

# The Relationship of Agoraphobia and Panic in a Community Sample of Adolescents and Young Adults

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**Background:** Data are presented on the prevalence of DSM-IV panic and agoraphobia in a community sample of adolescents and young adults in Munich, Germany.

**Methods:** A total of 3021 respondents aged 14 to 24 years were assessed with a revised version of the Composite International Diagnostic Interview (CIDI). Respondents classified as having agoraphobia without panic were subtyped by number of agoraphobic trigger situations and subjected to a clinical review.

**Results:** Lifetime prevalence of DSM-IV agoraphobia in the revised CIDI was higher (8.5%) than that of panic attack (4.3%) or panic disorder with (0.8%) or without (0.8%) agoraphobia. Marked differences in symptomatology, course, and associated impairments between panic disorder and agoraphobia were found. Most patients with agoraphobia reported neither full nor lim-

ited attacks or uncued paniclike experiences. Clinical review revealed that many respondents classified by the CIDI as having agoraphobia actually have specific phobia, resulting in a corrected agoraphobia prevalence of 3.5%. Number of agoraphobia trigger situations was identified as a useful way of differentiating patients with true agoraphobia from those with simple phobia. Even after correcting for overdiagnosis, however, the majority of respondents with confirmed agoraphobia were found not to have a prior history of panic.

**Conclusions:** The results call into question the assumed key pathogenic role of panic attacks in the onset of agoraphobia. Consistent with findings that agoraphobia without panic is rarely seen in clinical settings, we find that such patients seldom seek professional treatment.

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**T**HE RELATIONSHIP between uncued spontaneous panic attacks and agoraphobia has received considerable attention during the past 2 decades. Based on the influential work of Klein,<sup>1,2</sup> and supported by subsequent neurobiological and cognitive studies,<sup>3-7</sup> agoraphobia has been widely viewed as a secondary complication of spontaneous panic attacks or paniclike experiences. Consistent with this view, the DSM-IV<sup>8</sup> classified agoraphobia under the category of panic disorder with agoraphobia and relegated the diagnosis of agoraphobia without a history of panic to a residual category.<sup>9</sup> Agoraphobia without panic, in this scheme, shares the same essential features as agoraphobia with panic except that the focus of fear is on the occurrence of incapacitating or embarrassing paniclike symptoms or limited attacks rather than on full panic attacks.

Although this view has received considerable support from clinical stud-

ies,<sup>10,11</sup> in which agoraphobia without a history of at least subthreshold panic attacks (limited attacks) is quite rare, it has not gone unchallenged.<sup>12</sup> Most strikingly, epidemiological studies, with only rare exceptions,<sup>13</sup> consistently find that only a minority of respondents classified as having agoraphobia report the occurrence of panic attacks before the onset of their agoraphobia.<sup>14-19</sup> This finding casts doubt on the assumed key pathogenic role of spontaneous panic attacks for agoraphobia. An alternative view, codified in the *International Statistical Classification of Diseases, 10th Revision (ICD-10)*<sup>20</sup> regards panic attacks as diagnostically relatively unspecific expressions of severe anxiety.<sup>12</sup>

An explanation for the apparent divergent findings in clinical and epidemiological samples might be that patients who have agoraphobia without panic are less likely to seek treatment than those with panic. Another possibility is that the epidemiological findings are not valid. This possibility is supported by clinical

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## SUBJECTS AND METHODS

### DESIGN

These data come from the baseline wave of the Early Developmental Stages of Psychopathology study, a longitudinal general population survey of adolescents and young adults aged 14 to 24 years in Munich, Germany, designed to collect data on the prevalences, risk factors, comorbidities, and course of mental disorders across a 5-year period.<sup>22,23</sup> The sample was drawn from 1994 government registries of all residents in metropolitan Munich who were expected to be aged 14 to 24 years during the first half of 1995. Respondents aged 14 to 15 years were oversampled. The 3021 interviews were conducted face to face using a computer-assisted method in the homes of respondents during this time period. The response rate was 71%.

### DIAGNOSTIC ASSESSMENT

Diagnostic assessment was based on an expanded version of the World Health Organization's Composite International Diagnostic Interview (CIDI)<sup>24</sup> known as the Munich CIDI (M-CIDI).<sup>23,25-27</sup> The M-CIDI is designed to assess symptoms, syndromes, and diagnoses of 48 mental disorders along with information about onset, duration, and clinical and psychosocial severity according to *DSM-IV* criteria. It allows for a more detailed and comprehensive evaluation of panic attack, panic disorder, and agoraphobia than the standard CIDI by adding the following features: (1) separate 12-month and lifetime questions to assess "fearful spells" (discrete periods of intense fear or discomfort) and spontaneous "limited attacks" (attacks with 1-3 symptoms) in addition to full-blown *DSM-IV* panic attacks; (2) expanded questions for associated diagnostic features of panic and agoraphobia, including questions about situational-bound and predisposed panic attacks as well as paniclike experiences; (3) age-of-onset questions for key features of each syndrome to evaluate temporality; and (4) verbatim descriptions for panic and phobic experiences aimed at allowing clinical reevaluation of appropriateness of responses after completion of the interview.

Diagnoses were obtained by using the M-CIDI diagnostic algorithms. Agoraphobia without history of panic disorder as classified by the *DSM-IV* was subtyped for number of agoraphobic trigger situations endorsed, with respondents reporting fear of only 1 (AG1) or more (AG2+) of a total of 6 agoraphobic situations. This modification was made based on previous findings that patients who report AG1 are less likely than those reporting AG2+ to be truly agoraphobic<sup>28,29</sup> and is consistent with *DSM-IV*'s stipulation that agoraphobic fears "typically involve characteristic clusters of situations . . ."<sup>28(p396)</sup> The M-CIDI was administered in its computerized form using a laptop computer. The mean duration for completing the interview was 77 minutes.

