

Perception and Impact of Life Events in Medically Hospitalized Patients With Somatic Symptom and Related Disorders

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ABSTRACT

OBJECTIVES: We describe the prevalence and perceived impact of life events reported by medically hospitalized patients with somatic symptom and related disorders (SSRD) and highlight patient characteristics and outcomes associated with highly impactful life events.

METHODS: Retrospective chart reviews were conducted of patients with SSRD at a tertiary pediatric hospital who were seen by the psychiatry consultation service and completed various instruments while medically admitted, including a de novo life events checklist. Descriptive statistics, correlations, χ^2 tests, and internal consistency analyses were used.

RESULTS: Charts of 70.2% of patients with SSRD who completed the life events checklist ($N = 172$; age range 8–25 years) were reviewed. Of those studied, 94% reported at least 1 life event in the last year, with academic events most prevalent, 81% reported life events across multiple domains, and 56% perceived the life event(s) as having a great impact on their lives. Patients who perceived more great impact life events were older, from households with lower median incomes, had higher self-reported somatization, greater functional disability, more comorbid psychiatric diagnoses, required more psychotropic medications, and had longer medical admissions.

CONCLUSIONS: Findings reveal that although the majority of medically hospitalized patients with SSRD reported at least 1 relevant life event, it was the patients' perception of the impact of the life event(s) that correlated with high levels of disability and health care use. An assessment of the perception of life events in patients with SSRD may help hospitalists and interdisciplinary providers identify high-risk patients for whom early psychiatry referrals can be made.

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Somatic symptom and related disorders (SSRD) are often conceptualized as a stress response to life events and/or situations that exceed a person's capacities to cope, leading to the expression of emotional distress in the form of physical symptoms that negatively impact physical health.¹⁻³ Although the association of specific life experiences (eg, bullying and trauma) with psychosomatic complaints in youth has been studied,⁴⁻⁶ less is known about the general role and impact of multiple, varied stressors and/or life events, including the role of the perception of life events in psychosomatic presentations in this age group.⁷ A general assessment of daily hassles found no difference in the number of daily hassles reported by youth with SSRD and their healthy siblings,⁸ thus highlighting a need to further explore the life events reported by youth with SSRD and assess not only the number of reported events, but also their perception of the impact of these events.

Several predisposing and precipitating characteristics have been described in young patients with SSRD, including internalizing coping styles, avoidance of negative affect, inability to effectively identify and verbally express emotions and feelings (alexithymia), and difficulty adjusting to and/or recognizing stress.^{3,9-14} Although negative life events have been found to predict future somatic symptoms in a youth, community-based sample,¹⁴ it remains unclear to what extent life events affect patients whose symptoms are severe enough to warrant inpatient hospitalization. Patients with somatic symptoms are prevalent in pediatric hospitals, are frequently admitted to hospital medicine services,^{5,9} and are the second most common consultation request to pediatric consultation-liaison services in the United States and Canada.¹⁵ Hospitalized youth represent an even more vulnerable subsample of the SSRD population because of functional impairment, exposure to iatrogenic interventions, and high use of health care systems.⁵ Therefore, we focused on deepening our understanding of the life events experienced by these youth in the year leading up to their admission and

explored any links with their high burden of SSRD.

With the current study, we aim to assess both the prevalence and perceived impact of life events as separate constructs in medically hospitalized patients with SSRD by (1) describing the prevalence, types, and perceived impact of recent life events reported by medically hospitalized patients with SSRD and (2) assessing for any correlation between the number and perceived impact of reported life events and various patient characteristics and outcomes.

METHODS

A retrospective chart review of existing clinical data of medically hospitalized patients with SSRD seen by the psychiatry consultation service (PCS) at an urban, tertiary pediatric facility from 2012 to 2013 was conducted. Patients were assessed via a broader quality improvement (QI) initiative with an SSRD protocol that involved semistructured interviews (by child psychiatry and psychology clinicians) as well as the use of patient and/or parent self-report measures, which were included in the electronic medical record. The PCS clinician interview included an assessment of developmental, academic, and psychosocial factors, and patient and/or family psychiatric histories. When pertinent, and with consent, collateral information was obtained from primary care providers and outpatient mental health providers. All patients received medical evaluations during their admission, and diagnoses were established with close interdisciplinary provider collaboration on the basis of all the assessments conducted. When appropriate, patients received psychiatric diagnoses according to *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision* criteria.¹⁶

