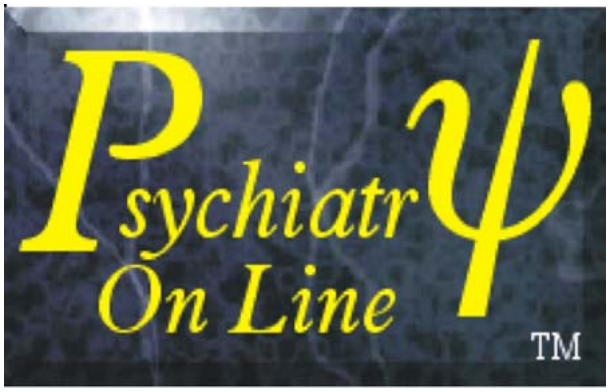


# An instrument to guide symptom-specific treatment of residual depression symptoms

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Abstract

*Background:* Most patients with depression continue to experience at least some residual symptoms following treatment. Preliminary evidence suggests symptom-specific treatments of residual symptoms can improve depression outcomes, and this possibility should be further explored. However, a possible barrier to implementing such treatments is the apparent lack of an instrument that easily allows for the discovery, quantification, and tracking of residual symptoms and related variables over time.

*Method:* We review evidence suggesting symptom-specific treatments of residual depressive symptoms are possible, then present an instrument (Sparhawk Depression Flowsheet,[1] or SDFS) that can be used to guide such treatments. Three pilot studies were conducted: 1) The SDFS and Beck Depression Inventory (BDI) were completed by 82 outpatients in a community mental health setting (CMHC). 2) After training and regular use, nine clinicians were surveyed as to the SDFS's utility. 3) Patient satisfaction ratings were gathered from 41 CMHC outpatients regularly exposed to the SDFS.

*Results:* 1) The correlation of the SDFS and BDI was positive and significant ($r = .784$, $p < .001$). 2) Clinician responses on all survey items differed significantly from neutral in a positive direction (p-values = <.001 to .017), as did 3) patient survey responses (p-values of <.001).

*Conclusion:* The SDFS exhibits preliminary evidence of validity, and both patients and clinicians rated it as useful, accurate, time efficient, and helpful in identifying and tracking symptom levels and guiding treatment decisions. The instrument may be of value to clinicians and researchers interested in symptom-specific treatments of residual depression symptoms.

An Instrument to Guide Symptom-Specific Treatment of Residual Depression Symptoms

The majority of patients treated for depression continue to experience at least some remaining depressive symptoms following treatment.[2-5] Such "residual" symptoms can consist of subsyndromal depressive symptoms at or following remission[6,7] or syndrome-level symptoms that remain after partial response to treatment.[8] Residual symptoms are of import because of their association with poor outcomes in the treatment of depression. Residual symptoms are associated with failure to achieve remission; longer time to remission;[5] higher relapse and recurrence rates;[2,3,9-11] more rapid relapse and recurrence; and other poor outcomes such as reduced vocational, social, and cognitive functioning.[12,13] The risk of poor outcomes seems to increase in a generally linear manner as residual symptoms increase, but even mild residual symptomatology is associated with increased risk for poor outcomes.[4,14]

Despite such associations and widespread acceptance of the importance of eliminating residual symptoms,[24-26] studies on the treatment of residual symptoms have been relatively scarce.[4,15] There is relevant literature addressing partial response to depression treatment,[15] and the literature on "difficult-to-treat"[17-19] and "treatment-resistant" depression[20-23] is also relevant (albeit to a lesser degree). However, most depression research remains focused at the syndrome level,[27-29] and only a small body of literature directly addresses subsyndromal residual symptoms. Further, there is almost no literature that addresses the advisability of quantifying and treating individual residual symptoms of depression, regardless of depression level and context. Many questions such as these remain unanswered: What percentage of depression patients can reach a completely symptom-free state? Is it possible to develop efficacious algorithms for treating residual depressive symptoms, and should these algorithms be based in pharmacology, psychotherapy, or a combination of the two? Should residual symptoms be addressed at an aggregate level, or should the individual residual symptoms themselves be identified, quantified, and directly treated? If so, how do we best quantify such symptoms and track responses to treatment?

