

# Citalopram for Compulsive Shopping Disorder: An Open-Label Study Followed by Double-Blind Discontinuation

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**Background:** Open-label trials suggested that fluvoxamine and citalopram may be effective for compulsive shopping disorder, but 2 double-blind fluvoxamine trials failed to confirm this. To test the hypothesis that citalopram is a safe, effective treatment for this disorder, we conducted a 7-week, open-label trial followed by a 9-week, double-blind, placebo-controlled discontinuation trial.

**Method:** From Jan. 2001 to Jan. 2002, we enrolled adult outpatients meeting diagnostic criteria suggested in a prior study for compulsive shopping disorder and having a score of  $\geq 17$  on the Yale-Brown Obsessive Compulsive Scale-Shopping Version (YBOCS-SV). Open-label citalopram was started at 20 mg/day and increased, absent marked response and limiting side effects, to 60 mg/day. Responders (subjects rated "much improved" or "very much improved" on the Clinical Global Impressions-Improvement scale [CGI-I] and having a  $\geq 50\%$  decrease in YBOCS-SV score) were randomized to double-blind citalopram treatment at the week 7 dose or placebo for 9 weeks.

**Results:** We enrolled 24 subjects (23 women and 1 man). Mean  $\pm$  SD YBOCS-SV scores decreased significantly from  $24.3 \pm 4.6$  at baseline to  $8.2 \pm 8.1$  at week 7 (Wilcoxon signed rank:  $z = 4.20$ ,  $p < .001$ ). Fifteen of 24 subjects (63%) met the responder criteria. Three subjects (13%) discontinued for adverse events (1 each for headache, rash, and insomnia). Of the 15 responders who entered the double-blind treatment phase, 5 of 8 (63%) randomized to placebo relapsed (YBOCS-SV score  $\geq 17$  and "minimally improved" or less on the CGI-I) compared with none of 7 randomized to continue taking citalopram (Fisher exact test  $p = .019$ ).

**Conclusion:** Citalopram appears to be a safe and effective treatment for compulsive shopping disorder. Further trials of citalopram and other selective serotonin reuptake inhibitors are warranted.

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**T**he *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition (DSM-IV), acknowledges the existence of mental disorders it does not describe. Among these is compulsive shopping disorder, which Kraepelin discussed nearly 90 years ago in his classic text of psychopathology.<sup>1</sup> This disorder can be placed within the DSM-IV category of impulse-control disorders not otherwise specified.<sup>2</sup> It is characterized by preoccupation with shopping for unneeded items, inability to resist purchasing such items, and resulting marked distress, social or occupational impairment, and/or financial problems.<sup>3</sup> Depending on the stringency of the criteria applied to survey questionnaire results, compulsive shopping is estimated to affect 2% to 8% of the adult U.S. population, with a female-to-male ratio of 9:1.<sup>4</sup> Comorbid mood and impulse control disorders appear to be common.<sup>5</sup>

A 10-week open-label trial suggested that the selective serotonin reuptake inhibitor (SSRI) fluvoxamine<sup>6</sup> may be an effective treatment. Two double-blind fluvoxamine trials, however, found fluvoxamine no more effective than placebo.<sup>7,8</sup> These investigators hypothesized that requiring subjects to keep a daily shopping log and the detailed review of shopping behaviors at study visits may have been therapeutic elements, raising the response rate in the placebo group and obscuring a drug effect.

Before initiating the current trial, we completed a 12-week, open-label trial of the SSRI citalopram, 20 mg to 60 mg/day, for compulsive shopping disorder.<sup>9</sup> We enrolled 24 subjects (22 women and 2 men) and observed a rapid, marked, sustained improvement as measured both by the Yale-Brown Obsessive Compulsive Scale-Shopping

Version (YBOCS-SV)<sup>10</sup> and the Clinical Global Impressions-Improvement (CGI-I)<sup>11</sup> scale in subjects with and without comorbid conditions. Seventeen subjects (71%) were responders (“much” or “very much improved” on the CGI-I). This study, however, also involved the use of shopping logs reviewed at study visits.

