Epidemiology of Fears and Specific Phobia in Adolescence: Results From the Mexican Adolescent Mental Health Survey

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ABSTRACT

Background: Specific phobia is among the most common disorders in the general adolescent population, but also among the least studied. The objectives of this study were to estimate the prevalence of specific fears among adolescents, the proportion of those with fears who meet criteria for specific phobia, and the proportion who recognize their fears as excessive and to identify comorbidity with other disorders and factors associated with severity and treatment.

Method: 3,005 youth aged 12 to 17 years participated in the Mexican Adolescent Mental Health Survey, a stratified multistage probability sample representative of adolescents living in Mexico City in 2005. Fears, specific phobia, and 20 other *DSM-IV* psychiatric disorders were evaluated with the adolescent computerized version of the World Mental Health Composite International Diagnostic Interview, administered by trained lay interviewers in the participants' homes. Descriptive, logistic regression, and discrete-time survival analyses were employed.

Results: Most adolescents reported at least 1 fear (76.5%); 36.5% of those met lifetime criteria for specific phobia, and 27.3% met criteria in the prior 12 months. Blood-injection-injury and animal fears were the most common types. Females were more likely to report any fear, to have more fear types, and to meet diagnostic criteria. Increased numbers of fears were associated with increased odds of meeting specific phobia criteria and with increased impairment. Among teens with specific phobia, 71.3% recognized their fear as excessive, 9.7% to 12.3% reported severe impairment, and only 6.5% had received treatment. Severity of impairment and comorbid disorders were associated with treatment seeking.

Conclusions: The large percentage of adolescents meeting diagnostic criteria coupled with the low proportion with serious impairment suggests that current diagnostic thresholds may be too low or not developmentally sensitive. Future research should address the nature of impairment for adolescents with specific phobia. Early detection and timely treatment are important given that specific phobia is persistent and highly comorbid and that few individuals seek treatment.

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Paradoxically, specific phobia is both the most common psychiatric disorder in general population surveys of adolescents[1,2] and among the least investigated. Perhaps the dearth of research is because of the perceived lack of severity of the disorder, the highly circumscribed nature of the disorder, the low service use by individuals with specific phobia, or the general belief that youth will simply grow out of this condition. In a nationally representative sample of US adolescents, 19.3% met criteria for lifetime specific phobia, the highest prevalence of the 15 disorders evaluated,[2] similar to the 20.9% of Mexican adolescents with 12-month specific phobia in a representative sample of Mexico City.[1] This disorder is particularly relevant given its early age at onset[3] and the evidence that it is a powerful predictor of the onset of other future psychiatric disorders.[4]

Fear, a prerequisite for phobia, is a normal response to a perceived threat. Such fears are an adaptive aspect of the normative developmental process, beginning with separation anxiety and fear directed at strangers in infants and progressing to fears of the dark and aspects of the natural environment in toddlers and children.[5] Overall, normative developmental fears are considered to diminish from childhood through mid-adolescence, though the empirical evidence is inconsistent, with some studies showing decreases in specific fears[6,7] and others showing increases in other types of fears.[8] Overall, fears of physical danger and punishment seem to decrease with age, whereas fears of social and achievement evaluation increase with age.[9]

Developmentally normative fears become nonnormative when they are disproportionate to the actual danger and interfere with functioning. Specific fears are considered a specific phobia by the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition[10] (*DSM-IV*) when the fear is excessive or unreasonable and persistent (at least 6 months in children and adolescents), exposure to the feared object or situation provokes an immediate anxiety response, the feared object or situation is endured with extreme distress or else avoided, and the fear impairs functioning. While *DSM-IV* criterion C requires adults to recognize that their fear is excessive, children are exempt from this criterion, and adolescents are not specifically mentioned. In treatment-seeking youth, different fear types may be associated to distinct clinical features such as anxious symptoms, comorbidity, and life satisfaction.[11]

To better understand what happens to developmentally normative and nonnormative fears in adolescence, and because of limited epidemiologic data on specific phobia in this developmental period to inform revisions to the diagnostic criteria of the *DSM-5*[12,13] and *ICD-11,* relevant data from the Mexican Adolescent Mental Health Survey were analyzed. The objectives were to estimate how common specific fears are in the adolescent population, the proportion of adolescents with such fears that meet criteria for lifetime and 12-month specific phobia, the distribution of fears among

those with specific phobia, and the degree of comorbidity and to identify the factors associated with the severity of impairment and the likelihood of service use. An additional objective was to evaluate whether adolescents with specific phobia recognize their fears as excessive.