Menza and colleagues[4] have raised the question of whether residual symptoms of depression can be treated in a symptom-specific manner. Syndrome-level treatments utilizing current and evolving treatment algorithms and guidelines[21,30-32] reduce depression symptoms for a sizable proportion of patients, and we are not suggesting that symptom-specific treatment of depression at the syndrome level is justified at present, especially for patients with first-episode depression. However, it is possible that identifying and treating individual residual symptoms in the context of remission (i.e., where subsyndromal symptoms are present) or partial response may improve long-term outcomes by assisting more patients to achieve a fully asymptomatic state or experience reduced numbers/levels of symptoms.[4]

Support for the above assertion is seen in empirical studies of symptom-specific psychotherapy, expert guidelines and opinions, and daily psychiatric practice. For example, Fava et al.[6] found, in a sample of patients who had successfully attained remission via use of pharmacological agents, that symptom-specific cognitive behavioral treatment was more effective in reducing residual symptoms than clinical management and led to a lower relapse rate at four-year follow-up.[48] Paykel et al.[49] provide further support for such a treatment strategy, finding that symptom-specific

cognitive therapy for residual symptoms (in the context of partial response and continuing antidepressant treatment) led to higher full remission rates at 20 weeks and reduced relapse rates at 68 weeks vs. clinical management alone.

Research is more equivocal[45] at present as to whether symptom-specific pharmacological strategies improve outcomes in the treatment of residual depressive symptoms. However, many physicians routinely choose pharmacological agents in light of symptom profiles[28;] e.g., using "activating" or "sedating" antidepressants based on whether the patient reports depression with "draggy" features v. depression with "nervous" symptoms.[33-35] As well, specific antidepressants are also chosen to avoid specific side effects such as weight gain,[36] to assist with secondary goals such as smoking cessation,[28] and to avoid or manage treatment-emergent side effects such as sexual dysfunction.[37,38] Some of the symptom-specific selection strategies described above have been recommended by expert panels,[30,31] and authors such as Stahl[35,39,40] have written extensively on antidepressant mechanisms of action and strategies for applying such knowledge in a symptom-specific manner to treat depression. In light of the above, it seems clear that the idea of symptom-specific treatment of residual symptoms via pharmacotherapy deserves further research attention. Readers are also directed to Fava et al.[48] for a discussion of a sequential strategy (involving both pharmacology and cognitive behavioral therapy) to treat residual symptoms of depression.

In order to engage in symptom-specific treatments and research, however, one has to choose a manner in which to elicit, quantify, and track the residual symptoms and related treatments. Below we present an instrument that can assist clinicians and researchers interested in symptom-specific treatments for residual depressive symptoms. The Sparhawk Depression Flowsheet (SDFS) provides a means to quickly quantify individual residual symptoms of depression (regardless of whether such symptoms occur in the context or remission or partial response); record treatment(s) strategies, responses, and side effects; and to easily compare changes in symptoms, treatments, side effects, and outcomes as they occur over time. We provide a brief description of how the SDFS is administered and scored below, and we also present results of three pilot studies used to develop preliminary evidence regarding the instrument's validity and perceived utility (from the view of both clinicians and patients).

Note that we are unaware of any instruments designed specifically to quantify residual symptoms of depression. We do recognize the well-established properties of rating scales such as the Hamilton Depression Rating Scale[5,7] and other observer- and self-rating scales,[49] many of which that have been used in the study of residual symptoms. However, we also submit that such instruments may not be ideally suited for guiding treatments of individual residual symptoms of depression, especially in clinical settings. A barrier to implementing symptom-specific treatments in clinical settings is the apparent lack of an instrument that allows practitioners to easily identify and quantify individual residual symptom levels, to note different treatments utilized, and to easily track responses and side effects to such treatments over time. Typically, treatment records in narrative form (i.e., chart notes) must be considered in combination with prescription records and (when used) depression rating scales to obtain a full understanding of the patient's symptoms, treatment and progress. Such a labor-intensive task is not easily accomplished in a busy outpatient setting.

The above difficulties may be less vexing in the research setting, which tend to be based on homogeneous groups, one or a very few clearly defined active treatments, and regular depression measures.

