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Development of Hindi-Translated Version of the Female Sexual Function Index for Evaluating Sexual Dysfunctions among Individuals with Anxiety, Depression, and Other Common Mental Health Conditions: Experiential Account and Preliminary Findings from India

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Abstract: Sexual dysfunctions are common among females with common mental health conditions, such as anxiety and depression. However, discussion on this topic remains taboo in many cultures, including India. Worldwide, the Female Sexual Function Index (FSFI) is the most used tool to evaluate sexual functioning in females. Researchers across the globe attempted to translate and validate this scale in native languages (e.g., Japanese and Spanish); however, such translations are not available in Hindi. Strikingly, although there is literature informing us about the regional validation process of this scale, little has been discussed about qualitative nuances of the process of translation, the expert panel discussion, and cognitive interviewing during pilot testing. The lack of such procedural qualitative data limits the replicability of such translations in different cultures; furthermore, it can adversely influence the parameters of the validation study. Hence, the current study was conducted to highlight the process of Hindi translation of the FSFI and illustrate the challenges faced at various stages of translation and testing. The study was conducted in the multidisciplinary hospital of Central India by involving five translators, five expert panel discussants, and 15 patients with common mental health conditions or their caregivers. The significant findings of the current work include the requirement of semantic and grammatical changes and rephrasing of the sentences for improving comprehensibility and applicability in the Indian population (during the panel discussion). Additionally, it informed us to use alternate or more than one word to capture a concept, including English words written in Hindi (during preliminary pilot testing). Critical roadblocks were inadequate awareness of the issues, lack of typical/comprehensive terminologies to capture the ideas, and significant stigma attached to the subject.

Keywords: female sexuality; female sexual dysfunction; translation; tool adaptation; anxiety; depression; common mental disorders; female sexual function index

1. Introduction

Sexual functioning has been critically linked to the sense of well-being of an individual; this holds for females as well. The literature suggests that female sexual dysfunction is widely prevalent. Various studies, such as one by Shifren et al. in the U.S., found the prevalence of female sexual dysfunction (FSD) in the general population to be 43.1% [1]. A similar finding was reported in a population-based German health and sexuality survey where researchers found that 45.7% of women had one or more sexual dysfunctions; the most commonly reported problems were hypoactive sexual desire and orgasmic dysfunction [2]. Poor self-assessed health, depression, anxiety, psychological distress, and thyroid abnormalities are important correlates of this condition [1,3].

Although most research on female sexual dysfunctions has been conducted in developed countries, a few insightful literatures are available on this topic from developing countries such as India, where discussion about sexual practices is still taboo. Research from developing nations (e.g., India, China) reveals that, similar to the developed countries, the magnitude of sexual dysfunctions among females is substantial here, and so are their bio-psycho-social correlates [4,5]. For instance, one population-based survey in China showed that 35% of its females had sexual dysfunction [3]. On the other hand, one survey involving the rural population of Southern India found the prevalence of female sexual dysfunction to be 14%.

In India, the Female Sexual Dysfunction Index (FSFI) has been the most widely used instrument for studying the epidemiology of female sexual dysfunction. For instance, a cross-sectional study conducted in Ahmedabad (Western India) using FSFI by involving 153 females of the reproductive age group (20–47 years) reported the prevalence of sexual dysfunction(s) to be 55.5% [4]. Another study with FSFI as an assessment measure conducted in central India found that a sizeable proportion of the female participants had sexual dysfunction(s), with prevalence much higher among females suffering from generalized anxiety disorder (85.18%) vs. healthy controls (38%) [5]. Similarly, a study conducted in 2019 revealed that sexual dysfunction(s) was significantly higher in female patients with depression who were in remission and receiving Escitalopram for their illness compared to healthy controls [6].