### RELIABILITY AND PROCEDURAL VALIDITY

Psychometric properties of the CIDI have been established in several studies.<sup>27</sup> The M-CIDI was additionally tested for test-retest reliability in a community sample.<sup>26,28</sup> Procedural clinical validity was examined in 60 outpatients against clinicians' best-estimate consensus diagnoses and taking into

account all available information (medical records, diagnostic interview, diagnostic checklist) at the end of patients' treatments.<sup>29</sup> Test-retest reliability for lifetime diagnoses was  $\kappa = 1.00$  for panic disorder,  $\kappa = 0.66$  for agoraphobia with only one trigger situation (AG1), and  $\kappa = 0.84$  for agoraphobia with 2 or more trigger situations (AG2+).<sup>28</sup> Agreement with clinical consensus diagnoses (validity standard) was  $\kappa = 0.74$  for panic disorder, .66 for AG1, and .84 for AG2+.<sup>29</sup>

### INTERVIEWERS AND INTERVIEWER TRAINING

The survey staff consisted of 10 clinical interviewers (clinical psychologists in postgraduate education) and 25 full-time professional health research interviewers (professional background: 2 physicians, 6 psychologists, and 5 social workers; the remainder had various other professional backgrounds). All had extensive experience in diagnostic interviewing, including use of the CIDI, from various other medical surveys (mostly pharmacoepidemiological in nature) and the developmental work of the M-CIDI. Interviewers received 2 weeks of training in both the paper-and-pencil and computerized versions. This was followed by at least 10 practice interviews that were closely monitored by our staff and additional 1-day booster sessions throughout the study.

### CLINICAL REAPPRAISAL

The first author (H.-U.W.) and 2 clinical psychologists, all experienced with anxiety disorders and the Structured Clinical Interview for *DSM-IV*,<sup>30</sup> separately reevaluated 173 interviews of respondents reporting agoraphobic fears. The aim was a clinical consensus diagnosis that took into account all the available data from the M-CIDI interview, including the verbatim entries from the open-ended questions, as well as treatment information available for 39 subjects obtained from the records of treating mental health specialists, obtained with written consent from respondents. The clinical reviewers were instructed to explore a potential underestimation of panic and overestimation of agoraphobia by determining whether symptom data and verbatim examples clearly fit the *DSM-IV* agoraphobia description. They were also asked whether available treatment records supported the diagnosis, if there was any information for the presence of paniclike experiences, and whether the respondent's symptom description might be better accounted for by other *DSM-IV* diagnoses. In 26 cases of doubt or no consensus among the 3 evaluators, a separate Structured Clinical Interview was conducted for clarification.

### STATISTICAL ANALYSIS

A weight was used to adjust for this oversampling as well as for minor discrepancies between the sample and population distributions on the cross-classification of age, sex, and neighborhood.<sup>22,23</sup> **Table 1** reports  $N^{\text{weighted}}$  and prevalence<sup>weighted</sup> for more detailed information. Analysis of weighted data was carried out using the STATA software package (STATA Corp, College Station, Tex). Age-of-onset analyses were obtained using the SURVIVAL procedure. The Kaplan-Meier log rank statistic was used to test differences between hazard curve distributions. Statistical significance was evaluated at the .05 level using 2-sided tests.

**Table 1. Lifetime and 12-Month Prevalence of DSM-IV Panic Attacks, Panic Disorder, and 2 Different Definitions of Agoraphobia in the Population of 14- to 24-Year-Olds by Age and Sex in the EDSP (N = 3021)\***

	Panic Disorder												Agoraphobia Without History of Panic†							
	Panic Attack				Panic Disorder Without Agoraphobia				Panic Disorder With Agoraphobia				AG1				AG2+			
	No.	No. <sub>w</sub>	% <sub>w</sub>	SE	No.	No. <sub>w</sub>	% <sub>w</sub>	SE	No.	No. <sub>w</sub>	% <sub>w</sub>	SE	No.	No. <sub>w</sub>	% <sub>w</sub>	SE	No.	No. <sub>w</sub>	% <sub>w</sub>	SE
	Lifetime																			
Total	122	131‡	4.32	0.42	22	24*	0.80	0.19	20	25‡	0.82	0.20	173	166‡	5.49	0.47	69	70‡	2.31	0.31
14-17 y	45	30	3.27	0.51	5	3	0.28	0.13	4	3	0.33	0.17	89	56	6.10	0.68	34	25	2.67	0.49
18-24 y	77	101	4.79	0.57	17	22	1.03	0.26	16	22	1.04	0.27	84	110	5.22	0.60	14	45	2.16	0.39
Males total	38	45	2.91	0.51	5	6	0.39	0.19	5	6	0.40	0.19	59	52	3.41	0.48	6	14	0.88	0.26
14-17 y	10	6	1.31	0.45	1	1	0.12	0.12	0	0	0.00	0.00	34	24	5.00	0.90	8	6	1.24	0.47
18-24 y	28	38	3.62	0.71	4	5	0.52	0.27	5	6	0.58	0.28	25	28	2.69	0.56	6	8	0.72	0.32
Females total	84	85	5.71	0.67	17	18	1.19	0.32	15	18	1.24	0.34	114	112	7.52	0.79	55	55	3.71	0.55
14-17 y	35	23	5.25	0.92	4	2	0.45	0.22	4	3	0.67	0.35	55	32	7.22	1.02	26	18	4.13	0.85
18-24 y	49	62	5.91	0.87	13	16	1.51	0.44	11	15	1.48	0.47	59	80	7.65	1.04	29	37	3.53	0.70
<b>12-Month</b>																				
Total	78	81‡	2.68	0.33	15	17‡	0.55	0.15	15	20	0.61	0.17	88	85‡	2.82	0.34	46	43	1.44	0.23
14-17 y	28	19	2.11	0.42	2	1	0.12	0.09	2	2	0.22	0.12	46	29	3.10	0.48	21	19	2.06	0.44
18-24 y	50	61	2.92	0.43	13	16	0.74	0.22	13	18	0.85	0.24	42	57	2.69	0.45	25	24	1.16	0.28
Males total	18	17	1.15	0.29	3	3	0.17	0.10	3	4	0.19	0.11	21	18	1.23	0.30	9	8	0.55	0.21
14-17 y	5	3	0.56	0.25	1	1	0.12	0.12	0	0	0.00	0.00	12	7	1.57	0.47	5	4	0.81	0.39
18-24 y	13	15	1.41	0.40	2	2	0.20	0.14	3	4	0.28	0.16	9	11	1.08	0.38	4	4	0.44	0.24
Females total	60	64	4.17	0.58	12	14	0.92	0.29	12	16	1.02	0.32	67	67	4.36	0.61	37	35	2.30	0.42
14-17 y	23	17	3.69	0.80	1	1	0.13	0.13	2	2	0.32	0.25	34	21	4.66	0.84	20	15	3.34	0.79
18-24 y	37	47	4.38	0.75	11	13	1.26	0.40	10	14	1.31	0.44	33	45	4.24	0.79	17	20	1.86	0.49