The Sparhawk Depression Flowsheet (SDFS)

The SDFS is a "new" depression rating scale (though one that has been used for a number of years by the primary authors and various colleagues) that can be used in the clinical and/or research setting. Why would one use the SDFS as a guide to treating residual symptoms of depression, or in research, given the reliable and validated depression rating scales already available? The answer, in our opinion, is that the SDFS exhibits certain advantages over current instruments that may make it particularly well-suited for guiding the treatment of, and perhaps research into, residual symptoms of depression.

Description of the SDFS.

The one-page SDFS is administered in-session or in a research interview using standardized instructions (copies of which are available from the author) and generally takes 5-7 minutes to complete. Patients provide ratings, using a 0 to 10 severity scale, for all primary DSM-IV[66] criteria for a major depressive episode except that of psychomotor agitation/lethargy (an observed rating can be added by the clinician if s/he wishes). Certain criteria are explored in further detail; e.g., patients provide a general rating of sleep disturbance as well as reporting number of days in the past week in which insomnia, early morning awakenings, and so forth were present. Patients are also asked about suicidal/homicidal plan or intent, provide a rating of anxiety and libido disturbance, and describe whether anxiety or fatigue ("Nervous v. Tired" category) is more prominent. Further, patients are also asked to provide information concerning current treatment (e.g., medications and/or psychotherapy modality), ratings of any side effects of pharmacological treatment, and contextual information (e.g., life concerns that may be impacting mood). A Global Assessment of Functioning[66] score may be recorded. Finally, clinicians are able to add, in blank spaces on the instrument, other patient-reported symptoms/information that are relevant to understanding and treating the patient's depression (see case example).

The symptom, treatment, side effect, contextual, and other data gathered during the SDFS administration constitute a comprehensive "snapshot" of the patient's condition. Importantly, the gathered data are recorded in a single column of the SDFS, and the remaining contiguous columns on the one-page instrument are used for subsequent SDFS administrations. This simple design provides immediate understanding and feedback as to which and how symptoms have varied over time, how a patient has responded to previous treatment(s), what side effects have been experienced over the course of treatment, and whether life circumstances may be related to any change in symptoms.

As may be apparent, the SDFS allows for the above-described comparisons without having to sift through multiple narrative treatment records. We are not suggesting in any way that narrative treatment notes should be eliminated, but we do recognize research suggesting that narrative treatment records often fail to precisely quantify patients' symptoms, lack comprehensive symptom data, or are otherwise unhelpful due to unreadable handwriting and so forth.[67] Further, it is often a frustrating or simply impossible task to leaf through past narrative records and accurately compare patients' symptoms, treatments, and side effects across multiple office visits. The SDFS greatly reduces the above difficulties.

Relevant literature further suggests many

patients are treated ineffectively by way of haphazard, poorly-guided and/or inadequate treatments.[68] The SDFS can be quite helpful in guiding treatment of residual symptoms over time because it identifies specific symptom levels and patterns which may predict response to specific treatments. For example, patients with residual symptoms of fatigue might be considered for pharmacological treatment with an activating (noradrenergic) antidepressant or a specific psychotherapeutic intervention, while patients with residual symptoms of anxiety and insomnia could be considered for a more sedating (serotonergic) antidepressant or (for example) specific behavioral interventions.

It is our further observation that use of the SDFS may improve treatment outcomes by enhancing the treatment alliance. Research has repeatedly suggested the quality of the treatment alliance is predictive of outcome.[69] The SDFS may improve the treatment alliance by making the patient an active collaborator in his or her treatment. The clinician's regular recording and discussion of the patient's residual symptoms and progress also verify the clinician's attention to detail and active listening behaviors for the patient, and this remains true regardless of whether contact with the patient consists of a psychotherapy hour or briefer medication check by a physician or nurse.

Use of the SDFS also allows other clinicians who may subsequently treat the patient to understand quickly the patient's past treatment and current residual symptoms. Therapists have reported to us that the SDFS data is very useful in providing information to psychiatrists when patients are referred for possible pharmacotherapy. Finally, clinicians have also reported use of SDFS data assists them to develop treatment goals and plans consistent with agency, insurance, and/or managed care guidelines and to provide outcome data to the same.

Concurrent validity data.

