Published in final edited form as:
J Affect Disord. 2009 January ; 112(1-3): 250–255. doi:10.1016/j.jad.2008.04.008.

Does major depressive disorder with somatic delusions constitute a distinct subtype of major depressive disorder with psychotic features?

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Abstract

Background—Among patients with major depression with psychotic features, little is known about the extent to which those with and without somatic delusions differ.

Methods—The first 183 participants in the STOP-PD study were divided into two groups based on the presence or absence of somatic delusions and were compared on multiple demographic and clinical characteristics.

Results—In the multivariate analysis, those with somatic delusions reported more somatic symptoms, rated their health as worse, and were less likely to have persecutory delusions.

Conclusions—Based on the methods we used, we could not detect meaningful differences between subjects with and without somatic delusions. This suggests that the presence of irrational somatic ideation does not define a distinct clinical subgroup among patients with psychotic depression. This finding needs to be replicated.

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INTRODUCTION

Major depressive disorder with psychotic features (MD-Psy) constitutes a significant health problem. Also called delusional depression, MD-Psy is present in up to 25% of younger patients and 45% of older patients in psychiatric hospitals for the treatment of major depression (Coryell, 1984; Meyers, 1986).

Clinical and biological evidence suggests that MD-Psy with somatic delusions may represent a specific subtype of MD-Psy. Specifically, patients with MD-Psy with somatic delusions are more likely to be women (Rockwell, 1992) and older (Meyers, 1992) than those with other delusions. They may also have a higher rate of suicide (Schneider, 2001) and greater REM activity during sleep (Kupfer, 1976). The presence of somatic delusions may also influence health care seeking behaviors and quality of life. Depressed patients with somatic preoccupations use more medical services than depressed patients without these preoccupations (Barsky, 2005) and the presence of somatization predicts poor health-related quality of life among older primary care patients (Sheehan, 2005).

Thus, we conducted an analysis to determine whether MD-Psy patients with and without somatic delusions present with differing clinical features. We compared baseline demographic and clinical characteristics of participants with and without somatic delusions among the first 183 participants in STOP-PD (Study of Pharmacotherapy of Psychotic Depression), a randomized controlled trial. We hypothesized that participants with somatic delusions would differ from those without somatic delusions: they would be older, more likely to be female, have a higher objective burden of physical illness, lower self-rated health, poorer health-related quality of life, a higher degree of non-delusional somatic complaints, and higher utilization of health care services.

METHODS

STOP-PD is an NIMH-sponsored trial conducted at Cornell University, the University of Massachusetts, the University of Pittsburgh, and the University of Toronto. Participants were enrolled based on systematic screening of inpatients and on solicitation of outpatient referrals in these academic centers. Inclusion criteria included: age 18 and older, ability to speak English fluently, a Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV; APA, 1994) diagnosis of MD-Psy based on the Structured Clinical Interview for DSM-IV (SCID-patient version; Spitzer, 1995), a score of 21 or higher on the 17-item version of the Hamilton Depression Rating Scale (HDRS-17; Hamilton, 1960), the presence of one or more delusions as indicated by a score of 3 or greater (delusion definitely present) on the delusion item of the Schedule for Affective Disorders and Schizophrenia (SADS; Spitzer, 1979). We also required a score of 2 or higher on one or more of the two conviction items that assess the extent to which reality testing about a possible delusional idea is lost (i.e., subjective feeling of certainty; failure of accommodation to confrontation with evidence contradicting the belief) of the Delusional Assessment Scale (DAS; Meyers 2006). This criterion assures that potentially irrational ideas were held persistently. We excluded patients with current or past DSM-IV diagnosis of bipolar disorder or schizophrenia; current body dysmorphic disorder, obsessive compulsive disorder, or brief psychotic disorder; substance abuse or dependence, including alcohol, within the last three months; Alzheimer dementia, vascular dementia or history of ongoing significant cognitive impairment (from informant report) prior to the index episode; unstable medical illness; medical conditions (such as hypothyroidism), metabolic abnormalities (such as folate or B12 deficiency), or medication (such as carbidopa) that might contribute to psychopathology, confound response to pharmacotherapy, or render patients unable to tolerate or complete the study; inability to tolerate the study medications (sertraline or olanzapine) or having failed to respond to olanzapine 15 mg/day or greater for at least 4 weeks during the

index episode; being pregnant or planning to become pregnant; or being sufficiently ill to require immediate open pharmacotherapy or ECT (e.g., due to imminent risk or suicide or refusal to eat). Recruitment was stratified by age on a 1:1 basis to allow for comparisons between younger (<60 years) and older adults. Written informed consent was obtained from all participants (or substitute decision makers, when applicable) using procedures approved by local Institutional Review Boards prior to the initiation of any research assessments.

