Specifically, some have found that elevated levels of externalizing symptomatology is common amongst children with SM [17, 18], while others have not [16]. For instance, some studies report that children with SM are more likely to meet diagnostic criteria for oppositional defiant disorder and/or present with greater inattention and hyperactivity than either community controls [17–19] or a group of children with a non-SM anxiety disorder (e.g., social phobia [20]). However, other lines of research suggest that children with SM present with equal [16] or fewer externalizing symptoms than community comparison groups [5]. Such findings vary based on methodologies and sources of information [9]. The lack of consistent findings regarding the extent to which children with SM also present with externalizing symptomatology indicates the importance of assessing for these symptoms in any given sample of children with SM.

Understanding the ways in which children's families influence the development and maintenance of SM has been of interest since the disorder was first identified [21]. A series of methodologically rigorous evaluations, including large sample sizes and community comparison groups [5], have failed to detect differences in family structure, resources available to the family, the utilization of parenting strategies for managing child behavior, or parental depression between families of children with SM and families of children from a community comparison group. Those family processes frequently observed amongst families of children with an anxiety disorder (reviewed below) have yet to be examined.

Although many family factors, including conflict, cohesion, closeness, warmth, and acceptance, have been hypothesized to affect the development and maintenance of child anxiety symptomatology, not all of these family factors or parenting behaviors have been consistently observed in the literature (see [22] for a review). Both high levels of parental negativity (and/or the absence of parental warmth, e.g., [23]) and frequent parental attempts at rigidly controlling child behavior (often referred to as parental control [24]) have been frequently linked to child anxiety symptomatology; however, the connection between parental control and child anxiety has received the most consistent empirical support [25]. Higher levels of familial conflict (e.g., [26]) and lower parental expectations regarding their children's ability to cope with stressful situations (e.g., [27]) have also, albeit less consistently, been linked to symptoms of child anxiety.

An alternate line of familial investigation has focused on the prevalence of parental psychiatric symptomatology [19, 28]. Chavira and colleagues, for instance, found that parents of children with SM were more likely to meet criteria for social phobia (generalized type) or avoidant personality disorder (both disorders characterized by shyness [29]) than were parents from the comparison group. No differences were observed in the rates of any other psychiatric diagnoses between these parental groups. This suggests that discomfort in, or anxiety about, social situations is more common amongst families of children with SM than among family members from a community comparison group. Such

an understanding highlights the importance of examining parental experiences with anxiety in order to increase our understanding of how parental anxiety may be related to SM presentation.

Given the above, an investigation into the specific family factors thought to be associated with the development and maintenance of childhood anxiety disorders amongst a sample of children with SM is warranted. As this study is the first to examine those family factors specifically linked to child anxiety presentation, a wide range of constructs are being evaluated. Additionally, it appears that the SM literature may benefit from continued exploration into a broad array of potential psychiatric comorbidities, including externalizing symptoms. Therefore, the current investigation was designed to explore the presence of concurrent anxiety and disruptive behavior symptoms amongst a sample of children with SM (the *SM group*) and a community sample of same-aged children (a *community comparison condition*), while assessing parenting behaviors and family factors that have been observed within samples of highly anxious children.

Similar to previous findings, it was hypothesized that children with SM would present with greater parent-rated social anxiety using both a clinician-rated diagnostic interview and a parental-report questionnaire of child psychopathology, than children in the community comparison group. Although there is a lack of consistent findings in the literature, it was hypothesized that children in the SM and community comparison groups would present with roughly equal levels of childhood externalizing symptoms, including oppositional behavior, hyperactivity, and inattention on both a clinician-rated diagnostic interview and a parental-report questionnaire of child psychopathology symptoms. Parents of children with SM were expected to report that they themselves experience higher levels of anxiety, but relatively equal levels of depression and stress, on a self-report of adult psychopathology symptoms when compared to parents of children in the community comparison group. Although specific parenting characteristics have not been evaluated amongst other samples of families of children with SM, given the strong association between SM and other childhood anxiety disorders, those family processes typically observed when high levels of childhood anxiety are present (e.g., increased parental involvement and control of children's activities) were expected on both a clinician-rated interview and parental-report questionnaire.