- The high prevalence of specific phobia in adolescents coupled with high comorbidity and lack of treatment-seeking expressly for specific phobia suggests that many adolescents in psychiatric treatment may suffer from specific phobia even though the disorder is not the consultation motive or presenting complaint.
- Youth seeking psychiatric services should be evaluated for specific phobia given that the disorder is persistent and highly comorbid and that few seek treatment specifically for it despite the existence of effective treatments.

Clinical Points

METHOD

Participants

This report presents data from the Mexican Adolescent Mental Health[1] survey, conducted in 2005 with 3,005 adolescents aged 12 to 17 years and selected from a stratified multistage area probability sample representative of the nearly 2 million adolescents residing in Mexico City. In all strata, the primary sampling units were census count areas cartographically defined and updated for the XII Population and Housing Census. Secondary sampling units were city blocks selected with probability proportional to size. All households within these city block units with adolescents in the age range were selected. One eligible adolescent from each of these households was randomly selected using the Kish method of random number charts. The response rate of eligible respondents was 71%. The sociodemographic distribution of the sample, reported elsewhere,[1] closely resembles the distribution of the Mexico City adolescent population in that half are female, two-thirds live with both parents, roughly 80% are students, and parental socioeconomic level is generally low.

Procedures

A verbal and written explanation of the study was given to both parents and adolescents, after which signed informed consent from a parent or legal guardian was obtained, as was the assent of the adolescent. Interviews were conducted in the participants' homes. All study participants and their families were offered information on local mental health services. The Internal Review Board of the National Institute of Psychiatry approved the recruitment, consent, and field procedures.

Measures

Specific phobia and comorbid disorders were evaluated with the fully structured World Mental Health adolescent version of the Composite International Diagnostic Interview (WMH-CIDI-A).[14,15] The computer-assisted version was administered; in this version, extensively trained lay interviewers read the questions on the computer screen to the participant. The questions are chosen by the computer on the basis of the participant's previous responses and on complex logical skip patterns. The interviewer inputs the respondent's answers directly into the computer, and consistency checks are programmed such that inconsistent information is probed and corrected. Diagnostic classification is based on *DSM-IV* criteria.[10] Age at onset of disorders was evaluated by self-report using anchoring events to aid recall. Role impairment was evaluated by the Sheehan Disability Scale, which asks participants to rate how much their symptoms have disrupted 4 different areas of life (school/work, home, family relations, social life) on a scale from 0 to 10 (0 representing no impairment and 10, extreme impairment).[16] Impairment with a rating of 7 or higher was classified as serious.

Statistical Analysis

Data were weighted to adjust for differential probabilities of selection and nonresponse as well as post-stratification to the total Mexico City adolescent population according to the year 2000 Census in the target age and sex range. Prevalence estimates are reported as weighted proportions. As a result of this complex sample design and weighting, estimates of standard errors for proportions were obtained by the Taylor series linearization method using SUDAAN software.[17] Multivariate significance was evaluated using Wald χ^2 tests based on design-corrected coefficient variance-covariance matrices. Logistic regressions were performed to estimate the association of number of fears, fear types, and any possible sex interactions with risk for specific phobia and to estimate correlates of serious impairment and service use. To estimate the comorbidity associated with specific phobia, bivariate models were first performed for each individual disorder or disorder class using discrete-time survival analysis with person-years as the unit of analysis and so taking into account the age at onset of each disorder.[18] Each model controlled for the adolescent's age at interview, sex, and person-year. Then, a multivariate model estimated the association of specific phobia with all other disorders simultaneously also using discrete-time survival analysis with person-years as the unit of analysis. This model controlled for age at interview, sex, diagnostic category, and person-year. The survival coefficients and their standard errors were exponentiated and are reported in the form of odds ratios (ORs) and 95% confidence intervals (95% CIs).

