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Are Sudden Gains Important in the Treatment of Eating Disorders?

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Introduction

The temporal nature of response to treatment has received much attention in the eating disorder (ED) literature, primarily through investigations of rapid response (RR). A similar, albeit distinct construct involving the timing and course of treatment response, is that of sudden gains (SGs; large symptomatic improvements experienced spontaneously during treatment). SGs have received much attention in the anxiety/depression literature, yet only one study has examined this construct in ED treatment.¹ Given SGs may be relevant to both clinicians and patients in clinical settings, this article will review the literature from other fields as a basis for examining SGs in ED treatment. First, we will compare and contrast RR and SGs in order to emphasize the distinctive elements of SGs. Then we will explore conceptual, methodological, and practical issues associated with examining SGs in ED treatment.

What is a sudden gain and how does it differ from rapid response?

Both RR and SGs are theoretical constructs originally derived from the study of cognitive behavioral therapy (CBT) for depression that are thought to characterize the time course of treatment and have implications for outcome. In EDs, RR is usually defined as a considerable reduction (e.g., 50–80%) in binge eating or purging or a percentage of weight regain in the context of weight restoration by the fourth week of treatment. These improvements have consistently predicted better outcomes in ED treatment.² However, cut-offs used to identify RR do not take into account the principle of equifinality, which suggests that an individual may meet the same criterion (i.e., for RR) via different pathways.

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Specifically, individuals may achieve symptomatic improvements early in treatment that are cumulative (i.e., incremental progress is made during the first four weeks) or they may achieve equally marked improvement all at once (as is true of a SG). As a result, SGs, which are substantial symptom improvements that appear to occur spontaneously between any two sessions rather than cumulatively across sessions,³ may be subsumed by calculations of RR if they occur early in treatment. However, evidence suggests that the occurrence of SGs may be equally distributed across the course of treatment.^{4,5} In addition, one study found no significant differences in outcome between individuals with SGs early in treatment compared to those with SGs later in treatment.⁶ These findings from the anxiety/depression literature suggest that SGs can occur at any point in treatment and require sudden and substantial improvement rather than cumulative improvement and are, therefore, theoretically different from RR. Moreover, Cavallini and Spangler (2013) found that 53% of their ED sample experienced at least one SG in ED symptomatology, providing preliminary evidence that SGs do occur in ED treatment. As discussed below, SGs also appear to have utility in predicting treatment outcome.

Do sudden gains have clinical implications for eating disorder treatment?

Findings from the anxiety/depression literature, as well as the one study of SGs in EDs, suggest that SGs are clinically meaningful. Similar to a recent meta-analysis suggesting that individuals who experience SGs during anxiety/depression treatment have better outcomes than those who do not experience SGs,⁷ results from Cavallini & Spangler's (2013) study suggest that SGs in ED symptomatology may also be predictive of better treatment outcomes. In addition to possibly having prognostic value in ED treatment, SGs may also have clinical utility in informing interventions for EDs. For example, understanding the patterns of change in treatment through research on the characteristics and mechanisms of SGs may help identify why SGs occur and at what point in treatment, which could impact the delivery of particular interventions. It is also possible that there are individual differences between those who gradually improve early in treatment (i.e., RR) and those who spontaneously achieve SGs throughout treatment, which may differentially impact outcome. Future research will be needed to test these hypotheses and to determine whether dimensional factors (e.g., frequency or distribution of SGs) have implications for treatment outcome.

How are sudden gains operationally defined in the anxiety and depression literature?

SGs in CBT for depression were originally identified using the following criteria between two consecutive sessions: a) the magnitude of change was large and absolute (i.e., decrease of at least seven points on the Beck Depression Inventory [BDI]); b) the improvement was large relative to symptom severity immediately prior to the gain (i.e., it represented at least 25% of the BDI score from the previous session); and c) the change was stable relative to symptom fluctuations (i.e., the mean of three BDI scores immediately prior to the gain was significantly higher than the mean of three BDI scores immediately after the gain).³

Numerous studies have since examined SGs in a variety of treatments for anxiety/depression. However, researchers have used modifications of the original criteria due to methodological concerns and criticisms, which have included: a) the first criterion is an arbitrary cutoff point; b) the second criterion is not necessary and incorrectly assumes that assessment measures are ratio scales (i.e., with an absolute zero point) rather than interval scales; and c) the third criterion precludes examination of early or late SGs.⁷ Statistical criticisms have also been made about the use of a t-test to determine the third criterion, as it violates the assumption of independence when comparing repeated measures for the same person.⁷ This has led researchers to calculate individual standard deviations across all treatment sessions and require that the SG be a specific amount greater than that standard deviation (e.g., 1.5 times greater).⁷

Can we examine sudden gains in eating disorder treatment?