2. Method

2.1. Participants. Each participant in this study was the mother of a child between the ages of 3 and 13 ($M = 7.8$ years, $SD = 2.4$, 58% female). The SM group included 29 mothers, and the community comparison group included 28 mothers. Table 1 provides demographic information on each study group.

To be eligible for this investigation, the identified child either met diagnostic criteria for SM (SM group) or did not meet diagnostic criteria for any anxiety, mood, or oppositional behavior disorder (community comparison group) as indicated by clinician ratings on the Anxiety Disorders

Table 1: Presentation of demographic characteristics by diagnostic group.

Demographic variables	Selective mutism group $n = 29$	Community comparison group $n = 28$
Child's age		
M	7.59	7.99
SD	2.68	2.16
Child's gender		
# female	18	20
Child's ethnicity		
(i) Asian	0%	7%
(ii) Black	0%	7%
(iii) Latino or Hispanic	7%	11%
(iv) Non-Hispanic White	83%	57%
(v) Mixed heritage	10%	18%
Number of siblings		
M	1.45	1.32
SD	1.24	.82
Mother's age		
M	36.79	39.33
SD	7.64	5.05
Father's age		
M	38.57	40.74
SD	7.34	5.92
Parental marital history		
(i) Married	86.30%	78.60%
(ii) Divorced/ separated	10.30%	7.20%
(iii) Never married	3.40%	14.20%
Child's educational placement		
(i) Public	75%	100%
(ii) Private	16.67%	0%
(iii) Home school	8.33%	0%

$^{*}P < .0014.$

Interview Schedule for the DSM-IV-Child Version, Parent Report (ADIS-IV-P; [30]). Families were excluded if the identified child was reported to have psychotic symptoms, met diagnostic criteria for bipolar disorder, or if there was evidence of mental retardation or a pervasive developmental disorder. Individuals were also ineligible if either the parent or the child did not speak English fluently or if the parent was not able to fluently read English, as most study measures were not available in other languages.

2.2. Measures. Anxiety Disorders Interview Schedule for the DSM-IV-Child Version, Parent Report (ADIS-IV-P [30]). The ADIS-IV-P permits the diagnosis of all DSM-IV anxiety and unipolar depressive disorders. The interview also includes screening questions assessing for externalizing disorders, learning disabilities, mental retardation, and psychotic processes. A child report form of the ADIS-IV interview is also available (Anxiety Disorders Interview Schedule for the DSM-IV-Child Version, Child Report, ADIS-IV-C [30]). However, as it is unlikely that a child with SM would reliably speak with an unfamiliar interviewer [6], the child interview was not utilized within this project.

Diagnostic profiles were generated for each child using the information obtained from their parent's interview. Diagnoses assigned a clinical severity rating (CSR) of four or above on an eight-point scale (e.g., 0 = absent; 8 = very severely interfering/disabling) are considered to be clinical diagnoses, while those assigned a rating less than four are considered subclinical. Research demonstrates that the ADIS-IV-P has good interrater ($r = .93$) and test-retest reliability ($k = .67$; [31, 32]). Further, there is evidence that the validity of the ADIS-IV-P is maintained even when administered over the telephone ($K = .086$ [33]). The study interviewer had completed ADIS-IV-C/P training procedures (see [32]) prior to the initiation of this study.

Selective Mutism Questionnaire (SMQ [34]). The SMQ is 17-item parent report measure designed to assess the child's speaking behaviors across three social settings (i.e., school situations, social situations with family members, and situations outside of school not involving family). On this measure, parents respond to questions such as how frequently their "child talks to most peers at school," by indicating whether that behavior occurs always, often, seldom or never. The SMQ has shown excellent internal consistency, including in this study, and strong convergent and discriminant validity [35].