\*EDSP indicates Early Developmental Stages of Psychopathology Study; No., the unweighted number of respondents in the numeration of the prevalence estimates (%<sub>w</sub>), which, in comparison, are based on weighted data; and No.<sub>w</sub>, the weighted number of respondents in the numeration of the prevalence estimates. †AG1 is defined as meeting all agoraphobia criteria, but only 1 of a total of 6 prototypical trigger situations is endorsed. AG2+ cases endorsed ≥ 2 situations. ‡Rounding error due to weighting.

reappraisal studies of respondents in epidemiological surveys classified as having agoraphobia without panic,<sup>9,11,21</sup> which have shown that many such respondents are more accurately classified as having anxiety disorders other than agoraphobia, predominately specific phobia.

The current report presents general population data from an epidemiological survey of adolescents and young adults that provides further information on this issue. Like other epidemiological surveys, a diagnostic interview is used to generate diagnoses. However, in recognition of the complexities in diagnosing panic and agoraphobia, the interview was revised and enlarged to provide a comprehensive assessment of panic and agoraphobia and their temporal relationship.

## RESULTS

### PREVALENCES

Among 14- to 24-year-olds in the population (Table 1), 4.3% fulfilled lifetime criteria for DSM-IV panic attack and approximately one third of the latter fulfilled criteria for DSM-IV panic disorder. Approximately half of those with panic disorder also were classified as having agoraphobia. The prevalence of agoraphobia without a history of panic disorder was considerably higher (7.8%), with the majority (5.5%) falling into the AG1 group. The female-male odds ratio (OR) is significantly greater than 1:1 for panic attacks (2.3; 95% confidence interval [CI],

1.9-3.2), panic disorder (3.1; 95% CI, 2.4-4.7), AG1 (2.3; 95% CI, 1.4-3.6), and AG2+ (4.4; 95% CI, 2.2-7.4).

## SYMPTOM PROFILES

### Panic Symptoms

Among subjects with agoraphobia, 22% of those with AG1 and 34% with AG2+ reported at least 1 spontaneous “fearful spell or attack” “when all of a sudden [they] felt frightened, anxious, or very uneasy”; most of whom (AG1, 16.3%; AG2+, 27.4%) also had 4 or more symptoms during one of these spells, while an additional 5.6% with AG1 and 6.5% with AG2+ had “limited-symptom attacks” (Table 2). All of these respondents failed to meet diagnostic criteria for a full panic disorder because of not reporting either 4 or more symptoms, a “crescendo” of symptom onset, recurrent attacks, concerns about another attack, worry about the implications, or significant behavior change. It is noteworthy that 78% of subjects with panic disorder without agoraphobia described their panic attacks as being predominantly uncued, as compared with 58% of those with panic disorder with agoraphobia and only 27% of those with agoraphobia and a fearful spell. The latter mostly indicated at least 1 situational or predisposed attack. Respondents classified with AG1 and AG2+ with fearful spells or attacks were less likely than those with panic disorder to worry about either additional attacks (OR = 0.4; 95% CI, 0.3-0.6) or the

**Table 2. Weighted Prevalence and SEs of Panic and Agoraphobia Symptoms in Subjects With *DSM-IV* Panic Disorder (PD), 2 Definitions of Agoraphobia (AG), and Subjects Without PD and AG\***