Encouraged by the results of our open-label trial, we designed the current study, coupling an open-label phase to identify responders and a double-blind, placebo-controlled discontinuation phase to distinguish a placebo response in the open-label phase from a true drug effect. We reasoned that a finding in the discontinuation phase of no significant differences in relapse rates between open-label responders randomly assigned to placebo (discontinuation of citalopram) and those randomly assigned to continue citalopram would indicate that the open-label response was probably a placebo response. If, however, the placebo group’s relapse rate in the double-blind phase was significantly greater than that of the citalopram continuation group, this finding would indicate that the open-label response rate contained a true drug effect.

This design carries some danger. If a true drug effect from the open-label phase persists in the placebo group beyond the duration of the double-blind, placebo-controlled phase of the study, one may erroneously conclude that no active drug effect had been present, i.e., that the open-label response was a placebo response. On the other hand, if a placebo effect from the open-label phase persists in both treatment groups throughout the double-blind phase, one will conclude correctly that the open-label response was indeed a placebo response.

We omitted the use of shopping diaries to remove their potential therapeutic effect. We hypothesized that citalopram would be a safe and effective treatment for compulsive shopping disorder.

## METHOD

We utilized advertisements and media coverage to recruit adults aged 18 years and older who met the diagnostic criteria suggested by McElroy and colleagues<sup>3</sup> and who had been suffering from the disorder for at least 1 year. All subjects gave written informed consent to participate after receiving a full explanation of the study protocol, which had been approved by the Stanford University Institutional Review Board. Eligible subjects had to have a score of 17 or greater on the YBOCS-SV, an interviewer-administered scale with a range of 0 to 40.<sup>10</sup> (Minimum required standard YBOCS scores to enter medication trials for obsessive-compulsive disorder are often 16 or 18.) Lifetime comorbid conditions were determined by a structured interview (the Mini-International Neuropsychiatric Interview, version 4.4 [MINI])<sup>12,13</sup> and from the self-report version of the Minnesota Impulse Disorders Interview (MIDI-SR).<sup>14</sup> An investigator re-

viewed the MIDI-SR responses with the subject to increase their accuracy and validity.

Exclusion criteria included comorbid organic or psychotic mental disorders, mental retardation or developmental disabilities, substance abuse or dependence within the past 3 months, factitious disorders, dissociative disorders, obsessive-compulsive disorder, a history of bipolar I or II disorder, personality disorders severe enough to interfere with study participation, and risk of suicide. If a comorbid disorder was present, compulsive shopping had to be the primary disorder, i.e., causing the most distress and dysfunction and providing the primary motivation to seek treatment.

All subjects were started on citalopram treatment at a dose of 20 mg/day and adjusted upward every 2 weeks to 60 mg/day, in the absence of significant response and limiting side effects, for a total open-label treatment period of 7 weeks. Those who could not tolerate 20 mg/day were allowed to adjust downward to 10 mg/day. Responders were defined a priori as those subjects with CGI-I scores of 1 or 2 (“very much” or “much improved”) and a 50% or greater score decrease on the YBOCS-SV compared with baseline. Responders at the end of week 7 were randomized to 9 weeks of double-blind citalopram treatment at the week-7 dose or placebo. No concomitant psychotropic medications or psychotherapy were allowed or provided during the study. Relapse was defined a priori as a YBOCS-SV score of 17 or greater (the minimum study eligibility score) and a CGI-I score of “minimally improved” or less.