Upon enrollment, in addition to the SCID, HDRS-17, SADS, and DAS, each participant was administered a battery of clinical instruments at baseline, including the 18-item Brief Psychiatric Rating Scale (BPRS; Overall, 1962), Scale for Assessment for Positive Symptoms (hallucinations and delusion items only; SAPS; Andreasen, 1984), Mini-Mental State Examination (MMSE; Folstein, 1975), Cumulative Illness Rating Scale for Geriatrics (modified to exclude the psychiatric subscale; CIRS-G; Miller, 1991), 36-item short form of the Medical Outcome Study (SF-36; Stewart, 1988) with the Self-Rated Health (SRH) item, physical component scale (PCS) and mental component scale (MCS), Utvalg for Klinisky Undersogelser (UKU; Lingjaerde, 1987) which assesses somatic complaints, and Cornell Health Services Index (CSI; Sirey, 2005) which assesses use of heath services over the past 3 months. Inter-rater reliability was established for the HDRS-17, BPRS and DAS and was good to excellent for these scales. In particular, the intra-class correlation coefficients for the DAS conviction items was 0.77 (Meyers, 2006).

Based on a published factor analysis, we divided the 17 items of the HDRS-17 into two subscales: physical and psychological (Drayer, 2005). The psychological subscale includes the items of depressed mood, guilt, suicide, work/interests, retardation, anxiety/psychic, and insight, whereas the remaining items were included in the physical subscale. Because the HRSD hypochondriacal item is rated 4 when somatic delusions are present, we calculated the HDRS physical subscale score while omitting this item. We also assessed the severity of anxiety symptoms with a subscale consisting of the two HDRS-17 anxiety items (anxiety-psychic and anxiety-somatic). We assessed the presence or absence of first-rank Schneiderian symptoms as reflected in the SAPS items assessing voices commenting, voices conversing, thought broadcasting, thought insertion, and thought withdrawal.

Participants were divided into two groups based on the presence or absence of somatic delusion on the SAPS. A somatic delusion was defined as any delusion referring to the body or health. A delusion was rated as primary if the subject was more concerned about this belief than with other endorsed false beliefs. The classification of delusions was made by trained raters, systematically reviewed by one of the study psychiatrists (AJF, AJR, BHM, BSM, EMW), and recorded on the SAPS. The SAPS was used to categorize whether specific delusions were present or absent but not to indicate the severity of these delusions. The demographic and clinical characteristics of these two groups were first compared with univariate analyses using X^2 and t-tests as applicable, and then a multiple logistic regression was conducted to isolate the independent predictors of somatic delusions. All the variables with univariate p-values < 0.15 were entered in a logistic regression model using backward elimination with the presence or absence of somatic delusion as the dependent variable.

We conducted a secondary analysis using the analytical approach described above, comparing participants with somatic delusions only and those without somatic delusions (i.e., the participants with both somatic and other delusions were excluded).

RESULTS

Participants reported a median [range] of 3 [1–13] delusional themes and hallucinations on the SAPS. Fifty-two participants (28%) presented with somatic delusions and 131 (72%) without

somatic delusions. Of the 52 participants with somatic delusions, 15 had only somatic delusions, whereas 37 presented with one or more non-somatic delusions (21 had paranoid delusions, 18 had delusions of guilt or sins, and 31 had other delusions). Table 1 presents the characteristics of the participants with and without somatic delusions.

Participants with somatic delusions were more likely to be aged 60 or older (73% vs. 44%; X^2=13.03, df=1, p=0.0003), to have had a later age of onset of their first depressive episode (mean age (SD): 48.1 (21.5, n=46) vs. 39.3 (21.5, n=117), t=−3.19; df=177; p= 0.002), and were less likely to have a lifetime diagnosis of an anxiety disorder (30% vs. 49%; X^2=5.111, df=1, p=0.02). There were no differences in sex, race, duration of index episode, percent with previous depressive episodes, or other current or past psychiatric co-morbidity between the groups (data not shown).