We have conducted preliminary/pilot studies concerning the validity of the SDFS and how its use is perceived of by clinicians and patients. First, we asked consecutive patients being treated for depression in a community mental health center (CMHC) to complete the SDFS and the BDI at the same visit. This resulted in 84 sets of usable data. A Pearson's product-moment correlation of .784 ($R$-squared = .61, $p < .001$) was found between the SDFS and the BDI despite the different formats and administration techniques of the two instruments. This provides preliminary evidence of the concurrent validity of the SDFS with the BDI.

Clinician satisfaction ratings.

We next completed a pilot study designed to gather opinions as to the SDFS' perceived utility and ease of use from a small sample of clinicians who treat depressed patients. The sample was drawn from a CMHC and a private general medical practice and included two physicians (one psychiatrist, one internist), two (Ph.D.-level) psychologists, two psychiatric nurses, two master's-level counselors, and one master's-level social worker. The sample was a highly experienced group, with an average of 20.67 years of clinical experience (range was from 7 to 36 years). Average age of the sample was 50.86 years. The sample was primarily female and white, with one white male and one female of Middle Eastern heritage participating in the survey. The clinicians had received from the SDFS's author (RS) an average of 1.58 hours (range = 1.0 to 3.0 hours) of training in use of the instrument, and then used the instrument in clinical practice for an average of 38.4 weeks (range = 26 to 78 weeks). When all participants had used the instrument for at least six months they were asked to

complete a survey which, in addition to the demographic-type data noted above, solicited opinions regarding the SDFS.

Ten Likert-scaled questions (see Table 1) were utilized on the survey, with each having a range from one (strongly disagree) to five (strongly agree). Number of responses was nine for each item except for items 4, 7, and 9; responses for these items from a psychiatric nurse who conducted assessments only were not appropriate for inclusion. A tenth item asking whether the SDFS "helps me to select appropriate pharmacological treatments" was answered by the two physicians only; each "agreed" (i.e., provided a rating of "four") with this statement, but a test of significance was not calculated due to the small number of responses. One-sample t-tests in which the mean response was compared to the hypothesized population mean of "neutral" (i.e., three on the five-point scale) were conducted for the other nine items. Alpha was adjusted from the traditional .05 level to .025, and two-tailed tests were used, to help control for the possibility of Type I errors related to the multiple tests of significance. Surprisingly (given the small sample size), clinician responses on all nine items differed significantly from neutral in a positive direction, with p-values ranging from less than .001 to .017. This suggests that our small sample of predominantly white, female, highly experienced therapists and physicians found the SDFS quite useful and easy to use when treating outpatients with varying levels of depressive symptoms in a CMHC or general medical practice setting. Though these results are encouraging, they are preliminary and quite limited and thus further studies with larger, more diverse groups is needed.

Table 1
Clinicians' Perceptions Regarding Their Use of the SDFS

| Item | Mean | t-value | df | p-value |
|---|---|---|---|---|
| 1. SDFS quantifies depressive symptoms in a reliable and understandable manner. | 4.56 | 8.854 | 8 | < .001* |
| 2. SDFS allows me to track and rapidly evaluate changes in depressive symptoms over time. | 4.56 | 8.854 | 8 | < .001* |
| 3. SDFS leads to improved diagnostic accuracy. | 4.22 | 8.315 | 8 | < .001* |
| 4. SDFS improves treatment outcomes. | 4.25 | 5.000 | 7 | .002* |
| 5. SDFS is easy to use in everyday practice. | 4.56 | 8.854 | 8 | < .001* |
| 6. SDFS takes only a few minutes to complete. | 4.00 | 3.000 | 8 | .017* |
| 7. SDFS informs treatment choices, decisions, and strategies. | 4.00 | 5.292 | 7 | < .001* |
| 8. Patients quickly understand the SDFS' rating scale. | 4.22 | 8.315 | 8 | < .001* |
| 9. Use of the SDFS improves the treatment alliance. | 4.13 | 3.813 | 7 | < .001* |
| 10. SDFS helps me select medications (M.D.s only). | 4.00 | --[a] | 1 | -- |

Note. To reduce likelihood of Type I errors in light of the multiple t-tests used, alpha was adjusted to .025.

*$p < .025$, two-tailed.