The primary outcome measures were the relapse rate in the double-blind portion of the study and the change in YBOCS-SV scores from the randomization baseline (end of week 7) to endpoint. The YBOCS-SV is a clinician-administered scale with item ratings for obsessions and compulsions related to compulsive shopping, i.e., time spent, degree of interference, distress, resistance and success in resisting. In a small validation study, the YBOCS-SV had test-retest and interrater reliability, face and construct validity, and excellent sensitivity to clinical change.<sup>10</sup> No empirically derived cutpoint for defining pathology or “response” has been established. The validation study reported a mean  $\pm$  SD of  $21.1 \pm 2.5$  in compulsive shoppers ( $N = 9$ ) versus  $2.9 \pm 1.8$  in “normal buyers” ( $N = 8$ ).<sup>10</sup>

Secondary outcome measures were the Patient Global Improvement rating (PGI)<sup>15</sup> and, for depressive symptoms, the Montgomery-Asberg Depression Rating Scale (MADRS).<sup>16</sup>

We also conducted exploratory analyses of 2 self-report forms: the Compulsive Buying Scale,<sup>4</sup> designed to measure “compulsive” shopping behavior, and the Impulse Buying Tendency Scale,<sup>17</sup> designed to measure “impulsive” shopping behavior. The Compulsive Buying Scale comprises the 7 items (of 29 tested) that contributed

significantly ( $p < .05$ ) to a logistic regression equation separating self-identified compulsive shoppers from members of the general population. The items are rated on a 5-point Likert scale from “strongly agree” to “strongly disagree.” They include content such as buying things “even though I couldn’t afford them,” feeling “anxious or nervous on days I didn’t go shopping,” and measures of spending behaviors and the perceived reaction of others to one’s buying habits. A weighted scoring equation classifies a respondent as a “compulsive buyer” if the score is  $-1.34$  or less. In a validation study involving 51 self-identified compulsive shoppers and 53 noncompulsive buyers, this scale score had a sensitivity of 92% (false negative rate of 8%) and a specificity of 92% (false positive rate of 8%).<sup>4</sup>

The Impulse Buying Tendency Scale is a 5-item scale, with each item rated on a 7-point Likert scale rating frequency (e.g., of making unintended or unplanned purchases) or degree of agreement (e.g., “It is fun to buy spontaneously.”). The scale is intended to identify impulsive shoppers (those who buy “from a desire to purchase a specific product”) rather than compulsive shoppers (those motivated by the shopping process rather than specific products).<sup>17</sup> The scale was found to be unidimensional and to have internal consistency in both student and nonstudent samples and discriminant and convergent validity in a student sample. Modest predictive validity ( $\beta = .189$ ,  $p = .006$ ) was established in a logistic regression analysis applied to 550 shoppers at a regional shopping mall who did or did not make an impulsive purchase.

Primary, secondary, and exploratory measures were assessed at screening, baseline, and the end of weeks 1, 2, 4, 7, 10, 12, and 16 or upon early termination. Safety and tolerability were assessed at each visit after the baseline visit using spontaneously reported events and rates of termination for adverse events. Data were analyzed with the last observation carried forward (LOCF, intent-to-treat); completer analyses at the end of open-label treatment are also reported where these seemed of interest.

In the open-label phase, we examined baseline-to-endpoint changes in outcome measures for significance with the Wilcoxon signed rank test, 1-tailed. Comparisons of changes between treatment groups in the double-blind phase were examined for significance with 2-sample  $t$  tests assuming unequal variance with  $p \leq .05$ , 1-tailed.