RESULTS

As seen in Table 1, specific fears are common among adolescents, three-fourths of whom reported having at least 1 type of fear in their lifetime. The most common fears were blood-injection-injury and animal fears, whereas the least common was the situational fear of flying. Of those with

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Table 1. Distribution of Fears and Proportion of Those With Fears Who Meet *DSM-IV* Criteria for Specific Phobia Among Adolescents From the General Population

	Among Total Adolescent Sample		% of Those With Type or No. of Types of Fears Who Have Lifetime Specific Phobia		% of Those With Type or No. of Types of Fears Who Have 12-Month Specific Phobia		Odds of Meeting Criteria for Lifetime Specific Phobia Given Number and Type of Fear[a]	
	%	SE	%	SE	%	SE	OR	95% CI
Type of fear								
Animal	43.2	0.9	43.1	1.2	33.8	1.2	1.0	
Natural environment (except height)	27.7	1.2	47.1	1.7	36.8	2.0	1.2	1.0–1.4
Natural environment: height	29.3	0.8	40.7	1.2	30.3	1.3	1.1	0.9–1.3
Blood-injection-injury	46.5	0.8	49.4	1.9	37.7	1.7	0.9	0.8–1.0
Situational: closed spaces	24.8	0.8	44.9	1.9	33.1	2.0	1.3	1.1–1.5
Situational: flying	18.3	0.6	49.7	2.7	36.5	2.9	1.3	1.0–1.7
At least 1 fear	76.5	0.7	36.5	1.0	27.3	0.9	NA	
No. of types of fears								
0	23.6	0.7	0.0	0.0	0.0	0.0	NA	
1	24.3	1.2	19.7	1.4	14.6	1.0	1.0	
2	22.1	0.6	33.7	2.0	24.7	1.6	2.1	1.6–2.7
3	12.9	0.8	46.8	1.8	34.8	2.0	3.5	2.7–4.7
4	7.7	0.5	50.2	4.5	35.9	4.2	4.0	2.6–6.3
5	5.0	0.4	61.5	3.8	45.7	4.1	6.2	4.2–9.2
6	4.5	0.4	61.6	3.9	53.0	4.8	6.2	4.2–9.3

[a]Odds of meeting *DSM-IV* diagnostic criteria for lifetime specific phobia for each fear type compared to animal fears and of each number of fear types compared to only 1 fear type.
Abbreviation: NA = not applicable.

Table 2. Distribution of Fears and Proportion of Those With Fears Who Meet *DSM-IV* Criteria for Specific Phobia by Sex

	Total Adolescent Sample					% of Those With Type or No. of Types of Fears Who Have Lifetime Specific Phobia					% of Those With Type or No. of Types of Fears Who Have 12-Month Specific Phobia				
	Females		Males		Significant Sex Difference	Females		Males		Significant Sex Difference	Females		Males		Significant Sex Difference
	%	SE	%	SE		%	SE	%	SE		%	SE	%	SE	
Type of fear															
Animal	49.6	1.3	36.7	1.0	***	47.6	1.3	37.1	2.5	***	39.9	1.5	25.5	2.6	***
Natural environment (except height)	32.6	1.6	22.8	1.4	***	50.6	2.3	42.1	2.6	*	42.7	2.3	28.3	2.4	***
Natural environment: height	29.8	1.3	28.8	1.3		46.8	1.8	33.5	1.9	***	37.3	2.0	22.0	1.5	***
Blood-injection-injury	50.4	1.2	42.7	1.1	***	52.2	2.1	45.3	3.6		43.0	2.0	30.2	3.1	**
Situational: closed spaces	29.1	1.5	20.6	0.8	***	50.9	2.3	38.7	2.8	***	39.3	2.1	26.6	2.8	***
Situational: flying	21.0	1.1	15.7	0.8	***	54.2	2.2	43.6	4.2	**	43.0	2.3	27.9	4.5	***
At least 1 fear	79.5	1.1	73.4	1.0	***	40.9	1.1	31.8	1.6	***	32.9	1.2	21.3	1.4	***
No. of types of fears															
0	20.5	1.1	26.6	1.0	***	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
1	22.3	1.2	26.3	1.8	*	20.3	1.8	19.1	2.1		16.6	1.7	12.8	1.5	
2	21.7	1.1	22.4	1.2		38.9	2.5	28.5	2.6	**	31.6	2.2	17.9	1.9	***
3	13.9	1.1	11.9	1.0		47.7	3.0	45.6	2.0		36.6	2.9	32.7	2.5	
4	8.7	0.8	6.6	0.8		49.0	5.3	51.9	5.6		35.4	5.0	36.6	6.0	
5	6.6	0.6	3.4	0.5	***	67.5	4.1	49.8	9.5		53.9	5.1	29.5	7.5	*
6	6.2	0.6	2.9	0.4	***	66.6	4.7	50.9	7.3		61.9	4.1	33.8	8.4	**