Patient Measures

Life Event Checklist

The life event checklist (LEC) was specifically developed for the SSRD protocol to standardize the assessment of life events in patients with SSRD because no validated measure exists for this patient population. It was developed primarily for clinical use

and not for research. This 60-item measure, which is used to assess the prevalence and perceived impact of life events as separate constructs across 3 major domains (family, academic, and social), was developed by reviewing similar measures assessing life events in other patient populations¹⁷⁻¹⁹ and includes a variety of events relevant to the wide age range of patients seen in tertiary pediatric institutions.²⁰ Patients ≥ 8 years of age were eligible to complete the measure. A unique feature of this measure is that it intentionally avoids the word "stress" and attributions of positive or negative valences for each life event to gather more broad information around the presence and perceived impact of life events regardless of whether the event is judged or perceived by the patient as being positive, negative, or stressful. Each life event was rated on a 5-point Likert scale (0 = event did not occur in the past year and 1 = event occurred with no perceived impact to 4 = event occurred with perceived great impact). Although it is not a validated tool, analyses conducted for the current study revealed that the LEC demonstrated strong internal consistency as a complete measure ($\alpha = .85$), as well as acceptable internal consistency by domains (family: $\alpha = .77$, academic: $\alpha = .72$, and social: $\alpha = .72$). One specific life event and/or item, "major personal illness or injury," was deemed to conceptually not fit into any of the 3 domains and was therefore not included in internal consistency analyses, but is highlighted and discussed in the Results and Discussion sections.

Childhood Somatization Inventory

The childhood somatization inventory (CSI) is a 35-item, patient-completed, validated measure that is used to assess the presence and severity of physical symptoms.²¹ With author permission, the measure was adapted for use in the inpatient medical setting. The time frame of measure was extended to "the past 6 months" (from the original "2 weeks"), and items were rated on a Likert-type scale (1 = "not at all" to 4 = "a whole lot") reflecting the extent to which physical symptoms were experienced by the patient.

The measure demonstrated strong internal consistency with the current study sample ($\alpha = .87$).

Functional Disability Inventory

The functional disability inventory (FDI) is a 15-item, patient-completed, validated measure that is used to assess impairment in physical and psychosocial functioning due to patient's physical health.²² Patients rated how much trouble they had completing identified activities in the past 2 weeks (0 = "no trouble" to 4 = "impossible"). The measure revealed excellent internal consistency with the current study sample ($\alpha = .93$).

For the current study, only patient measures were reviewed to focus on patients' perspectives of the presence and impact of life events in the past year (measured with the LEC) and how these correlated with patients' self-reported somatic symptoms (measured with the GSI) and functioning (measured with the FDI). Other measures used as part of the SSRD protocol were not included in this study and will be described elsewhere.

Chart Review and Analysis

The retrospective chart review was approved by the institutional review board of the facility. Patients were identified from a database in which all SSRD consultations

were recorded. Inclusion criteria were patients with SSRD diagnoses who completed the LEC and who were not in the custody of child protective services at the time of admission (70.2% of patients with SSRD met these inclusion criteria; Fig 1). Equivalent *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-V) diagnoses were assigned on chart review to provide consistency with changes within the fields of psychiatry and/or psychology.³ A research assistant abstracted deidentified data using a standardized data form that included these variables: demographics, health care use, psychiatric characteristics and/or diagnoses, and patient-report measures.

Statistical analyses (eg, descriptive statistics, correlations, χ^2 tests, and internal consistency) were conducted by using SPSS version 19 (IBM SPSS Statistics, IBM Corporation, Armonk, NY). All correlations were 2-sided, and a significance value of $P < .05$ was used for all analyses. Internal consistency was measured with Cronbach's α ($\alpha \geq 0.9$, excellent; $0.9 > \alpha \geq 0.8$, strong; $0.8 > \alpha \geq 0.7$, acceptable).

Descriptive statistics, such as means and SDs for normally distributed variables, as well as frequency and percentages for categorical variables, were generated.