Disruptive Behavior Disorder Rating Scales (DBDRS [36]). The DBDRS is a 45-item parental self-report measure designed to assess the extent to which parents believe their children's behavior maps onto diagnostic criteria for the attention-deficit/hyperactivity disorder and/or oppositional defiant disorder. Counting the number of symptoms endorsed within each diagnostic category allows for an estimation of whether a given diagnosis is likely to be present. Parents are asked to indicate how frequently specific behaviors occur (e.g., "often argues with adults" and "often fidgets with hands or feet or squirms in seat") by indicating whether these behaviors occur not at all, just a little, pretty much, or very much. The DBDRS has good psychometric properties, including acceptable reliability and validity estimates (e.g., [37]). The DBDRS subscales evidenced strong internal consistency within the study sample.

Screen for Child Anxiety-Related Emotional Disorders, Parent Report (SCARED-P [38]). The SCARED-P is a reliable parental self-report of child anxiety symptomatology. This 41-item measure assesses five factors: somatic/panic (e.g., "He/she gets shaky"), general anxiety (e.g., "My child is a worrier"), separation anxiety (e.g., "My child gets scared if he/she sleeps away from home"), social phobia (e.g., "My child feels nervous with people he/she does not know well"), and school phobia (e.g., "My child gets stomachaches at school"). Response choices allow parents to indicate whether each statement is "not true or hardly ever true," "somewhat

true or sometimes true," or "very true or often true." The SCARED-P evidences good test-retest reliability, strong internal consistency (both in this sample and within previous research), and good discriminative validity (both amongst anxiety disorders and between anxious and nonanxious disorders; [38]).

Depression Anxiety Stress Scale (DASS [39]). The DASS is a 42 item adult self-report questionnaire with three 14-item scales: depression (e.g., I just could not seem to get going), anxiety (e.g, "I was in a state of nervous tension"), and stress ("I found it difficult to relax"). Self-reported ratings are made on a 4-point severity/frequency scale assessing the respondent's experiences over the past week. Scale scores are calculated by summing the relevant items. The measure has acceptable internal consistency (in this study and in previous research) and adequate concurrent validity [39].

Family Assessment Clinician Interview (FACI [40]). The FACI is a clinician-rated, parent-based interview assessing several family factors with demonstrated relationships to anxiety disorders in children. These factors are represented by three scales (and their associated subscales) on the FACI: *family warmth/closeness, parental involvement/protection* (subscales: social activities away from home, parental monitoring, parental comfort with separation), *and parental expectations* (subscales: performance expectations, parental expectations for future). Each of these three interview sections include open-ended questions, Likert-type scale items, and frequency reports assessing the respective construct. For example, the *family warmth/closeness* section includes an item stating, "Do family members discuss fears and concerns?" At the end of each section, the clinician assigns global scores for each scale or subscale based on the information obtained by the parent and a series of scoring rubrics included in the FACI. The interviewer was able to consult with one of the measure developers when unsure how best to score individual participant responses. In previous research, the FACI has shown strong interrater reliability and good convergent validity with a representative measure of family factors in a clinical sample of children with anxiety disorders [41].

Family Assessment Measure, Version III (FAM-III [42]). The FAM-III is a parental self-report developed to measure seven aspects of family functioning, including communication, affective expression, role performance, task accomplishment, involvement, control, and values and norms [43]. The FAM-III consists of 50 items which measure the seven constructs above plus a social desirability and defensiveness subscale. The control scale, for instance, includes an item that reads, "When I ask why we have certain rules, I do not get a good answer." "Each item is scored according to a 4-point Likert-type format ranging from "strongly agree" to "strongly disagree." A total score is tallied by summing individual items. Internal consistency of FAM-III scales ranges from .60 to .87 (in this study and others [43]).

2.3. Procedure. Potential participants were recruited using two distinct sources. Parents of children with SM were recruited via the web-based Selective Mutism Group~ Child Anxiety Network (http://www.selectivemutism.org/). Parents of those in the community comparison group were recruited using Craigslist (http://craigslist.org/), an Internet site that acts as a community bulletin board.