	PD		No PD		Other, No PD/AG	Total
	PD Without AG	PD With AG	AG1	AG2+		
<b>Panic Section</b>						
Fearful spell or attack	100 (...)	100 (...)	22.1 (3.5)	33.9 (6.4)	10.5 (0.7)	13.1 (0.7)
Unexpected and recurrent	100 (...)	100 (...)	10.5 (2.4)	22.7 (5.8)	5.8 (0.5)	7.9 (0.6)
Crescendo (rapid peak)	100 (...)	100 (...)	8.4 (2.4)	16.2 (4.5)	3.4 (0.4)	5.5 (0.5)
Worry about additional attacks	65.4 (10.6)	65.1 (11.3)	2.2 (1.3)	12.9 (4.9)	1.1 (0.2)	2.5 (0.3)
Worry about implications	32.6 (10.7)	67.2 (11.1)	0.9 (0.6)	8.5 (3.2)	1.5 (0.3)	2.4 (0.3)
Significant change/avoidance	52.3 (11.8)	100 (...)	9.2 (0.2)	18.0 (5.5)	3.2 (0.4)	5.1 (0.5)
No. of symptoms among those with fearful spell/attack						
0	... (...)	... (...)	78.2 (3.5)	66.1 (6.4)	89.9 (0.7)	87.3 (0.7)
Limited attack						
1	... (...)	... (...)	1.7 (1.2)	... (...)	0.7 (0.2)	0.7 (0.2)
2	... (...)	... (...)	2.5 (1.2)	1.1 (1.1)	1.0 (0.2)	1.1 (0.2)
3	... (...)	... (...)	1.4 (0.9)	5.4 (3.1)	2.0 (0.3)	2.0 (0.3)
Full attack						
≥4	100 (...)	100 (...)	16.3 (3.1)	27.4 (6.0)	6.4 (5.3)	8.9 (0.6)
Mean (SE) attacks in past month	0.6 (0.3)	1.9 (1.3)	0.5 (0.1)	0.6 (0.2)	0.3 (0.1)	0.5 (0.11)
Mean (SE) attacks per month peak	4.8 (1.1)	13.3 (4.6)	4.5 (1.5)	7.1 (2.2)	3.1 (0.5)	4.5 (0.59)
<i>DSM-IV</i> panic attack	100 (...)	100 (...)	5.5 (2.1)	12.3 (3.7)	2.3 (0.3)	4.3 (0.4)
<i>DSM-IV</i> panic disorder	100 (...)	100 (...)	0 (...)	0 (...)	0 (...)	1.6 (0.3)
<b>Agoraphobia Section</b>						
Mean (SE) No. of agoraphobic situations	Only 1 case in this group	2.5 (0.3)	1.00 (...)	2.7 (0.1)	Only 5 cases endorsed	0.1 (0.11)
To be/leave home alone	endorsed the	80.8 (8.2)	17.9 (3.3)	67.9 (6.3)	at least 1	3.2 (0.4)
Transportation	agoraphobia	62.9 (11.8)	28.7 (4.1)	64.9 (6.3)	agoraphobia	3.6 (0.4)
Crowds/standing in line	stem items	37.9 (11.4)	31.1 (4.1)	56.5 (6.7)	stem item	3.5 (0.4)
Public place/shops		23.5 (9.7)	1.6 (1.1)	33.0 (6.4)		1.0 (0.2)
Travel		42.1 (12.3)	12.7 (2.6)	26.2 (6.1)		1.7 (0.3)
Other (bridge/tunnel)		4.3 (4.2)	7.9 (2.0)	19.1 (5.6)		1.0 (0.2)
Fear of paniclike symptoms		58.6 (11.3)	18.9 (3.4)	23.2 (5.3)		1.9 (0.3)
Mean (SE) No. of anxiety symptoms		6.5 (0.8)	2.5 (0.2)	2.9 (0.3)		0.3 (0.0)
Endurance or companion†		96.1 (3.9)	84.2 (4.6)	84.9 (4.6)		7.4 (0.5)
Avoidance (B criterion)		59.2 (12.1)	39.6 (4.4)	42.7 (6.8)		3.7 (0.4)
Criteria for agoraphobia met, %		100 (...)	100 (...)	100 (...)		8.6 (0.6)

\* See "Subjects and Methods" section for explanation of the terms Ag1 and Ag2+. All data are presented as weighted percentage (SE) unless otherwise indicated. The weighted number of respondents in each cell of the table can be compared by multiplying the base rate by the proportion. For example, the 65.5% of subjects with PD and without AG reporting worrying about additional attacks is equivalent to 15.7 weighted cases.

† *DSM-IV* criteria: endurance with dread or need to be accompanied by a companion.

implications of these attacks (OR = 0.5; 95% CI, 0.3-0.9). They were also less likely to report significant behavior changes because of the spells (OR = 0.3; 95% CI, 0.2-0.7). It is also noteworthy that a substantial number of respondents reported either fearful spells (10.5%), limited-symptom attacks (3.7%), or full-blown panic attacks, but did not meet criteria for either panic disorder or agoraphobia.

### Agoraphobia Symptoms

Only 1 case of panic disorder without agoraphobia and 5 cases from the "neither panic disorder nor agoraphobia" group endorsed any agoraphobia stem question, indicating that subthreshold agoraphobia syndromes are rare (Table 2, bottom section). Respondents classified as having panic disorder with AG1 and AG2+ reported an average of 2.5 and 2.7, respectively, agoraphobia trigger situations. The most frequently mentioned such situations among respondents with AG1 were "unreason-

ably strong fears of crowds and standing in line" (31.1%), whereas about two thirds of the patients with panic disorder with agoraphobia and AG2+ reported "leaving home alone" and "using public transportation." Across groups, almost all endorsed either endurance with dread or requiring a companion when confronting the agoraphobic situations. Significant avoidance was most frequent in panic disorder with agoraphobia (59.2%) and lowest in AG1 (39.6%). Patients with panic disorder with agoraphobia reported significantly more anxiety symptoms when being or thinking about encountering agoraphobic situations (mean, 6.5) than those with AG2+ (mean, 2.9;  $\chi^2$  value, 15.39;  $P = .001$ ) or those with AG1 (mean, 2.5;  $\chi^2$  value, 4.38;  $P = .04$ ).

A key issue in the diagnostic evaluation of *DSM-IV* agoraphobia is whether subjects are afraid of suddenly occurring paniclike experiences when thinking about or being about to enter trigger situations. The M-CIDI evaluated this issue by presenting respondents with a list of paniclike symptoms and cognitions and asking separate



questions about fear of incapacitation, fear of embarrassment, and fear of having no help available. At least 1 such fear was acknowledged by only 18.9% of AG1 cases, 23.2% of AG2+ cases, and 58.6% of patients having panic disorder with agoraphobia. The most frequently endorsed specific concerns across these groups were being afraid of panic attack ( $n = 36$ ), fainting ( $n = 6$ ), dizziness ( $n = 7$ ), suffocation ( $n = 4$ ), losing control ( $n = 4$ ), developing embarrassing symptoms (urination or vomiting;  $n = 3$ ), or heart problems and fear of dying ( $n = 2$ ). Most AG1 (81%) and AG2+ (76%) cases not endorsing any such panic-like internal symptoms and sensations mentioned 1 or more external threat-related cognition such as unreasonably strong fear of being attacked or mugged, getting lost, catastrophic events that might happen (accidents, collapsing of bridges or tunnels, or being trapped in a crowd during a mass event [eg, Oktoberfest]) as the focus of their agoraphobic cognitions.