RESULTS

Sample Characteristics

The 172 children, adolescents, and young adults included in analyses (70.2% of patients with SSRD who completed the LEC) had a median age of 15 years (SD = 3.30, range = 8–25 years), were primarily girls (76.7%), non-Hispanic white (80.8%), and from families with a median household income of \$75 327 (range = \$14 505–\$160 551), which was greater than the national average.²³ Patients primarily met criteria for the following DSM-V SSRD diagnoses: somatic symptom disorder with and without predominant pain (47.8%), conversion disorder (20.3%), psychological factors affecting the medical condition (19.8%), or other specified somatic symptom and related disorder (12.2%). Additional DSM-V comorbid psychiatric diagnoses (eg, anxiety disorders, depressive disorders, trauma and stressor related disorders) were present in 68.7% of the sample.

Total Life Events

The majority of patients (94.2%) reported at least 1 life event in the past year, most frequently in the academic domain, with 80.8% reporting life events from multiple domains (ie, academic, family, and social). Patients reported a mean of 8.34 total life events (SD = 6.01; range 0–29) of varying perceived impact ("none" to "great").

The most frequently reported events are listed in Table 1. Pearson correlations demonstrated significant results between the weighted sum score of total life events and other variables; specifically, higher total life event scores were associated with higher self-reported somatization scores and more comorbid psychiatric diagnoses (Table 2).

Great Impact Life Events

More than half (56.4%) of the sample perceived at least 1 life event as having great impact in the past year, and 36.1% perceived life events from >1 domain as having great impact. Patients perceived a mean of 2.27 great impact life events (SD = 3.00; range 0–14). We used χ^2 analyses and found no statistically significant difference in types of SSRD diagnoses between those

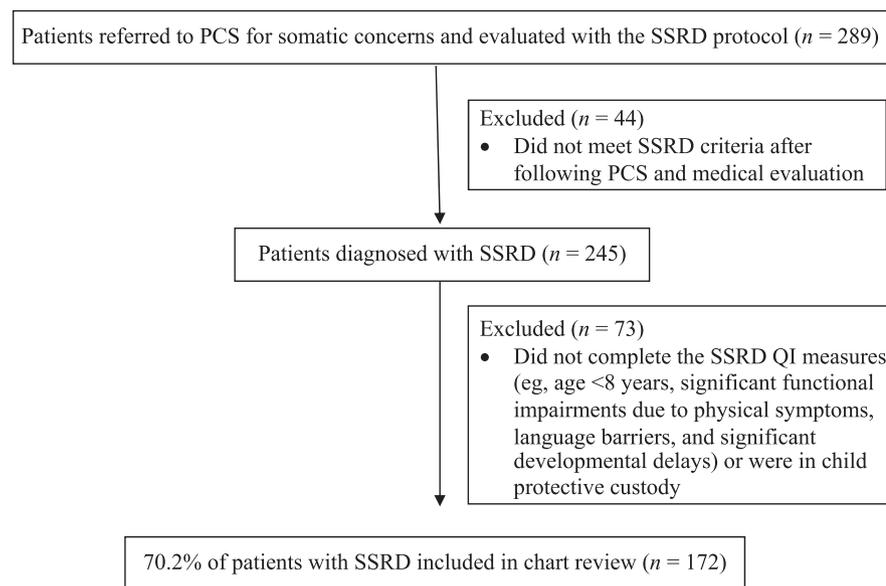


FIGURE 1 Chart review enrollment.

TABLE 1 Most Frequently Endorsed Life Events

Life Event	Most Frequently Endorsed Total Life Events		Most Frequently Endorsed Great Impact Life Events		
	Domain	<i>n</i>	%	<i>n</i>	%
Arguments in the family	Family	61	35.47	13	7.56
Major personal illness or injury	—	59	34.30	39	22.67
Transition to a new grade and/or class	Academic	58	33.72	—	—
Trouble with brother or sister	Family	54	31.40	—	—
Making the honor roll	Academic	54	31.40	22	12.79
Difficulties with learning	Academic	52	30.23	11	6.40
Increased academic demands	Academic	48	27.91	—	—
Self-image struggles	Social	48	27.91	15	8.72
New teacher	Academic	47	27.33	—	—
Serious illness or injury of family member	Family	46	26.74	15	8.72
Special recognition for good grades	Academic	44	25.58	10	5.81
Grades falling and/or failing a grade	Academic	43	25.00	13	7.56
Changing to a new school	Academic	41	23.84	—	—
Difficulties with current friends	Social	41	23.84	—	—
Joining a new club and/or team (sports, dance, acting, etc)	Social	40	23.26	19	11.05
Getting a job	Social	11	6.40	—	—
New boyfriend or girlfriend	Social	11	6.40	—	—
Loss of another significant family member (grandparent, step-parent)	Family	10	5.81	—	—
Death of a family member	Family	10	5.81	—	—
Preparation for college	Academic	10	5.81	—	—
Special recognition for athletics, academics, or any other performance and/or skills	Academic and/or social	10	5.81	—	—