Correlations between baseline YBOCS-SV and MADRS scores and between percent change in these measures were examined with parametric (Pearson) correlation coefficients with a  $p \leq .05$  for significance, and the results were corroborated by calculating nonparametric (Spearman) correlation coefficients utilizing the same  $p$  value. Correlations between the measures of shopping behavior and between these measures and the MADRS were examined with nonparametric (Spearman) correlation coefficients because some data were not normally

**Table 1. Baseline Demographic and Clinical Characteristics of Study Subjects (N = 24)**

Characteristic	Value
Age, mean $\pm$ SD, y	45 $\pm$ 12
Sex, N (%)	
Women	23 (96)
Men	1 (4)
Marital status, N (%)	
Single	6 (25)
Married	12 (50)
Divorced	6 (25)
Occupational status, N (%)	
Employed, full-time	11 (46)
Employed, part-time	3 (13)
Unemployed, not seeking	9 (38)
Unemployed, seeking	1 (4)
Age at onset, mean $\pm$ SD, y	24 $\pm$ 8
Total debt at screening	
Mean $\pm$ SD	\$53,300 $\pm$ \$116,200
Range	\$0–\$501,300
Median	\$12,500
No. with $\geq$ \$20,000 debt	10

distributed. Relapse rates in the double-blind treatment groups were evaluated with Fisher exact test with  $p \leq .05$ , 1-tailed.

## RESULTS

### 7-Week Open-Label Phase

We enrolled 24 subjects (23 women and 1 man). Demographic and baseline clinical characteristics are shown in Table 1. Most subjects (N = 21) had engaged in compulsive shopping for at least a decade; 18 (75%) had begun this behavior at age 25 or earlier. Clothing and accessories were the most commonly purchased items, but gifts, household objects, collectibles, and excessive food were also common purchases. Three (13%) had declared bankruptcy to clear debts, 9 (38%) had taken out loans other than mortgages to meet payments; married subjects usually noted an adverse effect on their marriages, and the financial strain was, for many, considerable. Only 2 subjects had previously been treated for compulsive shopping, both with psychotherapy, which had been ineffective. Active comorbid conditions, present in 9 subjects (38%), were major depression (N = 5), dysthymia (N = 3) (2 subjects had both, with 1 of the 2 also experiencing concurrent social phobia), and 1 case each of social phobia, trichotillomania, kleptomania, and pathological gambling.

At baseline, the YBOCS-SV and MADRS scores were not significantly correlated (Spearman:  $r = .318$ ,  $p = .065$ , 1-tailed). Compulsive Buying Scale scores were significantly correlated with YBOCS-SV scores (Spearman:  $r = -.511$ ,  $p = .006$ , N = 23, 1-tailed) whereas scores on the Impulse Buying Tendency Scale were not (Spearman:  $r = .04$ , NS, N = 23). Taking a YBOCS-SV score of 17 or greater as indicating “illness,” the sensitivity of the Com-

pulsive Buying Scale (in a study group in which all subjects were “ill”) was 87% and the false negative rate 13%.

Mean  $\pm$  SD YBOCS-SV scores decreased significantly from  $24.3 \pm 4.6$  (range, 17–32) at baseline to  $8.2 \pm 8.1$  (range, 0–24) at the end of open-label treatment (week 7) (Wilcoxon signed rank:  $z = 4.20$ ,  $p < .001$ ). The mean  $\pm$  SD percent change was  $66\% \pm 32\%$ , and median percent change, 79.5%. Fifteen (63%) of 24 subjects met our responder criteria, although 18 (75%) had CGI-I scores of “much” or “very much improved” (3 did not meet the YBOCS-SV criterion). Of the 15 responders, 13 rated themselves “very much improved,” and 2, “much improved” on the PGI; of the 5 nonresponders at week 7, 3 rated themselves “much improved” (with YBOCS-SV score decreases of 43%, 38%, and 35%), and 2, “minimally improved.” Five subjects (21%) failed to meet responder criteria, 3 subjects (13%) discontinued the study because of adverse events (1 each for macular rash, exacerbation of migraine headaches, and insomnia), and 1 subject (4%) dropped out. The mean  $\pm$  SD final open-label citalopram dose was  $42.1 \pm 15.3$  mg/day; final open-label dose groups were 20 mg/day or less ( $N = 4$ ), 40 mg/day ( $N = 12$ ), 50 mg/day ( $N = 1$ ), and 60 mg/day ( $N = 7$ ).