*$P \leq .05$. **$P \leq .01$. ***$P \leq .001$.

any fear, 36.5% met criteria for lifetime specific phobia, and 27.3% met criteria for specific phobia in the prior 12 months. Seventy-five percent of those who met criteria for lifetime specific phobia also met criteria in the prior 12 months. The majority of adolescents with fears reported only 1 or 2; however, adolescents who met criteria for specific phobia reported a greater number of fears.

The last 2 columns of Table 1 show that the greater the number of fears, the more likely the youngster meets criteria for specific phobia. The interaction of sex with number of fears was tested, but found not to be significant. With regard to fear types, those with a fear of closed spaces had 30% greater odds of meeting criteria for specific phobia than those with animal fears. There were no significant differences for other types of fears or for sex-by-type interaction.

The sex distribution of fears in the overall sample of adolescents is presented in Table 2. A greater proportion of females reported fears than males, and a greater proportion of females who reported fears met criteria for specific phobia than did males who reported fears. Females reported more of every type of fear except fear of heights, for which there was no sex difference. Females also reported a greater number of fears.

Table 3 shows the distribution of fears among those with lifetime specific phobia. The majority of these respondents reported more than 1 type of fear. Females reported more

Table 3. Distribution of Fears and Impairment Among Adolescents With Lifetime *DSM-IV* Specific Phobia

	Total		Females		Males		Significant Sex Difference
	%	SE	%	SE	%	SE	
Type of fear							
Animal	66.7	1.7	72.7	1.3	58.3	3.5	***
Natural environment (except height)	46.7	2.1	50.7	2.8	41.0	3.0	*
Natural environment: height	47.1	1.8	46.7	2.5	47.7	3.1	
Blood-injection-injury	67.8	1.5	72.5	2.1	61.2	1.9	***
Situational: closed spaces	43.9	1.5	46.7	2.7	39.9	2.7	
Situational: flying	32.6	2.2	35.0	2.3	29.2	3.1	
No. of types of fears							
1	17.1	1.3	14.0	1.4	21.5	2.1	**
2	26.6	1.5	26.0	2.0	27.3	1.8	
3	21.6	1.6	20.5	1.7	23.2	2.2	
4	13.8	1.4	13.2	1.8	14.6	1.8	
5	10.9	0.9	13.7	1.4	7.2	1.3	**
6	9.9	1.1	12.6	1.6	6.2	1.3	**
Reports avoidance	74.3	1.1	72.6	1.6	76.6	2.3	
Recognizes fear as excessive	71.3	1.5	74.0	1.6	67.5	2.7	*
Serious impairment at home	11.5	1.1	13.4	1.9	8.4	2.0	
Serious impairment at school	12.1	1.4	14.1	1.6	8.9	1.9	**
Serious impairment in family relations	9.7	1.0	11.8	1.8	6.3	2.0	
Serious impairment in social life	12.3	1.4	13.5	1.9	10.4	2.5	
Has received treatment	6.5	0.8	7.0	1.2	5.9	1.2	

*$P \leq .05$. **$P \leq .01$. ***$P \leq .001$.

animal, natural environment, and blood-injection-injury fears, but there were no significant sex differences for height, closed spaces, or flying. Almost three-fourths of youth with lifetime specific phobia reported avoidance behaviors, 71% recognized the fear as excessive (females are more likely than males to recognize their fear as excessive), and only 6.5% had sought treatment. While by definition all reported impairment, between 10% and 12% reported serious impairment in some area of functioning.