Furthermore, the literature on female sexual dysfunctions from India found that middle-aged females more often suffer from overlapping sexual dysfunctions, with arousal dysfunction being the most common condition while sexual aversion disorder is the least [7]. Another cross-sectional study having participants with similar socio-demographic characteristics as the previous study, which was conducted in a teaching hospital, reported the prevalence of sexual dysfunction to be 73.2%. These variations in the prevalence of sexual dysfunction could be attributed to cultural factors and methodological differences, such as assessment tools used (original version vs. native language-translated scale), population types (general population/clinical population), setting of the study (community vs. hospital-based), and age groups involved. The expertise of the investigators on the topic can also influence the robustness of the research and subsequent findings [8].

Notably, socio-cultural factors play a crucial role in developing sexual dysfunction in females [9]. For example, women in Asian culture are usually expected to maintain silence and shame regarding sexuality [10]. As a result, there is a lack of sexual knowledge and negative attitudes regarding sexuality.

Despite the magnitude of sexual dysfunction among females, particularly those suffering from common mental disorders, one of the most significant impediments to researching female sexual function is the lack of an instrument in the native language. Although few Indian researchers have attempted to study the epidemiology of female sexual dysfunction in the native population by translating the FSFI into the native language [7,11]; their translated versions lacked methodological rigor.

Lately, attempts have also been made worldwide to translate the FSFI into native languages such as Spanish [12], Japanese [13], Urdu [14], etc. However, the available literature lacked documenting details of the translation process, back-translation, qualitative data from the expert panel discussion, and the cognitive interview (findings of the preliminary pilot testing).

For instance, FSFI has been translated, cross-culturally adapted, and psychometrically validated in Urdu by Rehman et al. Here, the authors have mentioned that the scale has undergone stages of forward-translation, back-translation, and an expert panel discussion with pilot testing; however, how these steps were conducted and the qualitative data obtained thereof have not been discussed [14]. Similarly, another study that translated the original FSFI (English version) into Spanish lacked back-translation and pilot testing details [12].

Still, another study on the Japanese version of the FSFI, although it provided quantitative data on the reliability and validity of this instrument, failed to highlight the qualitative aspects of translating the original FSFI into the native language [13].

These findings reflect that more focus has been made on establishing the psychometric properties of the developed tool; however, researchers tend to give lesser emphasis or describe inadequately the procedure of translating a given instrument into the native language. The latter includes not highlighting the nuances of the expert panel discussion, not providing findings of the cognitive interviewing and revisions made thereof.

The literature suggests that researchers pay less attention to the cultural relevance of adaptation and translation of the original scale [15,16]. Similarly, very few studies actually conduct robust pilot testing of the initially developed translated tool of the original instrument before using it in clinical practice or research [16]. The lack of such procedural qualitative data limits the replicability of such translations in different cultures; furthermore, it can adversely influence the parameters of the subsequent validation study [15–17]. This aspect becomes particularly crucial for a topic such as sexual practices and the sexual functioning of the population, where there is a lack of common language to describe one's sexual habits and functioning (or dysfunctions) and a topic often under-discussed, including in clinical practice.

Therefore, more literature is required to guide researchers in designing the translated version of such instruments relevant to different populations and making it culturally acceptable.

Hence, to fill this gap in the existing literature on the development of native language-translated versions of the original scale, the current study intends to highlight the process of translating the original English language Female Sexual Function Index into Hindi. Additionally, it also aims to inform readers about the author's experience of developing such a tool, including perceived challenges at various stages of the translation and ways to overcome them. Finally, the research findings can be utilized by future researchers who engage in developing assessment tools in a native language.

2. Aim and Objectives

The present study aims to highlight the translation process of the original Female Sexual Functioning Index Scale into Hindi and illustrate the challenges faced at various stages of translation and testing.

2.1. Objectives

1. To highlight the process of translation and pilot testing of the FSFI in Hindi;
2. To share authors' experience, perceived challenges, and possible way outs in developing the Hindi version of the FSFI.

2.2. Materials and Methods

Study universe and setting: The study was conducted in a tertiary-care multidisciplinary hospital in Central India. The expert panel discussion involved faculty members and resident doctor(s) of the institute. For the preliminary pilot testing of the pre-final Hindi FSFI, those females visiting the outpatient psychiatric facility of our hospital were interviewed. A purposive sampling method was used for pilot testing (cognitive interviewing).