Mean scores on the Compulsive Buying Scale ( $N = 23$ ) improved significantly from  $-3.64 \pm 1.69$  at baseline to  $0.12 \pm 2.65$  at week 7 (Wilcoxon signed rank:  $z = 4.00$ ,  $p < .001$ ). Whereas 20 (87%) of the 23 subjects with baseline scores met the criterion for “compulsive shopper” at baseline, only 7 (30%, LOCF) did so at week 7. Only 4 (20%) of the 20 week-7 completers met the criterion. Utilizing a YBOCS-SV score of 17 or greater as indicating “illness,” the Compulsive Buying Scale had a sensitivity of 80% and false negative rate of 20% (in a study group in which only 21% of subjects [5/24] were “ill”). The false positive rate (“well” subjects labeled “ill”) was 16% (3/19).

The subjects’ mean score on the Impulse Buying Tendency Scale ( $N = 23$ ) fell significantly from  $31.1 \pm 4.5$  at baseline to  $18.2 \pm 9.5$  at week 7 (LOCF; Wilcoxon signed rank:  $z = 3.83$ ,  $p = .001$ ). The scores for completers with both baseline and week 7 data ( $N = 19$ ) differed little from those for all subjects:  $31.8 \pm 4.0$  at baseline and  $16.6 \pm 9.4$  at week 7. These scores compare with a mean of  $21.3 \pm 7.0$  (range, 5–35) for 152 adults who returned a mailed questionnaire after being recruited at a shopping mall.<sup>17</sup> The percent change in the Impulse Buying Tendency Scale score was significantly correlated with percent change in YBOCS-SV score (LOCF; Spearman:  $r = .72$ ,  $p < .001$ ,  $N = 23$ , 1-tailed).

Subjects’ mood symptoms also improved. At baseline, MADRS scores suggested mild mood symptoms (score, 9–17)<sup>18</sup> in 11 subjects (46%) and at least moderate mood symptoms (score  $\geq 18$ )<sup>18</sup> in 8 (33%). At week 7 (LOCF,  $N = 23$ ), only 5 subjects (22%) had mild mood symptoms and 2 subjects (9%) had at least moderate mood symp-

toms. Baseline-to-endpoint percent changes in MADRS and YBOCS-SV scores were significantly correlated (Spearman:  $r = 0.57$ ,  $p < .01$ ,  $N = 23$ , 1-tailed). Mood disorders remitted (MADRS score  $\leq 6$ ) in 5 of the 6 subjects affected at baseline (both dysthymia and major depression remitted in the 2 with “double depression”). Only 3 of these 5, however, achieved “responder” status for compulsive shopping; the sixth subject continued to have both major depression and compulsive shopping disorder. Five (56%) of 9 subjects with active comorbid conditions were responders, compared with 10 (67%) of 15 subjects with no active comorbid condition.

As noted, 3 subjects discontinued for adverse events. Additional adverse events of mild to moderate intensity and affecting at least 2 subjects were insomnia (50%); nausea and drowsiness (each 33%); headache, upset stomach, sexual dysfunction, and decreased concentration (each 17%); increased sweating, fatigue, decreased appetite, and dry mouth (each 13%); and diarrhea, jitteriness, and vivid dreaming (each 8%).

### 9-Week Double-Blind Phase

Results of the double-blind study phase suggest a true drug effect. Of the 8 subjects randomized to 9 weeks of double-blind placebo, 5 relapsed (at weeks 1, 3 [ $N = 3$ ], and 5 of double-blind treatment) versus none of the 7 subjects randomized to double-blind citalopram (Fisher exact test,  $p = .019$ ). All who remained responders in either treatment group rated themselves as “very much improved” on the PGI, while those who relapsed rated themselves from “minimally improved” to “minimally worse” compared with the original study baseline. The mean YBOCS-SV score of the placebo group increased substantially from week 7 to endpoint, whereas the score of the citalopram group decreased (Table 2) (2-sample  $t$  test:  $t = -3.73$ ,  $p = .003$ , 1-tailed). Similarly, the mean MADRS score of the placebo group increased from week 7 to endpoint, while that of the citalopram group decreased (Table 2) (2-sample  $t$  test:  $t = -2.45$ ,  $p = .015$ , 1-tailed).