Total *N* = 172. —, not applicable.

who did and did not perceive at least 1 great impact life event ($P > .05$). The most frequently reported great impact life events are listed in Table 1. Pearson correlations demonstrated several significant results between the weighted sum score of perceived great impact life events and other variables (Table 2). Similar to total life events, significant associations with higher self-reported somatization scores and more comorbid psychiatric diagnoses were seen. Additionally, higher great impact life event scores were significantly associated with lower median household incomes, older age at time of admission, lower clinician-rated functioning at time of psychiatric evaluation, higher self-reported functional disability, longer medical admissions, more psychiatry encounters, and more psychotropic medications prescribed during the

admission. Other variables of interest that were not significantly related are also reported in Table 2.

DISCUSSION

There have been recent efforts to guide pediatric hospital providers' understanding of SSRD presentations in inpatient medical settings to provide better care.^{5,9} This is the first study in which a range of self-reported life events and associated outcomes in medically hospitalized pediatric and young adult patients with SSRD is described. Notably, the vast majority of patients in the study reported experiencing at least 1 life event in the past year, and more than half perceived the events as having a great impact on their lives. Patients with SSRD are often described as lacking awareness of their emotions or stress levels.^{12,24} Given

this, eliminating the word stress in our assessment tool may have facilitated the reporting of life events by maintaining neutrality and not attributing desirable and/or nondesirable qualities to each event or labeling the events as "negative" or "adverse." Pediatric providers using assessment approaches, which are only used to evaluate for stressful life events, may miss situations that are not perceived by youth as stressful but have potentially significant impact on their coping, illness severity, and overall functioning. Furthermore, certain life events, which may generally be perceived as positive and/or desirable (eg, a new relationship and making the honor roll), were frequently perceived by patients as highly impactful, with associated increased somatization and SSRD severity. Findings from the current study should be used to inform future efforts to develop a validated measure for assessing life events in patients with SSRD.

In our predominantly pediatric sample, academically themed events were the most highly prevalent life events both in terms of overall frequency and perceived great impact events. This is consistent with previous research revealing that pediatric patients with SSRD experience high self- or other-imposed academic demands, many school transitions, academic accommodations due to learning difficulties, dropping grades, and/or school absences.^{5,9,25} Because the LEC was only used to measure events occurring in the past year, events like trauma and bullying, which can be highly impactful, were not among the most frequently reported, although they were included in the LEC. Authors of previous studies have described the lifetime prevalence of trauma (29.7%) and bullying (37%) in hospitalized youth with SSRD and revealed that although the majority of patients may not report these symptoms, those who do have unique vulnerabilities.^{5,6}

One specific life event on the LEC worth highlighting is major personal illness or injury because it did not conceptually fall into either academic, social, or family domains. Given the inpatient setting of this study, it is not surprising that this was one

TABLE 2 Bivariate Correlations Between Weighted Sum Score of Total Life Events and Great Impact Life Events and Selected Independent Variables

	Total Life Events	Great Impact Life Events
Self-reported somatization (CSI total)	0.37***	0.40***
Comorbid psychiatric diagnoses	0.28***	0.30***
Median household income	-0.15	-0.17*
Age	0.14	0.22**
Clinician-rated functioning at evaluation (CGAS)	-0.11	-0.20**
Self-reported functional disability (FDI total)	0.14	0.19*
Length of current admission	0.14	0.17*
Psychiatry encounters during current admission	0.24	0.30*
Psychiatric medications prescribed during current admission	0.13	0.15*
Inpatient medical admissions in y before current admission	-0.07	-0.05
Specialty consults during current admission	-0.00	0.04

CGAS, Children's Global Assessment Scale.