Table 4 presents the comorbidity of specific phobia with 5 different classes of disorders and with each of the 20 individual disorders that were evaluated. Bivariate models estimated greater odds for all classes of disorders, ranging from 1.5 for any substance use disorder to 3.0 for any other anxiety disorder. However, in a multivariate model that controlled for all other classes of disorders, the odds for any substance disorder were attenuated such that they were no longer significant. The greatest odds were for any other anxiety disorder, followed by any eating disorder, any mood disorder, and, lastly, any impulse-control disorder. The individual disorder that showed the greatest comorbidity with specific phobia was anorexia, at an estimated 5 times the odds. This disorder was followed by agoraphobia, panic disorder, and social phobia, which had adjusted odds ratios in the range of 1.9 to 2.2. Major depressive disorder and oppositional defiant disorder had 40%–50% greater odds of specific phobia after adjustment for other disorders.

Table 5 presents the results of a multiple logistic regression of demographic and clinical characteristics associated with the severity of impairment among those with specific phobia. Number of fears predicted more serious impairment.

Table 4. Comorbidity of *DSM-IV* Lifetime Specific Phobia With Other *DSM-IV* Disorders

	Bivariate Model,[a] Lifetime Specific Phobia Comorbidity		Multivariate Model,[b] Lifetime Specific Phobia Comorbidity	
Disorder	OR	95% CI	OR	95% CI
Anxiety disorders				
Panic disorder	2.8	1.9–4.2	2.0	1.3–3.1
Generalized anxiety disorder	2.2	1.1–4.4	1.2	0.6–2.4
Agoraphobia	3.0	2.4–3.7	2.2	1.7–2.8
Social phobia	2.6	2.2–3.1	1.9	1.6–2.4
Separation anxiety	0.8	0.7–0.8	0.8	0.8–0.9
Posttraumatic stress disorder	1.5	0.8–2.8	0.5	0.2–1.0
Any other anxiety disorder	3.0	2.6–3.5	2.6	2.2–3.1
Mood disorders				
Major depressive disorder	1.9	1.5–2.5	1.4	1.0–1.9
Dysthymia	0.8	0.7–0.9	1.0	0.8–1.1
Bipolar disorder (I or II)	2.3	1.5–3.4	1.5	0.9–2.5
Any mood disorder	2.2	1.7–2.7	1.5	1.1–1.9
Impulse-control disorders				
Intermittent explosive disorder	0.9	0.8–0.9	0.9	0.9–1.0
Oppositional defiant disorder	2.4	1.9–2.9	1.5	1.2–1.9
Conduct disorder	1.7	1.3–2.1	1.0	0.7–1.5
Attention-deficit/ hyperactivity disorder	1.3	0.7–2.3	0.7	0.4–1.2
Any impulse-control disorder	2.0	1.6–2.5	1.4	1.1–1.8
Substance use disorders				
Alcohol abuse	1.5	1.0–2.1	1.1	0.8–1.5
Alcohol abuse with dependence	3.2	1.0–9.8	3.5	0.9–13.8
Drug abuse	1	0.8–1.2	1.1	0.9–1.4
Drug abuse with dependence	1.6	0.4–5.7	0.3	0.1–1.6
Any substance use disorder	1.5	1.0–2.1	1.1	0.8–1.6
Eating disorders				
Anorexia	5.5	3.34–8.94	5.6	3.5–9.0
Bulimia	4.2	2.29–7.57	2.1	0.9–4.7
Binge-eating disorder	1.7	0.96–3.09	1.0	0.5–1.9
Any eating disorder	2.8	1.85–4.16	1.7	1.1–2.7

[a]Twenty-five separate discrete-time survival models controlling for person-year, age, and sex.
[b]Two multivariate discrete-time survival models controlling for person-year, age, sex, and other disorders: 1 that included each specific disorder simultaneously and 1 that included each class of disorder simultaneously.