Changes in adverse events after starting double-blind treatment were not remarkably different in the 2 treatment groups, indicating that changes did not compromise the blind. In the citalopram group, 4 subjects reported new adverse events (headache, insomnia, increased sleep, vertigo), 2 reported continuing adverse events, and 1 reported the cessation of an adverse event (drowsiness). In the placebo group, 2 subjects reported new adverse events (headache [ $N = 2$ ], insomnia, muscle aches), 4 reported the continued absence of adverse events, and 2 reported the cessation of adverse events (drowsiness, vivid dreaming). Of the 5 placebo subjects who relapsed, 1 reported the cessation of adverse events present in the open-label phase (drowsiness, vivid dreaming), and 1 reported the onset of new adverse events (headache, insomnia, muscle aches).

Table 2. Changes in Ratings of Compulsive Shopping Behavior and Depression in the Double-Blind Citalopram (N = 7) and Placebo (N = 8) Groups<sup>a</sup>

Rating Scale	Baseline Score		End of Week 7 Score		End of Week 16 Score	
	Citalopram	Placebo	Citalopram	Placebo	Citalopram	Placebo
YBOCS-SV	22.7 ± 5.5	24.3 ± 3.3	3.7 ± 3.4	2.3 ± 3.3	1.6 ± 2.9	18.4 ± 12.4
Compulsive Buying Scale	31.8 <sup>b</sup> ± 3.3	32.6 ± 4.1	11.3 ± 6.2	14.1 ± 9.7	13.1 ± 7.0	27.3 ± 6.7
Impulse Buying Tendency Scale	-3.5 <sup>b</sup> ± 2.4	-3.2 ± 1.3	2.5 ± 1.0	1.6 ± 1.8	2.3 ± 1.0	-0.3 ± 1.8
MADRS	15.0 ± 8.2	15.1 ± 4.8	7.6 ± 9.5	3.7 ± 3.6	5.3 ± 4.7	13.1 ± 7.6

<sup>a</sup>Last observation carried forward (intent-to-treat). All values shown as mean ± SD.

<sup>b</sup>N = 6.

Abbreviations: MADRS = Montgomery-Asberg Depression Rating Scale, YBOCS-SV = Yale-Brown Obsessive Compulsive Scale-Shopping Version.

No differences were discernable at baseline between the citalopram and placebo groups except the presence of comorbid conditions. The citalopram dose at randomization was 40 to 60 mg/day for all subjects except 1 citalopram-group subject receiving 20 mg/day. Two subjects randomized to the placebo group had active mood disorders at study baseline; their mood disorders and compulsive shopping returned in tandem. One subject randomized to the citalopram group had an active mood disorder at baseline; both compulsive shopping and the mood disorder remained in remission. Two additional subjects randomized to the placebo group had active comorbid impulse control disorders at baseline. Kleptomania recurred along with compulsive shopping in 1, and the modest improvement in trichotillomania that the other had experienced with open-label citalopram disappeared as her compulsive shopping relapsed.

Three of the 5 placebo patients who relapsed met compulsive shopping criteria on the Compulsive Buying Scale (sensitivity = 60%, false negative rate = 40%). There were no false positives for this scale in either treatment group. The placebo group's scores on the Impulse Buying Tendency Scale showed a marked increase while the scores of the citalopram group increased only marginally (Table 2) (2-sample t test:  $t = -3.96$ ,  $p < .001$ , 1-tailed).

