

Risk Factors and Comorbidity in Childhood Specific Phobias

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Abstract

This study aims to investigate possible risk factors associated with specific phobias in children and comorbid mental disorders. Patients between 6–18 years of age who had presented to the child psychiatry outpatient clinic at Bezmialem Vakıf University between October 2017 and February 2018 were assessed with The Kiddie Schedule for Affective Disorders and Schizophrenia-Present version (KSADS-P) for specific phobias and comorbid diagnoses. Risk factors of specific phobia were further evaluated with a data collection tool, developed by the authors of the present study. The most common specific phobia subtype was animal phobia (n=48; 48%), which was followed by natural environment (n=27; 27%), blood-injection (n=25; 25%), situational (n=17; 17%) and other phobia (n=2; 2%). The majority of the subjects (n=59; 63.4%) reported that specific phobia began between 3–7 years of age. While 32 percent of subjects reported a sudden onset, for 40% the onset was slow and gradual. Majority of the participants (67.7%) were not able to identify a possible trigger, whilst 25.3% reported that it started after a certain event. Only 10% of the participants had reportedly sought treatment for phobia in the past. Subjects with animal phobia or situational phobia had lower, blood/injection type phobia or natural environment type phobias had higher rates of comorbidity with an externalizing disorder as compared to the rest of the sample ($X^2=9.54$, $p=0.002$ and $X^2=11.51$, $p=0.001$, $X^2=6.00$, $p=0.014$ and $X^2=8.45$, $p=0.004$; respectively). In conclusion children and adolescents do not appear to seek help for specific phobias and such cases can be easily missed if not specifically enquired by clinicians.

Keywords: Phobia, child, adolescent, risk factors

Öz

Çocukluk çağı özgül Fobilerinde Risk Faktörleri ve Eş Tanılar

Bu araştırmada çocuklardaki özgül fobilerle ilişkili risk faktörlerinin ve eş tanılarının incelenmesi amaçlanmıştır. Bezmialem Vakıf Üniversitesi çocuk ruh sağlığı ayaktan tedavi ünitesine Ekim 2017 ve Şubat 2018 arasında başvuran 6–18 yaş hastalar özgül fobi ve eş tanılarını saptamak için, Okul Çağı Çocukları İçin Duygulanım Bozuklukları ve Şizofreni Görüşme Çizelgesi - güncel sürümü (ÇGDŞ-Ş) ile değerlendirildi. Özgül fobi ile ilişkili risk faktörleri çalışmanın yazarları tarafından geliştirilmiş bir veri toplama formu ile incelendi. En sık saptanan özgül fobi alt tipi hayvan fobisiydi (n=48; %48), onu doğal çevre fobisi (n=27; %27) kan-enjeksiyon fobisi (n=25; 25 %), durumsal fobi (n=17; 17 %) ve diğer fobiler (n=2; %2) takip etmekteydi. Olguların çoğu (n=59; %63,4), fobisinin 3–7 yaşları arasında başladığını bildirdi. Olguların %32'si ani başlangıç bildirirken %40'ı yavaş ve kademeli bir başlangıç bildirdi. Grubun büyük kısmı %67,7 %herhangi bir tetikleyici olay hatırlamazken, %25,3'ü fobinin belli bir olaydan sonra başladığını bildirdi. Olguların %10'u geçmişte fobisi için tedaviye başvurduğunu ifade etti. Grup eş tanılar açısından incelendiğinde, hayvan fobisi veya durumsal fobisi olanlarda grubun kalanına göre daha az, kan/enjeksiyon tipi fobi veya doğal çevre tipi fobisi olanlarda ise daha fazla dışsallaştırıcı bozukluk eş tanısı saptanmıştır (sırasıyla $X^2=9,54$, $p=0,002$; $X^2=11,51$, $p=0,001$; $X^2=6,00$, $p=0,014$; $X^2=8,45$, $p=0,004$). Sonuç olarak çocuk ve ergenlerin çoğunluğu özgül fobi için yardım arayışında değildir ve özellikle sorgulanmadığı takdirde kolaylıkla gözden kaçabilmektedir.