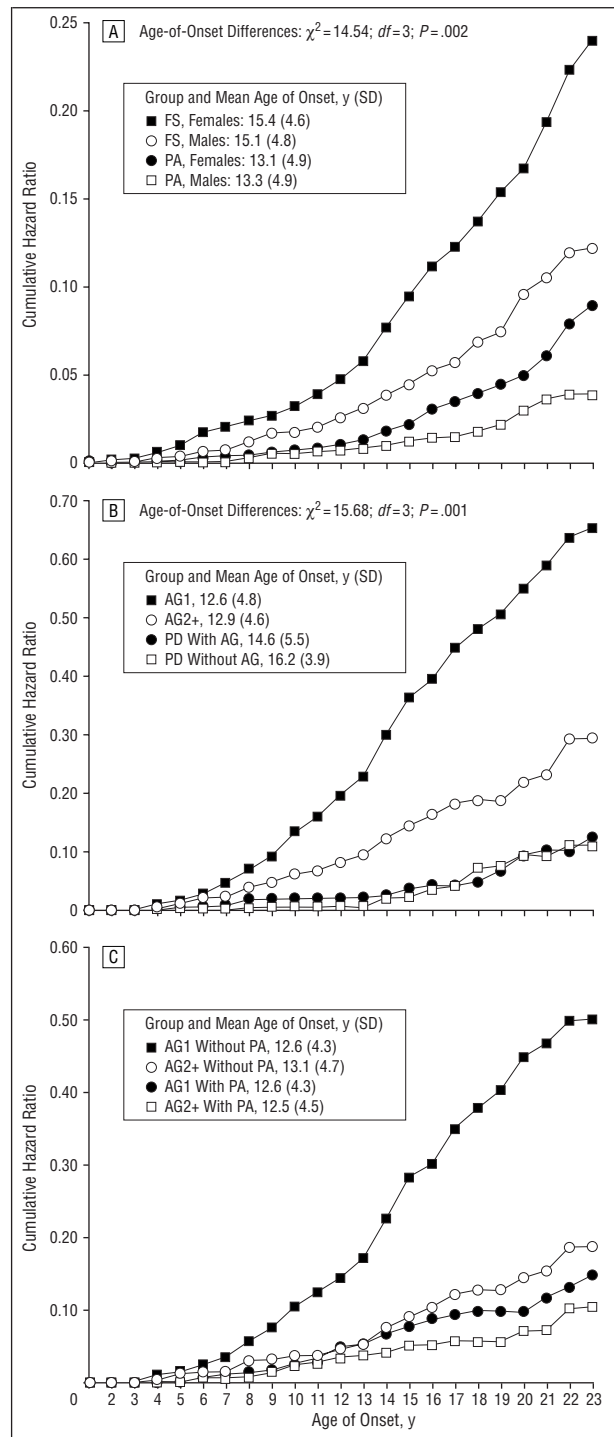
### AGE OF ONSET, COURSE, COMORBIDITY, DISABILITY, AND HELP-SEEKING BEHAVIOR

#### Age-of-Onset Patterns

The cumulative hazard rates for age of first onset in the **Figure** (A) reveal that fearful spells and limited attacks are overall more frequent than full DSM-IV panic attacks and more often begin in childhood ( $P < .001$ ). Full DSM-IV panic attacks are rare before the age of 15 years and show considerable increases in incidence after that age, with some indications for continued increased risk for females but not for males. Part B of the figure demonstrates considerably earlier onsets for agoraphobia (mean age with AG1, 12.6 years; mean age with AG2+, 12.9 years) compared with panic disorder with (mean age, 14.5 years) and without (mean age, 16.2 years;  $P < .001$ ) agoraphobia. The cumulative hazards function for AG1 cases without fearful spells in part C of the figure differs markedly from agoraphobia with fearful spells, with the latter displaying cumulative hazards characteristics similar to panic disorder. It is noteworthy that across the 4 agoraphobia groups almost identical low mean ages of onset were found, ranging from 12.5 to 13.1 years.

#### Course and Clinical Characteristics

Among respondents with agoraphobia, those with paniclike experiences (AG2+/fearful spells) reveal more similarities to panic disorder than those without panic (AG2+), whereas AG1 cases differ significantly in most variables considered (**Table 3**). Compared with panic disorder, AG2+ cases reveal only 2 significant differences: (1) they are more likely to report fearful spells secondary to agoraphobia ( $OR = 6.4$ ); (2) AG2+ cases without fearful spells are less likely to report severe psychosocial impairments. In contrast, the 2 AG1 groups are less likely than the panic disorder group to be currently symptomatic, to report persistence of agoraphobic trigger avoidance, to have comorbid depression, and to be severely disabled; they also are less likely to report repeated inability to work in the past month. Those with agoraphobia are more



Age of onset (cumulative hazards) of: A, fearful spells (FS) and panic attacks (PA); B, panic disorder (PD) with and without agoraphobia (AG) compared with 2 types of agoraphobia (AG1 and AG2+) without PD; and C, AG1 with and without PA compared with AG2+ with and without PA.

likely than those with panic disorder to report an onset of their first fearful spell or attack secondary to their agoraphobia onset ( $OR = 6.4$ ).

#### Help-Seeking Behavior

As shown in the last 2 rows of Table 3, subjects with fearful spells or panic disorder—as compared with those with

**Table 3. Remission, Temporal Relationship, Comorbidity, Impairments, and Help-Seeking Characteristics of AG1 and AG2+ With and Without Full or Limited Panic Attacks or Fearful Spells (FS) Compared With Panic Disorder: Weighted Percentages (%<sub>w</sub>) and Odds Ratios (ORs)\***