[a] Unable to calculate a t-value because the standard deviation is zero.

Patient satisfaction ratings.

Finally, we gathered data on the perceived utility and ease of use of the SFDS from 41 outpatients being treated for depressive symptoms in a CMHC setting. The patients were treated by a psychiatrist who regularly administered the SDFS over the course of treatment, and who administered the satisfaction surveys to consecutive consenting patients. The survey contained 11 questions to be rated using five-point, Likert-type scales. We report findings from the first eight questions, the most relevant to the current paper, in Table 2. Again, one-sample t-tests were conducted to determine whether the mean response to each item differed significantly from neutral. Two-tailed tests were used and alpha was set at .025 to help control for the possibility of Type I errors related to the multiple tests.

Mean patient responses on all eight items differed significantly from neutral in a positive direction, with p-values of <.001 for all eight items. This suggests that our sample of clinical patients viewed the SDFS as a helpful, understandable, accurate, and time-efficient instrument for rating depressive symptoms, one that also creates a partnership between patient and clinician in the management of depression. These results, though encouraging, are preliminary and limited and further studies with larger, more diverse groups are needed to fully assess patients' perceptions as to the utility and ease of use of the SDFS.

Table 2
Patient Perceptions Regarding The Utility of the SDFS

| Item | Mean | t-value | df | p-value |
|---|---|---|---|---|
| 1. The SDFS measures symptoms of depression accurately. | 4.37 | 17.934 | 40 | <.001* |
| 2. On the SDFS, questions about depression symptoms are understandable. | 4.34 | 17.892 | 40 | <.001* |
| 3. The SDFS reduces the amount of time needed to describe symptoms of depression to the clinician. | 4.39 | 13.361 | 40 | <.001* |
| 4. The SDFS is a helpful tool to measure depression. | 4.41 | 15.338 | 40 | <.001* |
| 5. The SDFS creates a partnership between the patient and clinician in the management of depression. | 4.44 | 14.525 | 40 | <.001* |
| 6. The 0-10 rating scale of the SDFS accurately rates symptoms of depression. | 4.22 | 11.969 | 40 | <.001* |
| 7. The questions on the SDFS are clear. | 4.22 | 13.685 | 40 | <.001* |
| 8. The questions on the SDFS rarely need further explanation. | 3.98 | 7.340 | 40 | <.001* |

Note. To reduce likelihood of Type I errors in light of the multiple t-tests used, alpha was adjusted to .025.

*$p < .025$, two-tailed.

Case example.

"Jane" is a 35-year-old female referred by her primary care physician after a change in insurance coverage. Her case represents one of residual symptoms, treated via pharmacotherapy,

in the context of partial response to treatment. Jane's physician had treated Jane for unipolar depression for one year, with treatment consisting of venlafaxine 150 mg. daily. Jane's depression improved with this medication, she experienced no troubling side effects, and she reported stable levels of symptoms over the last six months or so of treatment. Administration of the SDFS (see Figure 1) suggested continuing mild-to-moderate levels of depression (4/10) and anxiety (5/10) along with prominent appetite disturbance, reduced energy, and thoughts of worthlessness. Moderately high levels of anhedonia and libido disturbance were present, and milder difficulties related to overall sleep quality, thinking/concentration, and irritability were reported.

Armed with the above data, and in order to enhance noradrenergic properties and thus target Jane's disinterest, anhedonia, decreased energy, and problems concentrating (as well as her depression), Jane's venlafaxine was increased to 187.5 mg., then to 225 mg. As can be seen, Jane's depression level dropped to 1/10, anxiety was reduced to 2/10, and almost all other symptoms decreased to levels of 0-2. The above process is consistent with our beliefs of collaborating with the patient to gather specific symptom data, matching treatments to specific residual symptoms, providing adequate levels of treatment,[68] systematically monitoring responses to treatment, and both treating to full remission and seeking the goal of a totally asymptomatic state for the patient.[8,25,26]

Figure 1

Case example.