The existing empirical literature provides a foundation for investigating SGs in ED treatment, but also presents several challenges. Specifically, defining and examining the predictive value of SGs in EDs requires consideration of which type of measurement is optimal and what operational definition will provide the most clinically meaningful information.

Type of measurement

Whereas anxiety/depression symptoms are often assessed using Likert scales of symptom severity, ED symptomatology is often measured using symptom frequency counts or body weight, which often have a restricted and skewed range. Although some established instruments do assess dimensional ED symptomatology, the timeframe covered is typically the past month. As a result, many well-validated ED measures are not able to capture session-to-session symptom changes. However, several brief assessment measures have been developed and may be promising for studying SGs in EDs. Importantly, these measures can be used from session-to-session and operational definitions of SGs can be created using the reliable change index,⁸ which establishes a statistically significant change score based on the reliability of the measure to determine cutoff scores.

Operational definition

The second consideration in measuring SGs in ED treatment is defining how much change constitutes a “gain.” In addition to identifying time intervals that ensure the gain is truly sudden (i.e., session-to-session), criteria must be developed to determine what symptom or dimensional change meaningfully constitutes a SG. At this point, it is unclear whether applying the aforementioned sets of criteria from the anxiety/depression literature will provide clinically meaningful information about change in core ED symptoms. In addition, it is unknown whether the assessment and operational definition of SGs should involve dimensional versus categorical approaches. Thus, future research is needed to determine the most optimal method for identifying SGs.

Given that data must be collected at every session in order to identify the occurrence of SGs, one additional and important consideration is the potential for participant burden. While it is

important for clinicians to monitor progress in both clinical and research settings, collecting and recording information at every visit may be onerous. Therefore, measures used to capture SGs need to be brief and easily used by both clinicians and patients. As discussed below, researchers must also consider which symptom indicators of SGs to examine.

Considerations in examining sudden gains in eating disorders

Applying the study of SGs to treatment across ED diagnostic groups requires consideration of both symptom measurement and operational criteria, as discussed above. Although diagnostic criteria differentiate anorexia nervosa (AN), bulimia nervosa (BN), and binge eating disorder (BED), there is significant overlap in symptomatology across these diagnoses. While low weight is specific to AN, several cognitive and behavioral symptoms are shared by the EDs and SGs in these symptoms may impact treatment outcomes. Although improvements in weight are essential to positive outcomes in AN and BMI can be measured from session-to-session, weight gain does not typically occur substantially over short periods of time, as would be required to meet SG criteria. Moreover, rapid weight regain can be dangerous given the potential for refeeding syndrome. In effect, weight gain in AN does not appear to be a feasible symptom to target in examining SGs. Sudden and substantial improvements in cognitive ED symptoms (e.g., restraint, overvaluation of shape/weight), on the other hand, may occur between sessions and could be used as indicators of SGs.

Behavioral symptoms (e.g., restriction, binge eating, purging), are often assessed using frequency counts and as a result may require a different strategy for capturing SGs. It may be possible to use a modification of the original SG criteria.³ However, one key consideration is determining what amount of change constitutes substantial improvement. Importantly, some participants may only have room for a change of one binge eating or purging episode between sessions. Although a change in one binge eating or purging episode may appear to be a low threshold with potential for a floor effect (which may also apply to measures other than frequency counts), the second and third SG criteria could be used to ensure the improvement was stable and substantial relative to normal binge eating and purging fluctuations.

Notably, SGs in ED psychopathology may not be the only or the best indicator of treatment outcome. Given high rates of comorbid anxiety/depression in EDs, SGs in the symptoms comprising these disorders may impact treatment outcome. SGs in other areas, such as emotion regulation or negative affect, may also function as better predictors of ED outcome than SGs in ED symptoms.

Discussion and future directions

Investigating SGs in ED treatment presents several challenges, including: 1) utilization of behavioral frequency counts versus dimensional measurement of symptoms to identify SGs; 2) modifying methodological criteria and addressing statistical criticisms of the original SG criteria; and 3) determining whether SGs have implications for treatment delivery and outcome. The optimal approach for measuring SGs in ED treatment is unclear and more

research is needed to identify the method that will be most clinically useful, particularly with respect to prognostic indicators of treatment outcome.

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