Anhtar Kelimeler: Fobi, çocuk, ergen, risk faktörleri

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INTRODUCTION

Specific phobias are characterized by excessive, circumscribed, persistent fear of an object or situation (APA, 2013). It is one of the most common anxiety disorders in children and adolescents that may cause significant impairment in social, academic, occupational functioning (Wittchen et al., 2011).

Specific phobias were reported to begin at 9–10 years of age (Stinson et al., 2007). Prevalence of childhood specific phobias varies between 5 and 10% in the community samples and the rate reaches up to 15–20% in clinical settings (Bener, Ghuloum, & Dafeeah, 2011; Kessler et al., 2005; Kim et al., 2010). Despite its well-known debilitating effects, only around 8–16% of patients suffering from specific phobias seek for treatment (Essau, Conradt, & Petermann, 2000).

According to Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5), 5 subtypes of phobias are listed, which are animal, natural environment, blood-injection-injury, situational and others for fears like loud sounds, vomiting or costumed characters (APA, 2013). Of these, animal and natural environment subtypes were reported to be highest rates (Essau, Conradt, & Petermann, 2000). These subtypes may have a different onset of age and different behavioral manifestations (Öst, 1987). For example, while in blood injection type phobia vaso-vagal activation and fainting are generally dominating clinical presentation, in animal phobia panic like symptoms predominate (Higa-McMillan, Francis, & Chorpita, 2014). Additionally different subtypes may have different age of onset (Ollendick, King, & Muris, 2002).

Comorbid diagnoses are frequent in children with specific phobias. Community and clinical studies suggest that 25–72% patients have at least one psychiatric condition accompanying to specific phobia (Ollendick, King, & Muris, 2002; Ollendick, Öst, Reuterskiöld, & Costa, 2010). It is mostly comorbid with other anxiety disorders and other phobia subtypes (Ollendick, Öst, Reuterskiöld, & Costa, 2010; Silverman et al., 1999). However, there is not enough studies on comorbid disorders especially in clinical samples. Additionally, comorbidity may well be different in various subtypes which may affect both etiology and treatment of the disorder (Kim et al. 2010).

Specific phobias have complex and heterogeneous etiology. Several mechanisms have been proposed for the

development of phobia but none of them truly proved to be determinant. Of these proposals, most speculated ones include genetic effects, learning, parenting factors, evolutionary preparedness, neuroanatomic and neurofunctional abnormalities, and temperament (King NJ, Muris P, & Ollendick TH, 2004). Family and twin studies indicate that specific phobias have a genetic base and familial aggregation (Silverman & Moreno, 2005). Rachman suggested that phobias are acquired through 3 different pathways which are classical conditioning, modeling, and transmission of negative information. To this proposition, multiple pathways can also act together in phobia development. (Rachman, 1976) Parenting factors also can play a critical role. Literature suggests that parents of anxious children are more “protective” and “intrusive”. Parents’ fear-related beliefs may prevent children to get positive reflection about phobic stimuli (Siqueland, Kendall, & Steinberg, 1996). Evolutionary preparedness or non-associative model of fear acquisition explains fears that are evolutionary adaptive and always been present. Some fears like waters, height, and snake are proposed to be biologically driven by evolution (Poulton & Menzies, 2002).

There is an insufficient body of literature about etiology of the disorder especially in a clinical sample with children and adolescents. Most of the studies in current literature focused generally on one subtype or in a community sample. Another gap of the literature is the lack of studies in Turkish population. In this study, we aimed to investigate the risk factors possibly associated with development specific phobias in the first place and examine comorbid conditions in a Turkish clinical sample of children and adolescents. We hypothesized that comorbidity profile would be different across various subtypes of the phobia.

METHOD

Study Design

The present study took place in Bezmialem Vakif University Child and Adolescent Psychiatry Outpatient Clinics between October 2017-February 2018 and the study protocol was approved by the ethics committee of the university. Informed consent was taken from children and their parents.

Participants

A total of 100 subjects aged 6–18 years with a confirmed diagnosis of specific phobia were recruited for the study.