Participants of the study: The translators included individuals within and outside the institute. Two independent translators carried forward-translation into Hindi; one was naïve to the subject, and the other was a subject expert. Additionally, back-translation was performed by two independent translators unfamiliar with the matter, thereby preventing any potential bias in the back-translation of the scale. The expert panel (n = 5) involved consultants from urology, obstetrics, and gynecology (including a senior resident who recently finished her training to provide the perspective of a young clinician), psychiatry, and community and family medicine with expertise in treating female sexual dysfunctions in their daily practice. The panelists belonged to the institute and catered to the sexual health/issues of the service users of the hospital. The participants for the preliminary pilot testing were

females aged 18–45, seeking treatment for their mental disorder(s) in the outpatient psychiatric facility of the institute and currently in remission, and their healthy caregivers (healthy volunteers). The translators/experts/potential participants (patients and healthy volunteers) were informed about the purpose of the study, and after obtaining their consent, they were involved in/recruited in the study. We primarily included participants with common mental disorders; the operational definition for common mental disorders (CMD) was mental and behavioral disorders due to the use of alcohol; depressive disorders, neurotic, stress-related, and somatoform disorders (phobic anxiety-, other anxiety-, obsessive-compulsive-, reaction to severe stress, and adjustment-, dissociative-, somatoform-, and other neurotic-disorder) currently in remission of their psychiatric illness. In pilot testing, we also included cases of other affective disorders (bipolar affective disorders type 2 and cyclothymia) in remission of their psychiatric illness. The relevance of incorporating the latter participants was to have a broader representation of the females as this scale was being developed for use in the general population as well as individuals suffering from both the CMDs or other common Severe Mental Illnesses (SMIs).

The study was conducted in accordance with the Declaration of Helsinki, 1975, and the protocol was approved by the Ethics Committee of the institute (IHEC-LOP/2020/IM0312).

Duration of the study: The forward-translation, back-translation, and panel discussion were performed from July to September 2021 (over three months). The preliminary pilot testing (cognitive interview) was conducted from April to September 2022 (over six months). The six months required to complete preliminary pilot testing highlights the difficulty in recruiting motivated participants for conducting cognitive interviews on the pre-final questionnaire.

Instruments used in the study:

Female Sexual Function Index-19 (FSFI-19)

The FSFI consists of 19 questions covering six domains—desire (Q1 and 2), arousal (Q3, 4, 5, 6), lubrication (Q7, 8, 9, 10), orgasm (Q11, 12, 13), satisfaction (Q14, 15, 16), and pain (Q17, 18, 19) [18]. Responses to each question relate to the sexual functioning of the previous month and are scored either from 0 (no sexual activity) or 1 (suggestive of dysfunction) to 5 (representative of normal sexual activity). Individual domain-wise scores are obtained by adding the scores of the individual items of a particular domain and multiplying them by the domain factor as provided in the FSFI scale.

The FSFI has been shown to discriminate reliably between women with and without sexual arousal disorder and with or without orgasmic disorder on each of the six domains: desire, arousal, lubrication, orgasm, satisfaction, and pain, and has validated psychometric properties [8].

The protocol followed for the Hindi-FSFI development:

We followed the World Health Organization (WHO) guidelines on translating and adapting instruments and other seminal works conducted in this area [19,20]. Typically, the translation of a tool to any language includes forward-translation (into the target language), backward-translation (to the original language), expert panel discussion, and preliminary pilot testing (conducting the cognitive interview) (Table 1 and Figure 1).

Process of data collection and analysis:

Two trained female psychiatrists collected the data with a minimum of two years of experience in psychiatry (JJ and SGh).

The process of Hindi FSFI development and the involvement of the participants have been depicted in Figure 1.

Table 1. Depicting the standard protocol for the translation and adaptation of the instrument and the process followed in the current study.