Variable	Panic Disorder (n = 49)		AG2+ (n = 70)				AG1 (n = 166)			
			FS (n = 24)		No FS (n = 46)		FS (n = 36)		No FS (n = 130)	
	% <sub>w</sub>	OR (95% CI)†	% <sub>w</sub>	OR (95% CI)	% <sub>w</sub>	OR (95% CI)	% <sub>w</sub>	OR (95% CI)	% <sub>w</sub>	OR (95% CI)
Course										
Currently remitted	25.2	...	38.6	1.9 (0.5-6.6)	37.6	1.8 (0.6-5.1)	46.0	2.5 (0.9-7.3)‡	48.6	2.8 (1.2-6.8)‡
Low persistence of agoraphobia	2.2	...	0.0	...	3.0	1.4 (0.1-23.5)	16.8	9.3 (1.0-80.9)‡	18.0	10.2 (1.3-77.9)‡
Temporality§										
FS prior to agoraphobia	6.1	...	22.5	4.9 (0.8-24.4)	...	...	26.2	5.5 (1.4-21.1)‡	...	...
FS secondary to agoraphobia	7.9	...	35.7	6.4 (1.4-28.8)‡	...	...	35.5	6.4 (1.6-26.2)‡	...	...
FS same year	38.9	...	35.4	0.9 (0.3-2.8)	...	...	32.6	0.8 (0.3-2.2)	...	...
Comorbidity										
Comorbid with depression	52.0	...	52.3	1.0 (0.3-3.1)	33.1	0.5 (0.2-1.2)	23.8	0.3 (0.1-0.8)‡	23.4	0.3 ((0.1-0.7)‡)
Comorbid with phobias	46.9	...	60.9	1.8 (0.6-5.4)	48.6	1.1 (0.4-2.7)	52.8	1.3 (0.5-3.3)	42.4	0.8 (0.4-1.8)
Disability										
Severe psychosocial impairment	64.1	...	62.2	0.9 (0.3-2.8)	15.0	0.1 (0.0-0.3)‡	20.3	0.1 (0.1-0.4)‡	13.1	0.1 (0.0-0.2)‡
≥2 d lost in past month	45.7	...	34.5	0.6 (0.2-2.0)	32.1	0.6 (0.2-1.5)	33.8	0.6 (0.2-1.6)	15.5	0.2 (0.1-0.5)‡
Help-seeking										
Any professional help-seeking	91.5	13.6 (5.4-34.2)¶	94.9	23.5 (5.4-101.6)¶	61.5	2.0 (1.0-4.0)‡	66.6	2.5‡ (1.2-5.1)	56.1	1.6 (1.1-2.4)
Any treatment	50.9	8.8 (4.5-17.3)¶	60.9	13.3 (5.5-31.6)¶	27.0	3.1 (1.5-6.6)‡	13.5	1.3 (0.6-3.1)	7.0	0.6 (0.3-1.4)

\*See "Subjects and Methods" section for explanation of the terms AG1 and AG2+. CI indicates confidence interval. FS is defined as either full or limited DSM-IV panic attack.

†Except for the help-seeking variables, PD was taken as the reference group for OR calculations.

‡P < .05.

§First onset of panic attack or fearful spell compared with first onset of agoraphobic fear or avoidance was reported. Irrespective of the subject's temporality rating, "same year" was coded when the same age was reported.

||Reference group: all subjects with neither agoraphobia nor panic.

¶P < .01.

neither agoraphobia nor paniclike experiences—are much more likely to seek professional help and receive treatment than those not having either panic or agoraphobia. Almost all respondents with panic disorder and AG2+/fearful spells report seeking professional help. Treatment rates among the remaining groups were considerably lower but still significantly elevated, except for the AG1 group.

### CLINICAL REAPPRAISAL

Consistent with the low threshold for evaluating panic that we used, no indications were found for underestimation of panic attacks in the clinical reappraisal of agoraphobia. Furthermore, review of verbatim descriptions of fears in the open-ended questions of AG2+ cases, together with available treatment records, failed to raise any doubts that these were true cases of agoraphobia. The situation was different, though, for the 173 respondents classified with AG1, where the clinical reappraisal unequivocally confirmed agoraphobia in only 13.9% of cases. The vast majority of M-CIDI AG1 cases (**Table 4**) were diagnosed as having specific phobias mostly of the situational type, such as using the subway system at night or crossing certain bridges. Interestingly, many respondents related this fear to a particular bridge that had been temporarily closed for truck traffic during the time of the

study. In some cases situational phobia was confounded with generalized fears about darkness. One culturally bound phobia found among the AG1 cases was triggered by experiences in the Oktoberfest crowd and generalized to other such situations later on. Other less frequent diagnoses were separation anxiety disorder, social phobia, and anxiety due to a general medical condition. The latter diagnosis was assigned (1) to a woman with an exaggerated fear that crowds and walking the dog during pregnancy could lead to dangerous complications and (2) to a subject with exaggerated agoraphobic fears related to a neurologic condition. Only 2 M-CIDI cases of AG1 were classified in the clinical review as normal, non-phobic anxiety.

This low rate of clinical confirmation has a substantial effect on our initial prevalence estimate of agoraphobia. The initial prevalence estimate of 7.8% for agoraphobia drops to 3.5%.

### COMMENT

We investigated the claim that agoraphobia is nosologically strongly related to panic, with primary spontaneous panic attacks or paniclike symptoms underlying the vast majority of cases with agoraphobia. Although previous epidemiological studies have failed to confirm this assumption, recent research suggests that this was be-

**Table 4. Results of the Clinical Reevaluation (Consensus Diagnoses) of 173 AG1 Cases\***

Consensus Diagnosis	Cases With an M-CIDI Diagnosis of AG1			Remarks† (Examples and Type of Information Available)
	With FS	Without FS	Total	
No definite diagnostic consensus	...	4 (3.0)	4 (2.3)	Insufficiently clear symptoms/examples, no further information
No <i>DSM-IV</i> diagnosis	...	2 (1.5)	2 (1.2)	Both rated as definite normal and reasonable anxiety (1 SCID)
Agoraphobia total	21 (51.2)	3 (2.3)	24 (13.9)	All definite and persistent (5 SCID, 11 records)
Without paniclike experiences	11 (26.8)	2 (1.5)	13 (7.5)	
With paniclike experiences	10 (24.4)	1 (0.8)	11 (6.4)	
Specific phobias total	16 (39.1)	110 (83.4)	126 (72.8)	92 Definite, 34 probable (16 SCID, 24 records)
Subtypes				
Environmental	4 (9.8)	9 (6.8)	13 (7.5)	Going out after dark, thunderstorms
Situational	10 (24.4)	85 (64.4)	95 (54.9)	Being attacked in subway, heights
Other	2 (4.9)	16 (12.2)	18 (10.4)	Crowds, mass panic
Separation anxiety disorder	3 (7.3)	2 (1.5)	5 (2.9)	2 Definite, 3 probable (remitted for many years) (2 records)
Social phobia	1 (2.4)	6 (4.5)	7 (4.0)	All definite (2 SCID)
Other <i>DSM-IV</i> diagnosis (no agoraphobia)	...	5 (3.8)	5 (2.9)	3 Definite depression, 2 anxiety due to medical condition (during pregnancy, neurological condition) (2 SCID, 2 records)
<b>Total</b>	<b>41 (100)</b>	<b>132 (100)</b>	<b>173 (100)</b>	