Subjects with severe developmental disabilities (autism spectrum disorder and moderate to severe intellectual disability) and major medical illnesses (cancer and heart or kidney failure) were excluded from the study.

Scales

Subjects with a diagnosis of specific phobia were further evaluated with Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present Version (K-SADS-P) for diagnostic validity and comorbidities (Kaufman et al., 1997). K-SADS-P is a semi-structured diagnostic interview validated for use in Turkish language. Psychometric analysis resulted in high inter-rater reliability (90–100%) and the test-retest reliability (0.63–1.00) (Gokler et al., 2004).

Sociodemographic status and etiologic factors of specific phobia were assessed with a data collection questionnaire developed by the authors of the study according to the current literature. The questionnaire consisted of 29 questions (8 on sociodemographic variables, 21 on various factors about specific phobia). Questions about specific phobia were about age of onset, how the phobia started (sudden or gradual), whether there was a life threat in the first exposure, child's emotions and reactions when exposed to phobic object as well as parental reactions, whether there are people with phobia in family or child's friends and neighbors, impairment related with phobia and whether child and family had sought psychological treatment for phobia. The tool was completed by both parents and children.

Analysis

The data of the study were analyzed using the Statistical Package for the Social Sciences 19.0 (SPSS 19.0) program. Descriptive data were summarized using mean, standard deviation and percentage. Categorical variables were compared with chi-square test. A p value <0.05 was used for statistical significance.

RESULTS

The mean age of the sample was 11.54 ± 3.55 years and 52% were female. The sample consisted of mid-low socioeconomic families. Most of the children were from two parent families (94.8%). Socioeconomic characteristics of the sample are demonstrated in Table 1.

Table 1: Socioeconomic characteristics of the sample (N=100)

Variable	Point Estimate	SD
Age (mean years)	11.54	3.55
Female (%)	52	
Paternal Age (mean years)	41.4	7.6
Paternal Education (\geq high school %)	50	
Maternal Age (mean years)	37.6	6.2
Maternal Education (\geq high school %)	36.4	
Income (\geq 3000 tl/month %)	37.1	
Family status (two-parent family %)	94.8	
Number of siblings (mean)	2.3	0.9

Frequency of subtypes of specific phobias and phobic objects are shown in Table 2. The most common specific phobia type was animal phobia ($n=48$; 48%) and the most common phobic object was darkness ($n=22$; 22%).

Table 2: Frequency of phobia subtypes and phobic objects

Variable	N	%	Phobic objects	N (%)
Animal phobia	48	48	Insects	17 (17)
			Cat	17 (17)
			Dog	11 (11)
			Spider	8 (8)
Natural	27	27	Darkness	22 (22)
			Heights	5 (5)
Blood-injection	25	25	Injection	20 (20)
			Blood	4 (4)
			Dentist	3 (3)
Situational	17	17	Elevator	10 (10)
			Exam	2 (2)
			School	2 (2)
			Agoraphobia	2 (2)
Other	2	2	Choking	1 (1)
			Emetophobia	1 (1)
Combination of two types	15	15	Darkness+ injection	3 (3)
			Injection + dog	2 (2)
			Darkness + dog	2 (2)
Combination of three types	2	2	Elevator+injection+dog	1 (1)
			Spider+darkness+exam	1 (1)

Age of onset for specific phobias was between 3–7 years for 59 cases (63.4%). 32% of the sample reported a sudden onset for their phobia whilst 40% of the sample had a gradual onset. Only 25.3% of the sample indicated a triggering event. 56% of the sample reported emotions of fear and disgust to the phobic object; however, two-thirds of the sample never or hardly ever encountered with a phobic object before the phobia had started (Table 3).