Whereas having 2 fear types doubled the odds of serious impairment compared to those with only 1 fear type, having all 6 fear types resulted in 20 times the odds of impairment. Blood-injection-injury and height fears were 50% less impairing.

Finally, a multiple logistic regression was performed to evaluate simultaneously demographic and clinical characteristics associated with having received treatment in the prior 12 months among those with 12-month specific phobia. The characteristics included in the model were sex, age, avoidance behaviors, serious impairment, number of fears, type of fears, and having comorbid disorders. Only serious impairment (OR = 2.19; 95% CI, 1.23–3.87) and having a comorbid eating disorder (OR = 3.73; 95% CI, 1.31–10.64) or mood disorder (OR = 2.07; 95% CI, 1.01–4.24) predicted having received treatment.

DISCUSSION

This representative survey contributes to an understanding of fears and specific phobia during adolescence.

Table 5. Individual and Clinical Characteristics Associated With Any Serious Impairment in the Previous 12 Months

Characteristic	OR	95% CI
Female sex	1.2	0.8–1.9
Age	1.1	0.9–1.2
Avoidance	1.3	0.8–2.1
No. of fears		
1	1.0	
2	2.1	1.1–4.3
3	4.0	1.9–8.6
4	8.7	2.3–32.8
5	16.6	3.1–89.5
6	20.1	4.8–83.3
Type of fear		
Animal	0.7	0.4–1.5
Natural environment (except height)	0.7	0.3–1.3
Natural environment: height	0.5	0.3–0.9
Blood-injection-injury	0.5	0.3–0.7
Situational: closed spaces	0.9	0.6–1.4
Situational: flying	1.0	1.0–1.0

As three-fourths of youth reported at least 1 fear, suggesting that fears are the norm, and specific phobia as a disorder is common, present in a third of those with fear, establishing the appropriate threshold of diagnostic criteria is crucial for distinguishing between developmentally normative fears and phobia as psychopathology.

The current findings corroborate other studies in varying cultures and countries that report a greater prevalence of fears and specific phobia among females than males during childhood,[19] adolescence,[8] and adulthood.[20] While one cannot rule out a reporting bias in which admitting to fears is less socially acceptable for males than females, the consistent sex differences found overall for internalizing disorders and internalizing liability suggest a true difference.[21]

The distribution of types of fears is consistent with other studies showing that blood-injection-injury and animal fears are the most common types and situational fears are the least common types among children[19] and adolescents,[8] whereas in adults and elderly adults blood-injection-injury fears are less common and fears of animals, the natural environment, and heights take prominence.[20,22–24] The distribution of types of fears is similar among youth with and without specific phobia; however, those with situational and environmental fears are more likely to meet diagnostic criteria than those with animal fears.

The proportion of adolescents with specific phobia reporting severe impairment (9.7%–12.3%) was lower than the proportion of adults reporting severe impairment (16.2%–18.6%) using the same measure of severity.[25] Apparently, specific phobia does not prevent adolescents from going to school or work or carrying out household responsibilities to the same degree as in adults. Thus, diagnostic thresholds may need to be higher for adolescents. Severity of impairment and comorbid eating and mood disorders are the most important factors, however, in treatment-seeking. The proportion of adolescents with specific phobia receiving treatment is less than half the proportion of adolescents with other disorders in Mexico who seek treatment,[26] perhaps reflecting an inappropriately liberal threshold of the diagnostic criteria for adolescents.

It has been suggested that the ability of people to accommodate their phobias to their lifestyle may contribute to the underrecognition of the disorder[20] and therefore perhaps also to the underutilization of health services. This is quite unfortunate given the effectiveness of behavioral interventions for treating these disorders, including single-session treatments.[27–30] On the other hand, these treatments are not widely available in Mexico, and this may help explain the lack of service utilization.