Stage of Translation	Key Aspects [#]	Characteristics of the Current Translation
Forward-translation	<ul style="list-style-type: none"> At least two independent translators should be involved: one naïve and one who knows the subject The discrepancy should be resolved by a third bilingual translator or through mutual discussion Emphasizing conceptual rather than literal translations Simple, concise 	<ul style="list-style-type: none"> Two translators performed the forward-translation: one was new to the concept of sexual functioning (a non-health professional), and the other was aware of the subject (a mental health professional) A third translator, an expert in the subject matter, corrected the discrepancies between the two Hindi-translated versions
Backward-translation	<ul style="list-style-type: none"> By two independent translators. Back-translators should preferably not be aware of the intended concepts the questionnaire measures to avoid bias Misunderstandings or unclear wordings in the initial translations may be revealed in the back-translation 	<ul style="list-style-type: none"> Back-translators were unaware of the subject under study; they belonged to the medical discipline (transfusion medicine) and psychology (a psychologist)
Expert committee discussion	<ul style="list-style-type: none"> Should be the subject expert The prefinal version of the translated questionnaire should be presented along with relevant materials to help them be consistent with previous translations The process of translation and back-translation can be repeated 	<ul style="list-style-type: none"> Experts were provided with a brief background about the subject matter (various domains of female sexual functioning/dysfunction), original FSFI, and context of the current discussion The meeting discussed the Hindi-translated version of the FSFI, along with the comments of the bilingual translator Experts comprised a urologist, an obstetrician, a gynecologist (a senior consultant and a senior resident doctor), a senior psychiatrist, and a faculty from the community and family medicine department
Preliminary pilot testing	<ul style="list-style-type: none"> It should involve 15–30 participants The respondent is asked (verbally by an interviewer or via an open-ended question) to elaborate on what they thought of each item of the questionnaire and its corresponding response Information concerning them is achieved through in-depth personal interviews, although the organization of a focus group may be an alternative The process may be repeated 	<ul style="list-style-type: none"> A total of 15 participants were recruited for the cognitive interview, comprising patients and healthy caregivers. Recruitment was performed by the trained psychiatrist, who was a subject expert They were systematically debriefed They were asked to explain how they chose their answer. These questions should be repeated for each item Any word they did not understand, as well as any word or expression that they found unacceptable or offensive
Documentation	<ul style="list-style-type: none"> Initial forward-translation The back-translation Expert panel discussion Preliminary pilot testing of the scale (cognitive interviewing of the scale) 	<ul style="list-style-type: none"> The translation and pilot testing process were documented in the note sheet, and investigators periodically discussed it

[#] Key aspects have been adopted from the World Health Organization Process of Translation (n.d.) and adaptation of instruments and Tsang et al. (2017) [19]