Table 3: Risk/etiological factors for specific phobias

Variables		N (%)
Mean age of onset	3-6 years	48 (48)
	7-12 years	34 (34)
	13-18 years	6 (6)
Type of onset	Sudden	32 (33)
	Gradual	40 (42)
	Always been present	26 (27)
How it started	Without trigger	67 (73)
	Following a triggering event	25 (27)
Attitude towards the phobic object before phobia	Like	10 (11)
	Disgust	3 (3)
	Fear	27 (29)
	Dislike	26 (28)
	Nothing noticed	27 (29)
Important life event before phobia started	No	84 (85)
	Yes	15 (15)
Exposure before phobia started	Never-Hardly ever	35 (35)
	Sometimes	31 (31)
	Often-always	34 (34)
A real life threat in first exposure	No	91 (91)
	Yes	9 (9)
Exposure after phobia started	Never-Hardly ever	26 (26)
	Sometimes	42 (42)
	Often-always	32 (32)
Reactions when exposed to phobic object *	Safety behaviors	44 (44)
	Freeze	35 (35)
	Scream- run away	18 (18)
	Other	10 (10)
Parental reactions when exposed to phobic object*	Ignore	17 (17)
	Help	32 (32)
	Verbal support for exposure	44 (44)
	Behavioral support for exposure	14 (14)
Phobia in family	Yes	48 (48)
	No	51 (52)
Phobia in social network	Yes	14 (14)
	No	84 (86)
Impairment with phobia	No	4 (4)
	Mild	61 (61)
	Moderate	28 (28)
	Severe	7 (7)
Treatment seeking	No	90 (90)
	Yes	10 (10)
Psychiatric disorder in family	No	54 (55)
	Yes	45(45)

* Participants may select more than one choice.

According to the semi-structured psychiatric interview, 75% of the participants had at least one comorbid psychiatric disorder. Comorbid diagnoses were as follows; 43% Attention Deficit Hyperactivity Disorder (ADHD), 22% any anxiety disorders, 10% oppositional defiant disorder (ODD) and 22% other psychiatric disorder. In parallel with our hypothesis comorbidity profile was different across the different phobia subtypes. (Table 4) Subjects with animal phobia or situational phobia had lower rates of comorbidity with an externalizing disorder as compared to the rest of the sample ($X^2=9.54$, $p=0.002$ and $X^2=11.51$, $p=0.001$; respectively). On the other hand, blood/injection type phobia or natural environment type phobias showed higher comorbidity with externalizing disorders as compared to the rest of the sample ($X^2=6.00$, $p=0.014$ and $X^2=8.45$, $p=0.004$; respectively).

Table 4: Comorbid psychiatric disorders in different types of specific phobias

	Animal phobia	Natural phobia	Blood-injection phobia	Situational phobia	Total
ADHD	13 (27.1%)	18 (66.7%)	16 (64.0%)	1 (5.9%)	43 (43%)
Any Anxiety disorder	10 (20.8%)	8 (29.6%)	3 (12.0%)	7 (41.2%)	24 (24%)
ODD	3 (6.3%)	4 (14.8%)	3 (12.0%)	1 (5.9%)	10 (10%)
Other disorders	15 (31.3%)	5 (18.5%)	5 (20.0%)	2 (11.8%)	26 (26%)

ADHD: Attention Deficit Hyperactivity Disorder; **ODD:** Oppositional Defiant Disorder

DISCUSSION

To the best of our knowledge, this is the first study investigating etiological/risk factors and comorbid psychiatric diagnoses in different types of specific phobias in a clinical setting. In accordance with the previous studies, the present study revealed that animal phobia was the most prevalent phobia type and darkness was the most prevalent phobic object (Essau, Conradt, & Petermann, 2000; Last, Perrin, Hersen, & Kazdin, 1992).

Comorbidity rates of the sample were in line with the existing literature (Silverman et al., 1999). However, comorbidity profile is somewhat different in the present study, which may be explained by a sampling bias as the sample of the present study consists of the subjects who were already known to a child mental health clinic and already a

comorbid psychiatric disorder. In Silverman et al. (1999)'s study, majority of the sample had comorbid anxiety disorders. In the present study most prevalent comorbid diagnosis was ADHD which may be due to the patient profile in our outpatient clinic (Gormez, Orengul, Baljinnyam, & Aliyeva, 2017).