The findings demonstrate both interanxiety and cross-class comorbidity, with the greatest comorbidity for other anxiety disorders and eating disorders and the least for impulse-control disorders. Substance use disorders are related to specific phobia only inasmuch as they are related to other disorders. Surprisingly, the highest comorbidity for any individual disorder is with anorexia, though this should be interpreted with caution given the small number of youth with anorexia. This particular result is not due to specific fears related to food, but both disorders may share a large degree of trait neuroticism.[31,32] Further research is needed to determine the reason for the comorbidity of specific phobia with other disorders; possible explanations include that a nonspecific vulnerability for psychopathology exists (specific phobia as a marker of underlying "neuroticism"), that specific phobia leads to the development of other disorders, or that specific phobia results from other disorders. This last possibility is unlikely given the early age at onset of specific phobia, prior to most other disorders. Specific phobia may contribute to the development of other disorders either through the generalization of anxiety or as a response to adapting to one's phobias. For example, specific phobia is associated with a 50% increased odds of oppositional defiant disorder, which may be a consequence of actively trying to avoid feared stimuli or oppositionality in the face of being obliged to confront fears or to control one's environment. Irrespective of whether this comorbidity has a causal relation or not, the early age at onset of specific phobia and the high comorbidity suggest that early detection of this disorder should be considered a marker for future psychopathology.

With regard to the nosologic implications of these findings, specific phobia is not very specific, as 83% of adolescents with the disorder had 2 or more fear types (see Table 3). This is similar to the estimates for adults, in which 71% of those with specific phobia have 2 or more fears.[20] With regard to the current discussion of subtyping,[13] these findings do not suggest important differences between fear types, but rather the relevance of number of fear types. As would be expected, the greater the number of fear types, the greater the impairment resulting from the disorder; however, there is no obvious cutpoint beyond which impairment is substantially greater; rather, there is a monotonic relationship between number of fears and impairment. While criterion C of the *DSM-IV* states that children need not recognize their fear as excessive, no age range is stipulated, such that it is unclear whether this exclusion applies to adolescents. These

findings show that the majority of adolescents (71%) with specific phobia recognize their fear as excessive, though this is less than the estimates for adults, in which only 4% do not recognize their fear as excessive.[33] The current proposal for *DSM-5* is to remove the recognition of fear as excessive from the criteria entirely. In terms of proposals for the impairment criterion, the high prevalence of the disorder, coupled with the small proportion reporting severe impairment, suggests that diagnostic thresholds may be too low or overly inclusive, especially for developing adolescents resolving developmentally common fears. Impairment appears to be a very discriminating feature, and thus its retention in diagnostic criteria may be paramount for diagnostic precision in this and potentially all age groups.

The findings of this survey should be interpreted in light of the study's limitations. Diagnostic precision may be diminished by the use of fully structured interviews administered by trained lay interviewers. Nevertheless, a prior study evaluating the validity of the WMH-CIDI-A specific phobia diagnosis found substantial agreement with the clinician-administered Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS), with a κ of 0.73 and area under the curve of 0.94, albeit with higher CIDI estimates than K-SADS estimates.[34] The extent to which the high rates found in this study are due to measurement overestimation or to overly liberal diagnostic criteria cannot be established with complete certainty. Although data from the validity study suggest some degree of measurement overestimation, our findings do also suggest that current *DSM-IV* diagnostic thresholds may be too low.

In conclusion, given that specific fears appear to be normative in adolescence, establishment of diagnostic criteria that are discriminating and developmentally sensitive is paramount. That a third of adolescents with specific fears meet diagnostic thresholds (which include some impairment) but only 10% to 12% report serious impairment suggests that diagnostic thresholds may be too low. Although measurement overestimation may account for some of this discrepancy, the nature of impairment and hence clinical significance for specific phobia in children versus adolescents versus adults is an important question for future study.[12] This does not mean that less-impaired youth meeting criteria for specific phobia should be overlooked; specific phobia as currently diagnosed may be an important indicator of future psychopathology, as suggested by previous literature and by high comorbidity shown here in discrete-time models. Whether treating specific phobia early in its course can prevent the development of later disorders is unknown and an important question for future research.

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