## SPARHAWK DEPRESSION FLOWSHEET (SDFS)

| **Date Elicited** | 06/04/XXXX | 07/15/XXXX | 08/16/XXXX | | |
|---|---|---|---|---|---|
| **1. Depression** | 4 | 3 | 1 | | |
| 2. Anxiety | 5 | 3 | 2 | | |
| **3. Appetite** | 10↓ | 4↓ | 0 | | |
| **4. Interest** | 7 | 4 | 1 | | |
| **5. Sleep Disturb. (General)** | 4 | 4 | 1 | | |
| a. Sleep hours/24 | 7/24 | 6/24 | 7/24 | | |
| b. Initial Insomnia/7 | 2/7 | 2/7 | 0/7 | | |
| c. Mid-cycle wake/7 | 0/7 | 0/7 | 0/7 | | |
| d. Early morn wake/7 | 0/7 | 0/7 | 0/7 | | |
| **6. Pleasure** | 6 | 1 | 0 | | |
| **7. Energy** | 8↓ | 2↓ | 2↓ | | |
| 8. Libido (Disturbance) | 6 | 2 | 1 | | |
| **9. Thinking/Concentration** | 4 | 3 | 1 | | |
| **10. Worthless/SB/Guilt** | 10 | 4 | 1 | | |
| **11. Death** | 1 | 0 | 2 | | |
| **12. Suicide** | 0 | 0 | 0 | | |
| **13. SHPI** | denies SHPI | denies SHPI | denies SHPI | | |
| 14. Nervous. v. Tired | N = T | Neither | T > N | | |
| irritability | 3 | 3 | 1 | | |
| moodiness | 8 | 4 | 3 | | |
| emotional pain | 7 | 3 | 2 | | |
| 15. Psych. Meds. (mg/day) | Effexor 150 | Effexor 187.5 | Effexor 225 | | |
| | (from PCP | | | | |
| | x 1 year) | | | | |
| | | | | | |
| 16. Other Meds. | n/a | n/a | n/a | | |
| | | | | | |
| | | | | | |
| 17. Side Effects | none | drowsy 2 | drowsy 2 | | |
| | | | | | |
| | | | | | |
| 18. Psychotherapy type/freq | none | none | none | | |
| 19. Contextual Factors | | | | | |
| | | | | | |
| | | | | | |
| 20. ?'s/Loose Ends | | | | | |
| 21. GAF | | | | | |

## Summary, Limitations, and Suggestions for Further Research

Menza and colleauges[4] have raised the question of whether residual symptoms can and should be treated in a symptom-specific manner. Our paper suggests identifying and targeting specific residual symptoms via pharmacotherapy and/or psychotherapy may improve depression outcomes and thus further studies of these strategies are encouraged. We further suggest the Sparhawk Depression Flow Sheet may be helpful in quantifying residual symptoms of depression, informing symptom-specific treatment strategies, and tracking changes in residual symptoms and related variables (treatments, side effects, context, etc.) over time.

There are limitations to findings and conclusions of the current paper. We suggest the SDFS is well-suited for guiding symptom-specific treatment of residual depressive symptoms but provide no large-scale data in support of this assertion. As well, results derived from pilot studies of the instrument's validity and perceived utility, though robust within the context of the small samples utilized, are preliminary and further studies of the SDFS' validity, reliability, and usefulness are clearly necessary. Further, the pilot studies were completed in the context of ongoing depression treatment with diverse patients; i.e., study participants were not surveyed solely with respect to symptom-specific treatment of residual symptoms of depression but instead represented involvement with a wide range of depression levels.

In light of both the above limitations and the potential advantages offered by the SDFS, we suggest further studies of the SDFS in the context of symptom-specific treatment of residual depressive symptoms. Many questions concerning the treatment of residual symptoms of depression remain unanswered and we hypothesize that the SDFS may be helpful in answering some of the unanswered questions, guiding symptom-specific treatments of residual depressive symptoms, and ultimately improving depression outcomes. We close by noting that the idea of symptom-specific treatment of depression at the syndrome level, while lacking strong empirical support at present, continues to be raised by numerous authors and may become productive as further knowledge is developed concerning the neural pathways and biochemical and genetic influences involved in the development of depressive symptoms. The SDFS might be considered in this context at some future point, though we again suggest at present only that the SDFS may be helpful with respect to the symptom-specific treatment and exploration of residual symptoms of depression. Any expansion of the above hypothesis should be based on appropriate research and clinical findings.

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