Interested participants from both groups were asked to contact the primary investigator (BB), either by email or by telephone. A telephone-based screen, including questions about inclusion and exclusion criteria, was then completed. Once telephone screening procedures were completed, eligible families were emailed a link to a website where an IRB-approved informed consent form could be reviewed and electronically signed. Families consenting to study procedures then completed all study questionnaires via an online data collection tool. Followup phone calls were made to each family allowing for the completion of the ADIS-IV-P and the FACI. The primary investigator (BB) completed all telephone interviews with eligible participants. No financial compensation was offered to parents of children with SM. In order to recruit an adequate sample of families from the community, $25 was offered to those in the community comparison group.

3. Results

3.1. Preliminary Analyses and Analytic Strategy. Initial analyses compared the SM and community comparison groups on variables such as child's age, gender, and ethnicity, number of siblings, age of each parent, parental marital history, and the child's educational placement. No significant differences were observed between groups on any demographic variable (as reflected in Table 1). There were no significant differences between those who did and did not complete the questionnaires (versus both interviews *and* questionnaires) on either demographic variables or interview responses. As only one caregiver was interviewed for each family, all families selected the mother as the respondent.

Chi-square analyses were utilized to evaluate potential between group differences on categorical variables, such as whether a given child met diagnostic criteria for separation anxiety disorder. In all but a few cases, independent samples t-tests were conducted to examine differences between groups on continuous measures, including those obtained from questionnaires and clinician ratings (i.e., ADIS-IV-P clinician severity ratings and FACI scale scores). For those cases where an independent samples t-test was not appropriate, due to zero-value means or standard deviations, a Mann-Whitney U test was utilized. A Bonferroni correction was utilized to control for the multiple comparisons being run. Based on this correction, only P values less than .0014 were considered statistically significant [44].

3.2. Measures of Child Psychopathology. According to data obtained using the ADIS-IV-P, all children in the SM group met diagnostic criteria for SM ($M = 5.50$). None of the children in the community control condition met criteria for SM ($M = 0.00$). Children in the SM condition were rated as having significantly more severe symptoms of SM

TABLE 2: Group differences on measures of child psychiatric illness.

Child symptomatology measures	Selective mutism group M (SD)	Community comparison group M (SD)	d
ADIS-IV-P[a] CSR[b]			
(i) Selective mutism	5.50 (.90)	.00 (.00)	8.72*
(ii) Separation anxiety disorder	1.40 (2.21)	.07 (.37)	.85
(iii) Social phobia	3.57 (2.03)	.10 (.56)	2.35*
(iv) Generalized anxiety disorder	.80 (1.56)	0 (0)	.73
(v) Oppositional defiant disorder	.27 (.91)	0 (0)	.38
SMQ[c] subscales			
(i) School	10.30 (3.79)	21.20 (2.71)	3.32*
(ii) Home/family	17.70 (2.69)	22.16 (2.15)	1.81*
(iii) Public/social	7.63 (2.70)	16.08 (2.36)	3.37*
SCARED[d] subscales			
(i) Somatic/panic	17.10 (3.60)	13.56 (1.00)	1.32*
(ii) General anxiety	15.52 (4.27)	10.84 (2.87)	1.29*
(iii) Separation anxiety	13.03 (3.87)	10.44 (2.87)	.77
(iv) Social phobia	18.83 (2.44)	9.72 (3.88)	2.92*
(v) School phobia	5.72 (1.67)	4.32 (.75)	1.07*
DBDRS[e] subscales			
(i) Oppositional/defiant	13.34 (4.43)	10.32 (2.72)	.82
(ii) Inattention	15.28 (6.23)	10.84 (1.99)	.95*
DBDRS[d] subscales			
(i) Impulsivity/overactivity	15.69 (5.93)	12.36 (2.51)	.73