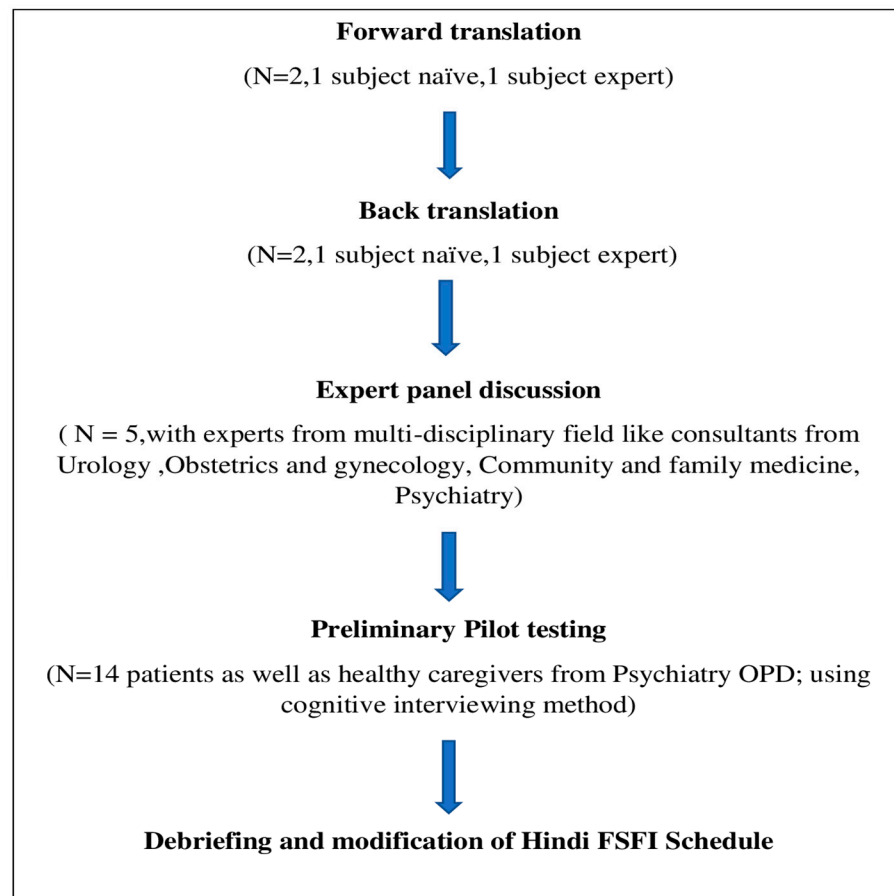
Flow-chart depicting the process involved in translation of Hindi FSFI scale

Figure 1. Depicting the process of development of Hindi-FSFI.

3. Results

The different phases of the study revealed several crucial and insightful findings, which furthered the development of the Hindi FSFI, including various required course corrections. These findings have been presented in terms of the process of the forward-translation into Hindi, back-translation into English, details of the expert panel discussion, and findings of the preliminary pilot testing.

The process and key findings of the development translated Hindi version of the FSFI has been depicted in Figure 1 and Table 1.

3.1. Hindi Forward-Translation

The focus on translation was conceptual rather than merely literal. The discrepancies or differences between the two translations were resolved and corrected by the third independent bi-lingual translator who was well-versed with the subject under study. The third translator was instructed beforehand to identify the terms requiring modifications to convey the intended meaning.

The two versions of the translations were substantially similar, and the third translator only hinted at minor changes in the terminologies and options given for the scale items.

3.2. English Back-Translation

The back-translators identified a few vague phrases in the initial Hindi-translated version. These suggestions were incorporated into the pre-final version of the questionnaire, which was later subjected to the expert panel discussion.

3.3. Expert Panel Discussion on the Pre-Final Hindi Version of the FSFI

Following the translation and back-translation of the FSFI, a panel discussion involving experts from the concerned disciplines was undertaken. Beforehand, experts were provided with the conceptual note mentioning the basics of female sexual functioning, types of sexual dysfunctions in females, the English version of the FSFI, and the intended objective of the panel discussion. Their informed consent was obtained before they participated in the discussion.

The meeting aimed to bring an informed consensus on the various items and their responses in the pre-final Hindi versions of the scale. The overarching focus was identifying confusing, misleading, or redundant words/statements/phrases, establishing their cultural sensitiveness and relevance or ability to capture the concept/idea of the sexual function being assessed. The intended outcome was to arrive at a meaningful consensus on the scale by rephrasing, eliminating words, adding new terminologies that make the scale culturally appropriate, and being able to assess the different domains of female sexual functioning (or dysfunctions).

The discussants had almost equal representation in terms of gender; their age and professional experience ranged from 28 to 45 years and from 2 to 19 years, respectively. The expert panel discussion lasted about 120 min and was coordinated by the principal investigator (SG).

The panelists were presented with the pre-final Hindi scale and the original English version of the FSFI. Their opinion was sought (one by one) on various aspects of the individual item and its responses. We transcribed the feedback of the expert panelist (SSV, SGh, and SG). The transcription was debriefed among the investigators, and the suggestions were incorporated into the updated scale version.

