

The Self-Estimation Index of Erectile Function-No Sexual Intercourse (SIEF-NS): A Multidimensional Scale to Assess Erectile Dysfunction in the Absence of Sexual Intercourse

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ABSTRACT

Introduction. A new concept of Erectile Dysfunction with No Sexual Intercourse (ED-NS) is proposed to acknowledge the subpopulation of patients who are unable to achieve or sustain an erection in the absence of sexual intercourse. Since the commonly used ED diagnostic tool, International Index of Erectile Function Questionnaire is not able to adequately assess the erectile function (EF) in the absence of intercourse, the researchers developed a new 10-item questionnaire to better evaluate the EF in this special patient subpopulation: Self-Estimation Index of Erectile Function-No Sexual Intercourse (SIEF-NS).

Aim. To validate the reliability, sensitivity and specificity of SIEF-NS.

Methods. The study was carried out in three phases. Phase one applied component analysis to 126 ED-NS patients to search for the primary factors and Cronbach's alpha standardized statistic values for SIEF-NS. Phase two applied discriminant analysis to participants' (212 ED-NS patients and 193 normal controls) scores on each question item, each factor and the overall 10-item questionnaire. Phase three investigated SIEF-NS's capability of evaluating treatment effect on 41 ED-NS patients.

Main Outcome Measures. Reliability, sensitivity and specificity were defined and used to evaluate the performance of SIEF-NS.

Results. EF by autonomic response (factor 1) and EF with potential sexual partners (factor 2) are the two primary factors with eigenvalues greater than 1.0. High degree of internal consistency was observed for the two factors and the 10-item questionnaire (Cronbach's alpha values: 0.871 for 10 items, 0.84 for factor 1, and 0.823 for factor 2). SIEF-NS demonstrated adequate construct validity, high sensitivity (0.925) and specificity (0.829) to diagnose ED-NS. The EF scores of ED-NS patients post treatment showed significant improvement ($P < 0.05$).

Conclusion. SIEF-NS can be used to identify ED-NS patients and detect treatment-related EF changes in ED-NS patients. **Yuan Y, Zhang Z, Gao B, Peng J, Cui W, Song W, Xin Z, and Guo Y. The Self-Estimation Index of Erectile Function-No Sexual Intercourse (SIEF-NS): A multidimensional scale to assess erectile dysfunction in the absence of sexual intercourse. J Sex Med 2014;11:1201–1207.**

Key Words. Erectile Dysfunction-No Sexual Intercourse; Erectile Function; Questionnaires; Standard Operating Procedures for Erectile Dysfunction

Introduction

Erectile Dysfunction-No Sexual Intercourse (ED-NS) is defined as the subjective inability to have enough erection hardness and duration

and thereby lacking enough confidence to attempt sexual intercourse. It is a new concept and different from the conventional diagnosis of ED because ED is commonly defined as the inability to achieve or maintain an erection sufficient for satisfactory

sexual performance during intercourse while ED-NS refers to erectile dysfunction with no sexual intercourse involvement [1].

According to our previous study, the incidence of ED-NS in patients who complained of declined erectile function (EF) was 7% in our center [2]. All the ED-NS patients reported that they had history of erectile dysfunction during sexual intercourse with some even reporting marriage dissolution as a consequence. Their EF had then declined in many ways including nocturnal penile erection, erection during audio-video sexual stimulation and in sexual fantasy with potential sexual partners (PSP). Therefore, they did not have the confidence to seek sexual intercourse. However, their requests for medical treatment [3–8] to regain EF are often denied since they are technically not considered as ED patients according to the conventional definition of ED which only occurs during sexual intercourse.

The researchers applied the International Index of Erectile Function Questionnaire (IIEF) [9] to estimate the EF of the ED-NS patients. They all scored “zero” as answers to most of the questions on IIEF since those questions applied only to symptoms during intercourse. Upon recognizing that IIEF is not a suitable diagnostic method for ED-NS patients, the researchers developed a new questionnaire, Self-Estimation Index of Erectile Function-No Sexual Life/intercourse (SIEF-NS), as a screening tool to estimate the EF in ED-NS patients. One important innovation of this study is that the investigation was focused on the evaluation of EF with no sexual intercourse but with nocturnal penile erection, erection during audio-video sexual stimulation and in sexual fantasy, which has not been discussed in previously published literatures.

Sexual function is well known to be best assessed in a naturalistic setting with patient self-report techniques. SIEF-NS was designed to be a multidimensional, psychometrically valid, self-administered and patient-friendly questionnaire that is minimally burdensome for both patients

and physicians. The aim of our research was to develop a screening tool that can provide a brief and reliable measure of EF in ED-NS patient population with high sensitivity and specificity.

As part of our series research, the objective of the present study was to validate the reliability, construct validity, and treatment responsiveness of SIEF-NS with larger patient samples.

Methods

The protocol of the study was approved by a local institutional review board with written informed consent obtained from each participant prior to study entry. The inclusion criteria for enrolled ED-NS patients required that the patients must be at least 18 years old with a clinical diagnosis of ED-NS for a minimum of 6 months. Patients with ED-NS were excluded if they had an anatomical disorder of the penis impairing EF, a major medical illness (e.g., uncontrolled diabetes or severe renal, hepatic or cardiovascular disease), a major psychiatric disorder, or a history of alcohol or drug abuse.

The study consisted of three phases as detailed below. The researchers recruited 126 ED-NS patients for phase one study, 212 ED-NS patients and 193 normal controls for phase two, and 41 ED-NS patients for phase three. The baseline characteristics of individuals enrolled in all phases are shown in Table 1.

Phase I: Item Selection and Construct Validity

The SIEF-NS questionnaire consisted of 10 items (questions) and included the following five dimensions: sexual libido, general EF, nocturnal penile erection, EF during audio-video sexual stimulation, and EF during sexual fantasy with potential sexual partners (PSP). The questionnaire was pre-evaluated by third party reviewers to assure that all questions and answer sets can be understood by patients with primary school level of education. They were further verbally described by an urologist using primary school vocabulary during con-

Table 1 Baseline characteristics of individuals enrolled in the three phases of the study

Study	Phase I	Phase II		Phase III
Patient characteristics	Patients with ED-NS	Patients with ED-NS	Controls	Patients with ED-NS
Number of patients	126	212	193	41
Mean age (range): year	25.9 (18–38)	25.1 (18–37)	25.5 (18–36)	25.8 (20–36)
Mean duration of ED-NS (range): year	1.2 (0.5–4)	1.1 (0.5–4)	1.2 (0.5–3.5)	1.2 (0.5–3)

ED-NS = Erectile Dysfunction-No Sexual Intercourse

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