\* See "Subjects and Methods" section for definition of AG1. M-CIDI indicates the Munich (Germany) version of the Composite International Diagnostic Interview; FS, fearful spell; and SCID, Structured Clinical Interview for DSM-IV.

† For 39 of the 173 treatment records of AG1 cases, at least diagnosis or primary reason for visit was available. Twenty-six separate SCID interviews were conducted in cases of doubt.

cause the lay-administered structured diagnostic interviews used in these studies were invalid. We administered a comprehensive series of structured and open-ended questions about agoraphobic symptoms to address this problem. The young age of the sample minimized the possibility of recall bias that has plagued previous studies in this area. However, some important limitations remain. These include the fact that the results cannot be generalized to people older than 24 years, that clinical reappraisal interviewers were administered only to a subset of respondents, and that we were not able to examine patterns in subsamples defined on the basis of potentially important specifying variables such as sex or social class due to lack of statistical power.

Within the context of these limitations, we found, consistent with previous epidemiological studies,<sup>14-19,31</sup> that the lifetime prevalence of M-CIDI/*DSM-IV* agoraphobia without a history of panic disorder (7.8%) is much higher than the prevalence of either panic disorder without agoraphobia (0.8%) or panic disorder with agoraphobia (0.8%). Unlike previous epidemiological studies, we investigated whether these results were due to classification errors. Although this clinical reappraisal found that agoraphobia was overdiagnosed by the M-CIDI, we were unable to document any evidence of panic or paniclike experiences in the vast majority of patients with clinically confirmed agoraphobia. Furthermore, many patients with confirmed agoraphobia with panic reported that their first panic experiences occurred only after the onset of agoraphobia.

Our failure to demonstrate a consistent temporal pattern of primary panic in patients with agoraphobia and paniclike experiences and the lack of any such panic signs in the majority of patients with agoraphobia are both consistent with the findings by Lelliot et al<sup>12</sup> that aversive conditioning of panic is involved in only a minority of people with agoraphobia. These results also raise the question of what those with agoraphobia actually fear.

In contrast to the observations of Goisman et al<sup>9</sup> and Barlow et al<sup>10</sup> in clinical samples, the most frequently mentioned fears in our general population sample were unreasonably strong, threat-related anticipations of being attacked on public transportation, getting lost during travel or in a crowd, or some catastrophic event (such as mass panic). Furthermore, in contrast to clinical observation,<sup>32</sup> psychophysiological symptoms were only rarely mentioned in this age group as the focus of fear, even though the M-CIDI explicitly asked about fears of such "internal" sensations.

The most plausible interpretation of why these results differ from those in clinical studies is that patients who have agoraphobia with panic are considerably more likely than those who have agoraphobia without panic to seek help from mental health professionals, leading to an overrepresentation of the former relative to the latter in clinical samples compared with general population samples. This interpretation is consistent with the strong effect of panic on help-seeking behavior in our own data, with 90% of those with agoraphobia who have at least limited attacks reporting that they contacted a health professional because of their condition, compared with only 7% to 37% of those with agoraphobia and without any paniclike symptoms.

Our findings call for a rethinking of current ideas about the triggering experiences that promote agoraphobia. While panic is clearly important in many cases, it is not the causal trigger for the majority of young persons with agoraphobia. This calls into question the notion that panic and agoraphobia are part of a single disease spectrum, with agoraphobia without panic at the low end and panic disorder with agoraphobia at the other end.<sup>9</sup> Taking into account other findings about the relative unspecificity of *DSM-IV* panic attacks<sup>23</sup> and differential patterns of course in early- and late-onset panic and agoraphobia,<sup>33,34</sup> a seemingly more plausible scenario is that diverse pathogenic pathways exist for both panic and

agoraphobia. It thus remains for future research, necessarily with community samples, to provide information on the prototypic triggering experiences of agoraphobia without panic.