The expert panel provided a detailed review of the pre-final version of the scale, highlighting some of the improvisations required in terms of semantics, the phrasing of the items, and various responses to the individual items of the questionnaire. The changes have been summarized in Supplementary Table S1:

In addition, experts suggested some semantical changes in some of the items of the scale, which have been enumerated below:

- Item 1: '*Sambhog*' (intercourse) to replace '*Yaun*' (sexual desire);
- Item 2: the word '*star*' with word level in the parenthesis to be added to the pre-final Hindi version to capture the level/intensity of sexual desire (*sambhog ki ichcha ka star*);
- Item 5: it was suggested that '*atmavishwas*' would be a better word than '*ashwast*' to represent confidence in being sexually aroused;
- Item 7: to be better able to assess lubrication (wetness), '*Geelapan*' should be preferred over '*Cheeknai*', etc.

It was also opined that responses should be made uniform throughout the scale to improve their comprehensibility, validity, and reliability.

A few questions were rephrased: e.g., in Item 8: 'How difficult was it to become lubricated?' was changed to 'How difficult it was for you to attain/feel lubricated (*Geelapan*) during the sexual activity or intercourse?').

The panel discussion was transcribed. The changes introduced in the questions and options were incorporated into the pre-final Hindi version of the scale. A revised version of the Hindi FSFI was created and forwarded for the next stage of tool development, i.e., cognitive interviewing.

3.4. Preliminary Pilot Testing

After creating the final Hindi-translated version of the FSFI, an in-depth cognitive interview was conducted (by JJ and SGh) involving females visiting the outpatient psychiatric facility of the institute as part of preliminary pilot testing. The purpose of the pilot study was to have a systematic qualitative account of the participants on the various aspects of the pre-final Hindi FSFI, including their reflections on what they inferred from each item of the questionnaire and its responses and why they chose a particular answer. The

cognitive interview also pertained to items' comprehensibility, cultural appropriateness of the terminologies, confusion, if any, with various items or domains of the instrument, and types of responses. The interviewers also clarified participants' doubts, if any, and participants were encouraged to re-analyze the items and reconsider their responses if they wished to.

The pilot testing was followed by the debriefing session among the investigators (SG, JJ, and SGh) concerning the participants' responses to the developed Hindi version of the questionnaire.

3.5. Findings of the Cognitive Interview

About 15 females, involving patients with common mental health conditions and healthy volunteers, were recruited for the preliminary pilot testing of the questionnaire. The participants had a mean age of 31.42, ranging from 20 to 54 years. Most of the patients had attained higher secondary education, with few females also being postgraduates. However, they mostly belonged to the urban background (details in Table 2).

Table 2. Details of the participants of the preliminary pilot testing.

S.No	Age (Years)	Education	Residence	Diagnosis	Treatment	Side Effects
1	20 yrs	Postgraduate	Urban	Panic disorder	Sertraline 100 mg CBT	Decreased libido
2	35 yrs	Graduate	Urban		Healthy volunteer	
3	37 yrs	Graduate	Urban		Healthy volunteer	
4	37 yrs	Graduate	Urban	Adjustment disorder	Non-pharmacological	NA
5	21 yrs	Pursuing graduation	Urban	Mixed Anxiety depressive illness	Desvenlafaxine 150 mg CBT	Nil
6	32 yrs	Graduate	Urban	Anxiety disorder	Escitalopram 10 mg	nil
7	25 yrs	Graduate	Urban	RDD with a current episode of moderate depression with PMDD	Lithium 900 mg Escitalopram 20 mg	nil
8	33 yrs	Graduate	Urban	Anxiety disorder	Escitalopram 10 mg	nil
9	50 yrs	Completed secondary education	Rural	RDD with GAD	Escitalopram 20 mg Propranolol	nil
10	34 yrs	Graduate	Urban	Depressive disorder	Escitalopram 15 mg	nil
11	32 yrs	Graduate	Urban		Healthy volunteer	
12	32 yrs	Graduate	Urban	Depressive disorder	Escitalopram 15 mg	nil
13	32 yrs	Pursuing post-graduation	Urban	Cyclothymia with binge eating disorder	Oxcarbazepine 900 mg Atomoxetine	nil
14	35 yrs	Graduate	Rural	BPAD	Lithium 900 mg	nil
15	47 yr	Completed secondary education	Rural	Healthy volunteer	NA	NA