* $P < .05$; ** $P < .01$; *** $P < .001$.

of the most frequently reported events and was perceived as having a great impact almost twice as often as other life events. Interestingly, despite all patients within the current sample being medically hospitalized, nearly two-thirds of the sample did not report major personal illness or injury as a life event that occurred over the past year, and >75% of those who did report this event did not perceive it as having a great impact on their lives. This surprising finding may be linked to the term *la belle indifférence*, which has been used to describe an apparent lack of concern shown by some patients with SSRD toward their symptoms.²⁴ Because the majority of our sample did not identify major personal illness as an impactful life event, it becomes even more pertinent to consider the life events that patients did report and the significance of these events on their clinical presentation and functioning.

Our assessment of the correlations between life events and patient outcomes and characteristics revealed that the perception of great impact events yielded more significant outcomes than simply the number of reported life events. Specifically, patients who perceived their life events as having great impact had more substantial vulnerabilities, with more great impact events correlating with more vulnerabilities. These included more psychiatric comorbidities, lower household incomes,

higher self-reported somatization, greater functional disability, and longer medical admissions requiring more psychiatric support and/or medications. Being a cross-sectional study, we cannot attribute directionality to these findings. It is worth exploring whether patients from low-income households experienced life events as more impactful because they had fewer resources to overcome them, or if they were more susceptible to experiencing life events because of factors related to their socioeconomic status. Regardless, for youth with SSRD whose symptoms are severe enough to warrant inpatient hospitalization, the correlation between their perceived, highly impactful recent life events and their functional disability and symptom severity underscores the importance of increasing awareness among the providers who care for them.

Hospital medicine providers often coordinate the initial assessment and multidisciplinary management of patients admitted with unexplained physical symptoms, and their decisions may be influenced by patients' denial of acute or chronic stressors and/or by patients' reporting of only positive life events. Educating providers about neutrally assessing life events and their perceived impact on hospitalized youth with a concern for somatization may lead to earlier referral to psychiatry and/or psychology

consultation-liaison services and facilitate an early multidisciplinary assessment and management approach that can reduce length of admissions²⁶ and lessen the risk of exposure to excessive and iatrogenic interventions in youth with SSRD. We must emphasize that patients' report of impactful life events does not preclude medical factors from also playing a role in their presentations. This is important because many hospitalized individuals with SSRD also have comorbid medical conditions,⁹ and not all patients who report impactful life events have SSRD. Unfortunately, dichotomous "medical" or "psychiatric" approaches to conceptualizing SSRD by providers, rather than a multifactorial biopsychosocial framework, can contribute to missed diagnoses and patients minimizing and underreporting life stressors because of concerns that their physical symptoms may not be taken seriously.

The current study has several limitations. Generalizability is limited given the relatively small sample size from 1 tertiary facility. Patients who did not complete the QI measures during their hospitalization (29.8% of patients with SSRD) were excluded from the sample, potentially affecting the results. Additionally, there was no control group of patients who completed the LEC for comparisons around self-report of life events and perceived impact. Future studies that include control groups as well as parent reports of the occurrence and impact of life events for their child will likely yield additional valuable information. Given that correlation results do not determine direction or causation and the LEC did not elicit details around when or how frequently life events occurred within the past year, we are unable to assess the proximity of life events to patients' clinical presentation at the time of admission, or the specific role each event (or repetition of events) may have played in perceived life impact and potential decline in functioning. Further research is needed to determine what findings are causal or a function of confounding factors. Lastly, although the LEC shows some good psychometric attributes, validating this measure was outside the scope of this study but lays the foundation for future research efforts to develop a

standardized, validated life events questionnaire for patients with SSRD. Additional life events may have occurred in different domains of patients' lives that were missed by the LEC. Specifically, events that have a potential to be hugely impactful (eg, terrorism and natural disasters) were not included; however, such events have recently been shown to result in an increase in patients with SSRD presenting to pediatric hospital settings.²⁷

CONCLUSIONS

To our knowledge, this is the first study in which the prevalence and perceived impact of life events in hospitalized patients with SSRD in a pediatric setting is explored. Findings reveal that although the majority of patients reported multiple life events, it was the patients' perception of the impact of the life event(s) that correlated with high levels of disability and health care use. Implications for care include identifying high-risk youth and educating hospital providers and families about links between life events, somatic symptom severity, and functional disability.

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