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## REFERENCES

- Klein DF. Delineation of two drug-responsive anxiety syndromes. *Psychopharmacology*. 1964;5:397-408.
- Klein DF. Anxiety reconceptualized. *Compr Psychiatry*. 1980;21:411-437.
- Carr DB, Sheehan DV. Panic anxiety: a new biological model. *J Clin Psychiatry*. 1984;45:323-330.
- Garvey MJ, Tuason VB. The relationship of panic disorder to agoraphobia. *Compr Psychiatry*. 1984;25:529-531.
- Margraf J, Taylor CB, Ehlers A, Roth WT, Agras WS. Panic attacks in the natural environment. *J Nerv Ment Dis*. 1987;175:558-565.
- Clark DM. A cognitive approach to panic. *Behav Res Ther*. 1986;24:461-470.
- Hand I, Wittchen H-U. *Panic and Phobias: Empirical Evidence of Theoretical Models and Long-Term Effects of Behavioral Treatments*. New York, NY: Springer; 1986.
- American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*. Washington, DC: American Psychiatric Association; 1994.
- Goisman RM, Warshaw MG, Steketee GS, Fierman EJ, Rogers MP, Goldenberg I, Weinschenker NJ, Vasile RG, Keller MB. *DSM-IV* and the disappearance of agoraphobia without a history of panic disorder: new data of controversial diagnosis. *Am J Psychiatry*. 1995;152:1438-1443.
- Barlow DH, Brown TA, Craske MG. Definitions of panic attacks and panic disorder in the *DSM-IV*: implications for research. *J Abnorm Psychol*. 1994;103:533-564.
- Goisman RM, Warshaw MG, Peterson LG, Rogers MP, Cuneo P, Hunt MF, Tomlin-Albanese JM, Kazim A, Gollan JK, Epstein-Kaye T, Reich JH, Keller MB. Panic, agoraphobia, and panic disorder with agoraphobia: data from a multicenter anxiety disorders study. *J Nerv Ment Dis*. 1994;182:72-79.
- Lelliott P, Marks I, McNamee G, Tobena A. Onset of panic disorder with agoraphobia: toward an integrated model. *Arch Gen Psychiatry*. 1989;46:1000-1004.
- Faravelli C, Guerrini Degl'Innocenti B, Giardinelli L. Epidemiology of anxiety disorders in Florence. *Acta Psychiatr Scand*. 1989;79:308-312.
- Wittchen H-U, Essau CA. Epidemiology of anxiety disorders. In: Michels R, ed. *Psychiatry*. Philadelphia, Pa: JB Lippincott & Co; 1993:1-25.
- Wittchen H-U, Essau CA. Epidemiology of panic disorder: progress and unresolved issues. *J Psychiatr Res*. 1993;27(suppl 1):47-68.
- Angst J, Dobler-Mikola A. The Zurich study, V: anxiety and phobia in young adults. *Eur Arch Psychiatr Neurol Sci*. 1985;234:408-418.
- Weissman MM, Leaf PJ, Holzer CE, Merikangas KP. Epidemiology of anxiety disorders. *Psychopharm Bull*. 1985;26:543-545.
- Weissman MM, Bland RC, Canino G, Faravelli C, Greenwald S, Hwu H-G, Joyce PR, Karam EG, Lee C-K, Lellouch J, Lepine J-P, Newman SC, Oakley-Browne MA, Rubio-Stipec M, Wells JE, Wickramaratne PJ, Wittchen H-U, Yeh E-K. The cross-national epidemiology of panic disorder. *Arch Gen Psychiatry*. 1997;54:305-309.
- Wittchen H-U. Epidemiology of panic attacks and panic disorders. In: Hand I, Wittchen H-U, eds. *Panic and Phobias: Empirical Evidence of Theoretical Models and Long-Term Effects of Behavioral Treatments*. New York, NY: Springer; 1986:18-28.
- World Health Organization. *International Statistical Classification of Diseases, 10th Revision (ICD-10)*. Geneva, Switzerland: World Health Organization; 1992.
- Horwarth E, Lish JD, Johnson J, Hornig CD, Weissman MM. Agoraphobia without panic: clinical reappraisal of an epidemiologic finding. *Am J Psychiatry*. 1993;150:1496-1501.
- Wittchen H-U, Nelson GB, Lachner G. Prevalence of mental disorders and psychosocial impairments in adolescents and young adults. *Psychol Med*. 1998;28:109-126.
- Wittchen H-U, Perkonig A, Lachner G, Nelson CB. Early developmental stages of psychopathology study (EDSP): objectives and design. *Eur Addict Res*. 1998;4:18-27.
- World Health Organization. *Composite International Diagnostic Interview (CIDI) for the DSM-IV*. Geneva, Switzerland: World Health Organization; 1997.
- Wittchen H-U, Pfister H, eds. *DIA-X-Interviews: Manual für Screening-Verfahren und Interview; Interviewheft Langschnittuntersuchung (DIA-X-Lifetime); Ergänzungsheft (DIA-X-Lifetime); Interviewheft Querschnittuntersuchung (DIA-X-12 Monate); Ergänzungsheft (DIA-X-12 Monate); PC-Programm zur Durchführung des Interviews; Auswertungsprogramm*. Frankfurt, Germany: Swets & Zeitlinger; 1997.
- Lachner G, Wittchen H-U, Perkonig A, Holly A, Schuster P, Wunderlich U, Tirk D, Garczynski E, Pfister H. Structure, content and reliability of the Munich-Composite International Diagnostic Interview (M-CIDI). *Eur Addict Res*. 1998;4:28-41.
- Wittchen H-U. Reliability and validity studies of the WHO Composite International Diagnostic Interview (CIDI): a critical review. *J Psychiatr Res*. 1994;28:57-84.
- Wittchen H-U, Lachner G, Wunderlich U, Pfister H. Test-retest reliability of the computerized Munich-Composite International Diagnostic Interview (M-CIDI). *Soc Psychiatry Psychiatr Epidemiol*. In press.
- Reed V, Gander F, Pfister H, Steiger A, Sonntag H, Trenkwalder C, Hundt W, Wittchen H-U. To what degree does the Composite International Diagnostic Interview (CIDI) correctly identify *DSM-IV* disorders? testing validity issues in a clinical sample. *Int J Meth Psychiatr Res*. 1998;7:142-155.
- First MB, Spitzer RL, Gibbon M, Williams JBW. *Structured Clinical Interview for DSM-IV Axis I Disorders (SCID)*. New York, NY: Biometric Research; 1995 [German version].
- Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eshleman S, Wittchen H-U, Kendler KS. Lifetime and 12-month prevalence of *DSM-III-R* psychiatric disorders in the United States: results from the National Comorbidity Survey. *Arch Gen Psychiatry*. 1994;51:8-19.
- Pollard CA, Tait RC, Meldrum D, Dubinsky IH, Gall JS. Agoraphobia without panic: case illustrations of an overlooked syndrome. *J Nerv Ment Dis*. 1996;184:61-62.
- Reed V, Wittchen H-U. *DSM-IV* panic attacks and panic disorder in a community sample of adolescents and young adults: how specific are panic attacks? *J Psychiatr Res*. In press.
- Wittchen H-U, Perkonig A. Panik Attacken mit frühem und spätem Beginn: unterschiedliche pathogenetische Mechanismen? *Verhaltenstherapie Praxis Forschung Perspektiven*. 1993;3:296-303.