[a]ADIS-IV-P = Anxiety Disorders Interview Schedule for the DSM-IV-Child Version, Parent Report. [b]CSR = Clinical Severity Rating. [c]SMQ = Selective Mutism Questionnaire. [e]DBDRS = Disruptive Behavior Disorder Rating Scales.
*$P < .0014$.

across school ($t[53] = 12.20$, $P = .00$, $d = 3.32$), home ($t[53] = 6.69$, $P = .00$, $d = 1.81$), and public/social settings ($t[53] = 8.45$, $P = .00$, $d = 3.37$). Children in the SM group were also rated as having significantly more severe social anxiety on both the ADIS-IV-P CSR for the social phobia module ($t[57] = -8.87$, $P = .00$, $d = 2.35$) and the SCARED-P social anxiety subscale ($t[52] = -10.48$, $P = .00$, $d = 2.92$) than those in the community comparison group. According to information obtained during the ADIS-IV-P, 64% of children in the SM group met diagnostic criteria for social phobia.

Children in the SM group were also reported as having greater symptoms of ruminative worry (SCARED-P generalized anxiety disorder subscale; $t[52] = -4.64$, $P = .00$, $d = 1.29$), higher levels of somatic arousal (SCARED-P somatic arousal subscale; $t[52] = -3.88$, $P = .00$, $d = 1.07$), and

more difficulty maintaining attention (DBDRS inattention subscale; $t[52] = -3.41$, $P = .001$, $d = .95$) than the community comparison group. Results for parent-reported child psychopathology are found in Table 2.

3.3. Measure of Parental Psychopathology. There were no significant differences between groups regarding parental self-reports of their own depression, anxiety, or stress on the DASS as reported in Table 3.

3.4. Measures of Family Factors. Parental monitoring was found to be significantly higher amongst families with a child with SM (FACI parental monitoring subscale; $t[55] = -3.44$, $P = .001$, $d = .93$). However, no other significant differences between groups were observed on the FAM-III and FACI scales regarding parental control, warmth or other relevant

TABLE 3: Group differences on measures of parental symptomatology.

Parental symptomatology	Selective mutism group M (SD)	Community comparison group M (SD)	d
DASS subscales			
(i) Depression	17.22 (5.37)	14.54 (2.99)	.31
(ii) Anxiety	17.33 (6.07)	15.67 (4.56)	.56
(iii) Stress	22.89 (8.67)	18.79 (5.76)	.53

[a]DASS=Depression Anxiety Stress Scale.
$^*P < .0014$.

TABLE 4: Group differences on measures of family factors.

Measures of family factors	Selective mutism group M (SD)	Community comparison group M (SD)	d
FACI[a]			
(i) Parental warmth subscale	4.24 (1.48)	4.86 (1.32)	.45
(ii) Parental involvement/protection subscale	4.97 (1.24)	4.21 (1.10)	.65
(a) Social activities away from home	2.79 (1.18)	3.21 (1.13)	.37
(b) Parental monitoring	4.00 (.80)	3.25 (.84)	.93*
(c) Comfort with separation	3.41 (.95)	2.96 (.96)	.48
(iii) Parental expectations subscale	4.34 (1.45)	3.93 (1.25)	.27
(a) Performance expectations	3.75 (.99)	3.53 (.69)	.27
(b) Future expectations	3.07 (1.25)	2.79 (.99)	.25
FAM-III[b] Subscales			
(i) Task accomplishment subscale	12.41 (1.24)	12.38 (1.38)	.20
(ii) Role performance	11.90 (1.80)	12.25 (1.70)	.20
(iii) Communication	13.10 (1.23)	12.79 (1.32)	.25
(iv) Affective expression	12.21 (1.57)	11.29 (1.12)	.67
(v) Involvement	11.72 (1.16)	12.04 (1.30)	.27
(vi) Control	10.24 (1.46)	9.88 (1.65)	.24
(vii) Values and norms	11.79 (1.26)	11.04 (1.46)	.57
(viii) Social desirability	19.03 (1.82)	18.67 (1.37)	.30
(ix) Defensiveness	19.17 (1.77)	18.50 (1.69)	.39

[a]FACI=Family Assessment Clinician Interview. [b]FAM-III=Family Assessment Measure, Version III.
$^*P < .0014$.

constructs. Results regarding parenting and family factors are presented in Table 4.