(BPAD—Bipolar affective disorder, CBT—Cognitive behavioral therapy, GAD—Generalized anxiety disorder, NA—not applicable, PMDD—Pre-menstrual dysphoric disorder, RDD—Recurrent depressive disorder).

The common mental health disorders participants suffered include panic disorder, adjustment disorder, mixed anxiety depressive disorder, recurrent depressive disorder, generalized anxiety disorder, cyclothymia with binge eating disorder, and bipolar affective disorder. Few were being treated with selective serotonin reuptake inhibitors (Sertraline, Escitalopram), selective serotonin-norepinephrine reuptake inhibitors (Desvenlafaxine), and mood stabilizers (Lithium, Oxcarbazepine) with or without non-pharmacological interventions.

3.6. Debriefing of the Findings of Cognitive Interviewing

Based on the information obtained from the cognitive interview and participants' feedback, it was felt that the current version of the Hindi FSFI scale requires some fundamental semantic, linguistic, or contextual changes for it to be applicable across the different strata of the Indian population. The findings that emerged from the preliminary pilot testing have been described below (for details refer Supplementary Table S2):

- The authors discussed that the wordings of the Hindi FSFI questionnaire seem technical and complex; therefore, the general population may find it difficult to understand. Moreover, in India, we often use English words during routine conversations in Hindi to describe our experiences (excitement for *uttejna*, sex for *Sambhog*, etc.); the same pattern can be used in the questionnaire to make it more comprehensive and utilitarian. The latter will enhance the scale's utility in research and clinics.
- The investigators agreed that the various terms or ideas being studied might appear overlapping or confusing to the participants; hence, as a part of general instruction, the following information may be added—"Participants are encouraged to refer to original definitions of various concepts or terms related to sexual functioning and as and when required they may clear their doubts from the investigator".
- Notably, it was found that the scale lacked a definition of orgasm, which would otherwise be crucial for the participant's understanding of this domain of sexual functioning. Hence, the same needs to be placed in the instruction section. Additionally, an alternative term for sexual excitement was adopted.
- It was also observed that the education status of the participants had a bearing on their responses to the questionnaire, with well-educated participants having a better understanding of questions and being less hesitant in responding. Therefore, this disparity needs to be addressed.
- Strikingly, it was deliberated that the responses from females who had never engaged in the penetrative sexual act relied upon sexual experiences from either sexual fantasy or self-stimulatory activities; hence, they faced difficulty understanding items that dealt with pain during the sexual act (such as Q17, 18, 19). Moreover, the relevance of the latter items for them was limited. Therefore, it was felt that the assessment of these items needs to be informed by the current sexual practices of the respondent and may be discussed separately at a later stage.
- Lastly, the opinion of an expert in sexual medicine, a knowledgeable bilingual translator, was also sought for accurate and better representative words for sexual stimulation. The expert opined that '*yaun-uksav*' is a better word than *yaun uttejna* to assess sexual stimulation.

4. Discussion

The current study was undertaken to develop a Hindi-translated version of the FSFI and to illustrate the challenges faced at various stages of the translation and pilot-testing and possible ways out. The present study followed a standard protocol for translating and adapting the original scale into different native languages. The scale development process yielded some critical observations and key findings that informed us how to develop or revise the scale at various stages. The major research findings of the current study include the requirement of semantic and grammatical changes in the translated Hindi version of the instrument and rephrasing the sentences to improve comprehensibility and applicability in the Indian population, as emerged during the expert panel discussion. The cognitive interviewing (preliminary pilot testing) additionally informed us of the need to use alternate or more than one word to capture a concept, including English words written in Hindi. These findings are in line with the existing literature on translation and adaptation of a scale in the native language [15,17]. They will add to the limited literature on the area of scale development for assessing sexual functioning. Below, we have discussed the strengths of the current process of translating the FSFI (into Hindi), the challenges we experienced during the tool development, and future directions for conducting such research.

