

## ORIGINAL RESEARCH—WOMEN'S SEXUAL DYSFUNCTIONS

### The Sexual Interest and Desire Inventory—Female (SIDI-F): Item Response Analyses of Data from Women Diagnosed with Hypoactive Sexual Desire Disorder

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#### ABSTRACT

**Introduction.** Hypoactive sexual desire disorder (HSDD) is the most common sexual complaint in women. Currently there are no validated instruments for specifically assessing HSDD severity, or change in HSDD severity in response to treatment, in premenopausal women. The Sexual Interest and Desire Inventory—Female (SIDI-F) is a clinician-administered instrument that was developed to measure severity and change in response to treatment of HSDD. Seventeen items were included in a preliminary version of the SIDI-F, including 10 items related to desire, and seven items related to possible comorbid factors (e.g., other kinds of sexual dysfunction, general relationship satisfaction, mood, and fatigue).

**Aim.** The aim of the study was to use the outcome of item response analyses of blinded data from two randomized, placebo-controlled trials, to assist in the revision of the scale.

**Methods.** A nonparametric item response (IRT) model was used to assess the relation between item functioning and HSDD severity on this preliminary version of the SIDI-F.

**Results.** Results show that the majority of SIDI-F items demonstrated good sensitivity to differences in overall HSDD severity. That is, there was an orderly relation between differences in option selection for an item and differences in overall HSDD severity. The IRT analyses further indicated that revisions were warranted for a number of these items. Five items were not sensitive to differences in HSDD severity and were removed from the scale.

**Conclusion.** The SIDI-F is a brief, clinician-administered rating scale designed to assess severity of HSDD symptoms in women. IRT analyses show that majority of the items of the SIDI-F function well in discriminating individual differences in HSDD severity. A revised 13-item version of the SIDI-F is currently undergoing further validation. **Sills T, Wunderlich G, Pyke R, Segraves RT, Leiblum S, Clayton A, Cotton D, and Evans K. The Sexual Interest and Desire Inventory—Female (SIDI-F): item response analyses of data from women diagnosed with hypoactive sexual desire disorder. J Sex Med 2005;2:801–818.**

**Key Words.** Psychological Assessment of Sexual Dysfunction; Hypoactive Sexual Desire Disorder; Item Response

#### Introduction

Hypoactive sexual desire disorder (HSDD) is the most common sexual complaint in

women, with reports of prevalence estimates among females in the general population ranging from 5% to 46% [1]. Among women in primary care settings the prevalence of HSDD ranges from

10% to 46% [1]. HSDD has been reported in approximately 30% of women in population-based studies [2]. In addition, HSDD frequently occurs comorbidly with other sexual disorders. In a study examining 906 men and women with complaints of sexual dysfunction, 65% had a primary diagnosis of HSDD. Approximately 40% of those with the primary diagnosis of HSDD had secondary diagnoses of arousal or orgasm disorders [3].

Hypoactive sexual desire disorder is defined in the Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition (DSM-IV) as “persistently or recurrently deficient (or absent) sexual fantasies and desire for sexual activity” that results in “marked distress or interpersonal difficulty” [4]. The report from the international consensus development conference on female sexual dysfunction held in 2000 expanded the definition to include a deficit in receptivity to sexual activity as well [5].

There are currently no available validated instruments to assess severity of HSDD in nonmenopausal patients, or to measure change in response to either pharmacological or nonpharmacological treatment of HSDD. There are a number of instruments that examine global sexual functioning in women (e.g., Female Sexual Function Index [FSFI®], Changes in Sexual Functioning Questionnaire [CSFQ®], Brief Index of Sexual Functioning for Women [BISF-W®]); however, none of these focus specifically on the major clinical complaints among women with HSDD. Two scales, the Sexual Desire Inventory (SDI) and the Hurlbert Index of Sexual Desire, assess a number of aspects of sexual desire, but were not developed to specifically assess severity in HSDD or to assess change in response to treatment [6–8].

The Sexual Interest and Desire Inventory—Female (SIDI-F) was developed as a clinician-administered assessment tool to quantify severity of HSDD, and to assess change in response to treatment. A preliminary version of the SIDI-F was presented to 21 volunteers, nine participants without sexual complaint and 12 participants diagnosed with HSDD. This pilot study was carried out in order to assess comprehension and ease of use of the tool, as well as to determine that relevant symptoms were being assessed. In addition, this pilot study produced preliminary data showing that the scale can be used to discriminate between participants diagnosed with HSDD and those without a clinical diagnosis of sexual dysfunction. That is, there was no overlap in the dis-

tribution of scores for women without a diagnosis of sexual dysfunction and women diagnosed with HSDD. Moreover, there was a significant correlation between the total score on the SIDI-F and the total score on the CSFQ®, supporting the validity of the SIDI-F as a measure of sexual functioning in women diagnosed with HSDD.

Upon completion of the pilot testing, the instrument was included in two clinical trials in patients diagnosed with HSDD. A nonparametric item response model was used to assess the functioning of the scale and its constituent items with regard to discriminating individual differences in HSDD severity with the blinded data generated from the two studies.

Item Response Theory (IRT) is becoming increasingly utilized in the development of rating scales. IRT applies statistical models to the study of the relationship between the functioning of items on a rating scale and the hypothesized trait measured by the scale. That is, it is presumed that the choice of a particular option for a particular item on a scale is determined by the amount or level of some underlying trait (e.g., sexual desire disorder severity). These methods have been used previously to assess the performance of rating scales, including those used to measure depression [9–12] and alcohol dependence [13,14].

Application of IRT analyses is particularly useful in scale development to pare items from the scale that are unrelated to the underlying trait. Consequently, a scale can be designed with the fewest items necessary to measure the underlying trait with accuracy. In addition to paring inappropriate items from the scale, IRT analysis can also identify items in need of revision in order to enhance the sensitivity of those items to differences in the underlying trait.

To examine the functioning of the items on the SIDI-F with respect to the assessment of severity, an IRT analysis was carried out using the blinded data from two randomized, controlled, clinical trials. This analysis was used, in part, to reduce the number of items on the scale, as well as to determine which of the remaining items needed revision.

## Methods

### *Patient Population*

Blinded data from two randomized, double-blind, placebo-controlled studies were combined for the analyses. Both studies enrolled premenopausal female outpatients (18–45 years) diagnosed with

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