4. Discussion

In this investigation, children with SM were found to experience a range of internalizing symptomatology, including significantly greater levels of social anxiety (according to both dimensional and categorical measures), a higher degree of ruminative worry and more physical symptoms typically associated with anxiety disorders than were children in the community comparison group. Given the diagnostic overlap between SM and social phobia, the high levels of social anxiety in the SM group are not surprising. Similarly, the high levels of ruminative worry and physical symptoms have been observed in other samples of children with SM (e.g., [5]) and are typical symptoms of anxiety.

As discussed earlier, previous investigations have, at times, found that children with SM experience greater hyperactivity, inattention, and/or oppositionality [17–19]. In this investigation, children with SM did not evidence greater parent-reported oppositional behavior or hyperactivity than those in the community comparison group; however, parents did note that children with SM appeared to have greater difficulty with inattention. Future investigations into the attentional processes of children with SM are needed to clarify the observed findings. Specifically, cross-informant evaluations (e.g., getting teacher-report data) of children's attentional processes will help determine whether parental reports of inattention reflect specific situational processes (e.g., anxiety-driven inattention), parental difficulty assessing children's attentional capacities (e.g., as children with SM are not speaking in many social situations, they may also be less involved or visibly attentive while these interactions are

occurring around them), or whether attentional problems are in fact chronic such that they occur across a range of contexts or within multiple, relevant situations (e.g., at school, with peers, etc.). Future investigations might also utilize structured, nonspeech-based evaluations of children's attentional processes (e.g., via neuropsychological assessments of sustained attention and/or executive functioning).

Although it was hypothesized that parents of children with SM would report experiencing greater anxiety than parents of children in the community comparison group, this was not observed. Several explanations for this finding are possible. The first is that parents of children with SM may, in fact, not experience more anxiety than parents of children without SM. However, previous studies, utilizing larger samples, suggest this is not the case and that parents of children with SM are more likely to meet diagnostic criteria for social anxiety or avoidant personality disorders [28]. Therefore, this finding may reflect the limitations of the measure selected for use in this research. In particular, the DASS was not designed to differentiate between types of anxiety experienced (e.g., social anxiety, ruminative worry, etc.). Therefore, it may be that parents of children with SM were experiencing greater social anxiety than parents in the community comparison group, but the DASS was not sensitive enough to detect this domain specific difference within a sample of this size.

Given the growing consensus that SM may be best conceptualized as a childhood anxiety disorder, we predicted that families of children with SM would evidence a set of parenting or family factors similar to those previously observed in the family environments of children with an anxiety disorder diagnosis. Parents of children with SM were rated as more involved in their children's activities, via increased monitoring, than were parents in the community comparison group on a clinician-rated interview (i.e., FACI parental involvement/protection scale, parental monitoring subscale) although parents did not report such a difference on a self-report measure assessing parental involvement (i.e., the FAM-III control subscale). No other family factors were found to differ between the SM and community comparison groups.

While interviewing families of children with SM, parents were frequently heard to say that they felt they had to "keep a close eye" on their child in order to ensure that their child remained safe. As it was unlikely that their child would speak to many of the people around them, parents had difficulty feeling confident that their children would be able to get their needs met without this type of parental support. Therefore, while a clinician-rated interview may have been sensitive to differences in parental monitoring (regardless of their rationale), parental responses to a self-report measure would reflect parents' rationale for their involvement (e.g., parents not rating their involvement as intense because they perceived it to be necessary). However, as the FAM-III does not explicitly assess parental monitoring, it may also be the case that the interview and self-report measures employed in this investigation were assessing slightly different constructs and therefore evidenced different results.