Participants with somatic delusions had higher total scores on the HDRS-17 due to higher scores on the hypochondrias item (Mean (SD): 3.53 (0.96) vs. 0.99 (1.01); t=−15.17, df=181, p=<0.0001). They also had higher scores on the HDRS-17 physical subscale, which persisted after omitting the hypochondriasis item. No difference was seen on the HDRS-17 psychological subscale. On the BPRS, participants with somatic delusions had higher scores on the somatic concern item and lower scores on the suspiciousness and guilt items. Participants with somatic delusions were less likely to present with first rank Schneiderian symptoms.

Participants with somatic delusions rated their overall physical health more poorly than those without somatic delusions on the MOS SF-36. Participants with somatic delusions saw a greater number of (non-mental) health professionals and had a greater frequency of contacts during the 3 months prior to study evaluation even though both participant groups had an equivalent objective burden of physical illness as measured by the CIRS-G. The presence of somatic delusions was not associated with differences on other subscales of the CSI involving ancillary medical support services (e.g., physical therapy), ambulatory mental health services, or intensive medical and mental health services (e.g., inpatient treatment) (data not shown).

The final multivariate model (n=158) included only the HDRS physical subscale (OR: 1.18, 95% CI: 1.04–1.34), the self-rated health item on the SF-36 (OR: 1.58, 95% CI: 1.05–2.37), and the presence of a persecutory delusional theme (SAPS item 7; OR: 0.15, 95% CI: 0.07–0.34). In the secondary analysis comparing the 15 participants with somatic delusions only with the 131 without somatic delusions and using the same univariate and multivariate approach described above, the multivariate model (n=130) included only the HDRS physical subscale (OR: 1.52, 95% CI: 1.22–1.90) and the total number of delusional themes and hallucinations reported on the SAPS (OR: 0.27, 95% CI: 0.10–0.70).

DISCUSSION

Among 183 participants presenting with major depressive disorder with MD-Psy, only three variables --HDRS physical subscale, the self-rated health item on the SF-36, and the presence of persecutory delusions-- differentiated participants with or without somatic delusions. This small number of differences is remarkable given the large number of variables examined. Similarly, only two variables-- HDRS physical subscale and the SAPS delusion and hallucination score-- differed when comparing participants without any somatic delusions and those with ‘pure’ somatic delusions.

Our findings do not support our a-priori hypotheses. They suggest that, as a group, the presence of somatic delusions does not differentiate a clinically distinct subgroup of patients with MD-Psy. Both in our primary and secondary analyses, the few variables differentiating participants with and without somatic delusions essentially mirror the classification of participants into these two groups. Namely, participants with somatic delusions report more physical symptoms

and worse physical health. The associations with increased age, later age of onset and increased use of medical services apparent in the univariate analyses were not significant after controlling for other factors. It may be that poor self-rated health, which was significant in the multivariate analysis, incorporates these other features of somatic preoccupations among MD-Psy patients with somatic delusions. Participants with 'pure' somatic delusion, by definition, did not endorse other delusional themes and hence they have a low SAPS scores.

Somatic preoccupations frequently occur in depressed patients, and the line between delusions and non-delusional somatic worries is not easy to distinguish. With somatic delusions, the patient retains conviction that a somatic preoccupation is realistic, even when faced with conflicting evidence, while a non-delusional patient is able to admit that the concern may be due to a fearful preoccupation rather than resulting from a real physical illness. The thorough and systematic assessment of delusional content applied in this study was used to distinguish anxious ruminations from fixed beliefs. This rigorous assessment is a strength of this study. An additional strength of our study is the inclusion of participants with a wide range of physical illness burden. Limitations of the study include the relatively small number of participants from racial and ethnic minorities, which limits our ability to generalize these findings. Also, while we failed to identify clinical variables distinguishing patients with and without somatic delusions, we did not examine biological data that may distinguish MD-Psy subtypes.

In summary, based on the methods we used, we could not detect meaningful differences between subjects with and without somatic delusions. This suggests that the presence of irrational somatic ideation does not define a distinct clinical subgroup among patients with psychotic depression. Additional studies are needed to replicate this finding and to clarify the dimensions of MD-Psy and its phenomenology.

Acknowledgements

This research was supported in part by USPHS grants MH30915, MH48512, MH62446, MH62518, MH62565, MH62624, MH069430, MH067710, and M01RR0056 from the National Institute of Health. Eli Lilly and Co. and Pfizer Inc. provided medications for this study.