The results of the current study showed a rather different comorbidity profile between distinct subtypes of specific phobia which is in line with hypothesis of the present study. Subjects with blood-injury and natural environment type phobias had more comorbid diagnoses of ADHD and ODD as compared to other subtypes. Subjects with situational and animal phobia had less comorbid externalizing disorders. In accordance with Kim's (2010) study, subjects with blood-injection-injury subtypes had ADHD as the most common comorbidity (Kim et al., 2010). Further studies are needed to examine the effects of comorbid externalizing disorder to the development of phobia and explain the possible reasons for variation in comorbidity profile. The results of the present study should be interpreted cautiously due to the fact that ADHD is the one of the most common reasons to apply to a child and adolescent psychiatry outpatient clinic (Gormez, Orengul, Baljinnyam, & Aliyeva, 2017).

Literature on adult patients with specific phobia suggests that the age of onset of specific phobias is around 10 years of age (Stinson et al., 2007; Fisher, Tobkes, Kotcher, & Masia-Warner, 2006). However, in our study, most of the subjects reported that their phobia had started at the age of 3–6 years, which is in line with the literature on children with specific phobia, as a younger age of onset has been reported in studies with children (Menzies, & Clark, 1993). According to the literature agoraphobia appears to have the latest age of onset (adolescence) and other types may start earlier in children (Ollendick, King, & Muris, 2002).

One-fourth of the subjects reported an event that might have triggered their phobia in the first place, however for the majority of the sample (70%) there was no recall of such a trigger. Most of the sample (40%) reported a gradual onset for their phobia whilst phobic reaction had always been present for a quarter of the participants. This is in line with related literature (Menzies, & Clark, 1993; Ollendick, King, & Muris, 2002). These findings indicate that direct conditioning experiences may not explain most of the etiology in childhood phobias. Gradual onset may show that operant conditioning may play a role after first

encounter. Reactions of the person (avoidance etc.) in face of phobic object may exacerbate anxiety via positive reinforcement and may lead to a full blown specific phobia (Rachman, 1976; King, Muris, & Ollendick, 2004). But prospective studies with children and adolescents are needed to understand the development childhood phobia more properly.

More than half of the subjects ($n=53$) reported fear or dislike towards the phobic object before the phobia had become a problem for them. Although we did not inquire about temperament of the child, this finding may be associated with an inhibited temperament, as there are strong empirical data linking behavioral inhibition to the emergence of anxiety in general, and specific phobia in particular (Biederman, et al. 1990). Children with behavioral inhibition react with heightened anxiety and withdrawal to novel situations. Children's negative feelings and behaviors towards phobic object before the onset of specific phobia may result from modeling a family member with phobia. In parallel, our results showed that more than half of the subjects had a family member with a phobia. Interestingly modelling only run in family as most of them did not notice any friend or neighbor with a phobia in their social network which may suggests a genetic predisposition because modelling from network rarely existed (LeBeau et al., 2010; Silverman & Moreno, 2005) or parental effects over the anxiety as it was shown in previous studies (Siqueland, Kendall, & Steinberg, 1996).

An interesting finding of the study was that only one-tenth in the clinical group had sought help for their phobia. However, it should be borne in mind that most of the sample had mild to moderate impairment caused by their phobia. Moderate impairment meant that phobia had deleterious effect to life of the child. This finding is also consistent with the literature, which reports that only around 8% of adolescents would seek treatment (Essau, Conradt, & Petermann, 2000). Although the present study took place in a child psychiatry clinic where children and parents come to treat their disorders, most of the subjects did not want psychological treatment for their phobia. Phobia was not the reason for referral in most of the cases. This may be explained with the impairment caused by specific phobias are rather limited and bound to certain situations and environments, avoidance would be a common way of coping. Hence the wide spread impact of and unavoidable confrontation with the phobic situation i. e. social phobia

is not the case in specific phobias. Therefore, help seeking behavior is more restricted.

The first limitation of the study is the cross-sectional design which limits our inference of cause and effect relationship. The other limitations would be the relatively small sample size and lack of a control group.

In conclusion, the results of the present study point out the need for inquiry about specific phobias in the routine psychiatric evaluation. Further studies are needed to evaluate risk and etiological factors of childhood specific phobias in clinical settings.

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