## DISCUSSION

The majority of our subjects were women, which is consistent with the literature that reports a predominance of women among individuals afflicted with compulsive shopping disorder. All subjects had experienced substantial financial and/or social adverse consequences of the disorder. The results of our study support our hypothesis that citalopram is a safe and effective treatment for compulsive shopping disorder. As in our earlier open-label study of citalopram for compulsive shopping,<sup>9</sup> citalopram was associated with rapid, marked, sustained improvement or remission in most subjects. Although citalopram was generally well tolerated, 3 subjects (13%) discontinued because of adverse events. All subjects treated with double-blind citalopram maintained their responder status. This contrasts with the 63% relapse rate in the pla-

cebo group. Responders reported loss of interest in shopping, easy disposal of catalogues, cessation of browsing for items on the Internet or television shopping channels, and the ability to shop normally without making impulsive purchases. Since subjects did not keep a shopping log, the study results cannot be attributed to this treatment element.

Reduction in shopping obsessions and compulsions was independent of improvement in formally diagnosed comorbid mood disorders but positively correlated with improvement in depressive symptoms in both the open-label and double-blind study phases. Nineteen subjects (79%) had baseline MADRS scores of 9 or higher, suggesting that they had at least mild mood symptoms. This observation, coupled with the significant correlation between the percent changes in YBOCS-SV and MADRS scores from baseline to the end of open-label treatment, suggests that improvement in mood symptoms and compulsive shopping are interrelated in some individuals. Moreover, comorbid mood disorders relapsed in tandem with compulsive shopping in the 2 placebo group subjects with mood disorders at study baseline.

The presence of an active comorbid condition may signal cases of compulsive shopping disorder that require longer or more complex treatment. Four of the 5 placebo group subjects who relapsed had comorbid conditions at study baseline (2 had a mood disorder; 2 had an impulse control disorder), whereas the 3 placebo group subjects who remained well for the 9 weeks of this treatment phase did not. On the other hand, comorbid conditions may not signal a poor prognosis. Both double-blind trials of fluvoxamine for compulsive shopping disorder involved high placebo response rates in subjects who had high lifetime comorbidity rates.<sup>7,8</sup> Thus, the meaning and importance of comorbid conditions in individuals with compulsive shopping disorder clearly require more study.

The self-report Compulsive Buying Scale had high sensitivity in this study group at baseline, when all were "ill," and at the end of open-label treatment, when only 20% met a YBOCS-SV criterion for illness. The false positive rate at the latter timepoint and the 8% false positive rate observed in the validation study<sup>4</sup> suggest that the

scale may overestimate the prevalence rate in a population with a low true prevalence. In view of the small sample size in our study, however, the scale deserves further study.

The Impulse Buying Tendency Scale was not correlated with the YBOCS-SV at baseline, suggesting that it distinguishes impulsive from compulsive buying behavior. Nonetheless, our subjects' mean baseline score was about 1.5 standard deviations higher than that of the mall shoppers on whom the scale was originally tested and fell below that mean after treatment with citalopram. These observations suggest that individuals with compulsive shopping disorder also exhibit more impulsive buying behavior than do members of the general population. Testing this possibility, however, will require simultaneously gathered data, not comparison with historical controls.

### CONCLUSION

Our double-blind study results suggest that citalopram is an effective and well-tolerated treatment for compulsive shopping disorder. Additional, larger-scale research is needed to confirm the effectiveness of citalopram, examine the outcome of longer-term treatment, and determine the point at which citalopram treatment can be safely discontinued. The effect of choosing different criteria to identify "illness" and "responder" status and the utility of the self-report Compulsive Buying Scale should be explored in larger-scale studies. Further research could usefully explore the effectiveness of other SSRIs, either alone or in combination with specific psychotherapies. The role of mood symptoms in the initiation, continuance, and relief of this disorder also warrants further investigation.

*Drug names:* citalopram (Celexa), fluvoxamine (Luvox and others).

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