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TABLE 1

Clinical Characteristics of Patients with Psychotic Major Depression

	With somatic delusions (N = 52)		Without somatic delusions (N = 131)		Test statistics; df; p-value
	Mean (SD)	Median [Range]	Mean (SD)	Median [Range]	
MMSE	26.7 (3.5) N=49	27.5 [13 – 30]	27 (2.8) N=125	28 [17 – 30]	t=0.58; df=172; p=0.56
HDRS-17: Total	32.9 (5.1) N=51	32 [22 – 44]	29.2 (5.2)	29 [20 – 45]	t=−4.39; df=180; p=<0.0001
Physical Subscale	16.2 (4.1) N=51	17 [4 – 22]	12.2 (3.7)	12 [4 – 22]	t=−6.34; df=180; p=<0.0001
Modified Physical Subscale	12.7 (3.5)	13 [3 – 18]	11.2 (3.2)	11 [4 – 20]	t=−2.71; df=181; p= 0.007
Psychological Subscale	16.7 (2.9)	17 [11 – 23]	17 (2.8)	17 [10 – 23]	t=0.76; df=181; p=0.45
Anxiety Subscale	5.4 (1.4)	6 [2 – 8]	5.2 (1.4)	5 [1 – 8]	t=−1.09; df=181; p=0.28
SAPS (delusions & hallucinations)	3.6 (2.6)	3 [1 – 13]	3.7 (2.5)	3 [1 – 12]	t=0.31; df=181; p=0.76
1st Rank Schneiderian Symptoms (N, %)	7	14%	37	28%	X^2=4.45 df=1, p=0.03
BPRS Total	56.8 (10.5) N=51	55 [38 – 81]	55.2 (10.2) N=130	53.5 [38 – 89]	t=−0.93; df=179; p=0.35
Somatic Concern	6.2 (1.6)	7 [1 – 7]	2.9 (1.9)	3 [1 – 6]	t=−10.73; df=181; p=< 0.0001
Suspiciousness	3.6 (2.5)	3 [1 – 7]	5.3 (2.2)	7 [1 – 7]	t=4.5; df=181; p=< 0.0001
Guilt	4.3 (2.2)	4 [1 – 7]	5 (2.1)	5 [1 – 7]	t=2.29; df=181; p=0.02
Anxiety	5.4 (1.7)	5.5 [1 – 7]	5.7 (1.5)	6 [1 – 7]	t=1.11; df=181; p=0.27
UKU	14.3 (7.6)	13 [0 – 35]	12 (7.2)	11 [0 – 33]	t=−1.95; df=181; p=0.06
SF-36 MCS	22.2 (8.6) N=45	21.8 [2.9–48.8]	22.5 (9.2) N=117	22.4 [3 – 52.5]	t=0.21; df=160; p=0.84
PCS	42.3 (11.8) N=45	41.2 [18.7–67]	47.9 (12) N=117	50 [22.1 – 71.3]	t=2.7; df=160; p=0.008
Self-Rated Health	3.8 (1.1) N=47	4 [1 – 5]	3.2 (1.0) N=123	3 [1 – 5]	t=−3.31; df=168; p=0.001
CIRS-G (modified to exclude psychiatric subscale) Total	5.4 (3.7) N=51	5 [0 – 14]	4.6 (4.3)	4 [0 – 21]	t=−1.1; df=180; p=0.27
Count	3.4 (2.1)	3 [0 – 10]	2.8 (2.4)	3 [0 – 11]	t=−1.46; df=181; p=0.15
CSI Medical Services Count	1.8 (1.6) N=51	1 [0 – 7]	1.2 (1.1) N=130	1 [0 – 6]	t=−2.26; df=71.7; p=0.03
Medical Visits Frequency	4.2 (4.5) N=51	2 [0 – 16]	2.6 (3.2) N=130	2 [0 – 17]	t=−2.21; df=71.8; p=0.03

BPRS: Brief Psychiatric Rating Scale; CIRS-G: Cumulative Illness Rating Scale-Geriatric; CSI: Cornell Services Index; HDRS: Hamilton Depression Rating Scale; MMSE: Mini-Mental State Examination; SAPS: Scale for Assessment of Positive Symptoms; SF-36 MCS: Short-form 36-Medical Outcomes Study-Mental Component Summary; SF-36 PCS: Short-form 36-Medical Outcomes Study-Physical Component Summary; UKU: Utvalg for Klinisky Undersogelser (score reported equals total score less psychiatric symptoms).