Future research may explore this finding by utilizing observational measures, an especially powerful tool for examining familial processes typically associated with child anxiety [24] to determine whether parents engage in, even though they may not report, parenting behaviors previously observed amongst samples of anxious children. Additionally, the utilization of observational measures of parental involvement in tasks not requiring speech production by the child (e.g., a puzzle task) may allow for the evaluation whether parents alter their involvement based on the extent to which children are able to independently handle the situation in question. Such an understanding may help clarify whether increases in parental involvement are specific to speech-based tasks or whether parents of children with SM are more involved in their children's activities regardless of the demands of the current activity. As increased parental involvement in child activities has been consistently observed within familial samples of anxious children [25], it might be expected that observational methodologies would reveal similar patterns in families of children with SM.

It should be noted that this project benefited from a number of methodological strengths. One such strength was the multimodal assessment methodologies employed. Several of the constructs of interest (i.e., child psychopathology and family functioning) were assessed using both a clinician-rated interview and parental self-report questionnaires. This allowed for an evaluation of these constructs using both sources of data, although parents were the respondents for both types of measures.

In considering project limitations, the source of the SM sample warrants particular discussion. As noted earlier, parents of children with SM were recruited from a web-based group whose stated goal is to educate parents about symptoms of SM, connecting these families with resources to understand their child's symptomatology and to mitigate the impact of these symptoms whenever possible. Therefore, the parents of children with SM involved in this investigation may have been more knowledgeable about SM, and potential parenting strategies for reducing the impact of SM symptomatology, than parents of children with SM who were not aware, or making use, of a similar resource. Those in the community comparison condition were recruited using an internet bulletin board and so were likely seeking or reviewing opportunities to participate in research, as well as potential compensation only offered to the community comparison group. Therefore, these parents may have felt the need to respond to the questions asked of them in ways they felt would ensure their eligibility for this research or may have otherwise been different from nonvolunteers [45].

5. Summary

Many still consider SM to be a poorly understood disorder [16]. This investigation is part of a growing body of literature exploring common diagnostic features, common comorbidities, and parenting behaviors potentially related to the symptom presentation of SM. This research provides additional evidence that SM is highly comorbid or overlapping with anxiety symptoms and not significantly

associated with symptoms of oppositional behavior. Similar to previous findings in the child anxiety literature, parents of children with SM reported engaging in greater monitoring of their children's activities than did families of children without significant anxiety or oppositional behavior. However, no other differences in parenting behaviors were reported. These findings may have important implications for intervention planning. Specifically, it has been suggested that interventions for childhood anxiety disorders may be enhanced by teaching parents to reduce their involvement in, and monitoring of, their children's activities, allowing their children to learn they are able to cope with any given situation with only age-appropriate levels of parental support [25]. In the case of SM, parents may strongly feel that they need to monitor their children's activities to ensure that their needs are met in varying situations. Interventions may need to provide children with skills for coping with a given situation while ensuring parents recognize even small changes in children's abilities (e.g., increases in speaking behaviors), so that they are receiving accurate feedback as to when reductions in parental involvement are appropriate. Although the study has some limitations, it nevertheless contributes some important information about the family environment as well as the comorbid symptom presentation of children presenting with SM, a population which is ripe for further study.
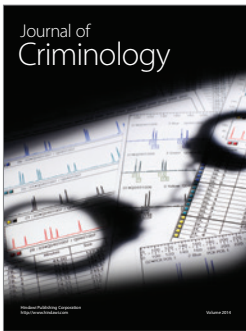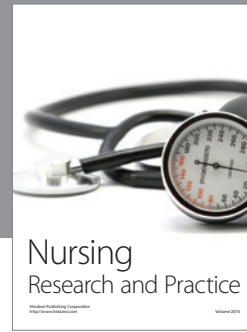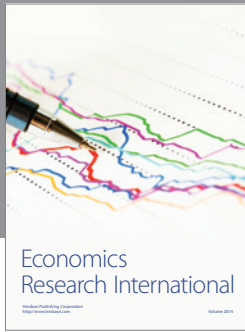
Acknowledgment

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