4.1. Strength of the Current Procedure of FSFI-Hindi Tool Development

The present Hindi-translation of the FSFI had specific advantages, thus, making it replicable in different settings and populations. The strengths of the process of translation and subsequent pilot testing have been enumerated below:

- *Involvement of the bi-lingual translator at an early stage of the translation:* We involved a bi-lingual translator early, i.e., at the stage of forward translation, who also has some understanding of female sexual functioning. The bi-lingual translator helped us identify the most suitable translation of the original FSFI. Literature suggests that the early involvement of bi-lingual translators who also know the subject matter in the scale translation improves the accuracy and robustness of the translation [15];
- *A detailed description of the process of translation of FSFI:* The greatest strength of the current research work lies in its procedural richness, which includes the detailed qualitative findings of various translation stages and how it informed us in refining the translated version of the FSFI. The in-depth cognitive interview process and its implications for the translated tool would notably be a valuable addition to the existing literature on this topic.
- *Involving a comprehensive and representative expert panel:* As the topic under study involves diverse, yet interrelated, disciplines, such as obstetricians and gynecologists, urologists, community medicine specialists, and mental health professionals, we had a representative experts panel who could provide a diverse and nuanced picture of the female sexual functioning. Research shows that the involvement of a multidisciplinary team to evaluate the translated version of the original scale is instrumental in developing a culturally valid and reliable assessment tool [15]. In addition, the multidisciplinary panel could inform us about the typical terminologies, grammar, key concepts, and culturally sensitive issues of female sexual practices and associated dysfunctions.
- *Robust cognitive interview:* We also performed sound cognitive interviews during the preliminary pilot testing of the developed Hindi FSFI. Data represent that researchers often do not conduct adequate pilot testing of the translated instrument; this can subsequently influence the validity and reliability of the tools [16]. Therefore, our approach was crucial in developing a robust Hindi FSFI. We involved persons with common mental disorders, with or without sexual dysfunctions, persons with severe mental illnesses, and healthy volunteers who could inform us about the validity of individual items in capturing the different domains of sexual functioning. Such an approach could widen the scope or utility of the Hindi FSFI across the populations in India.
- *An iterative approach to final tool development:* We followed a meticulous method to appropriately and timely update the subsequent versions (updating the item sentencing, semantics, voices, response categories, etc.) of the translated tool by considering the inputs of the key stakeholders. This approach concurs with guidelines/standards on the translation and adaptation of the original tools into a given language [15,16,21]. The latter becomes particularly critical when there is a profound stigma attached to the topic under study, and there is significant diversity among the females in reporting their sexual (dys)functioning. Moreover, such a technique is vital to consider the concepts, terminologies, and practices across the disciplines (e.g., for a female complaining of vaginismus to urologists vs. gynecologists vs. psychiatrist). Furthermore, we modified the instruction of the Hindi FSFI to make it relevant and valuable for our population. Researchers have highlighted that while developing the translated version of the original scale, the instructions of the original scale should also be looked at and handled as per the needs of the population or cultures to which it is to be applied [16,17].

4.2. Challenges Faced at Various Stages of the Development of the Hindi FSFI

- *At the level of forward-translation and back-translation:* Although we involved both lay translators as well as translators who were aware of the subject matter, the inherent limitation of the topic (of female sexual functioning) with much less discussion in day-to-day life, might have impacted initial Hindi forward-translation. Having a professional Hindi translator on board with some awareness about the subject could have been more helpful. In addition, although we obtained the initial two Hindi-forward translated versions vetted by a third bilingual translator, an alternative approach where the initial translators discussed their translations and came up with a consensus translation could have better informed us of the linguistic nuances of sexual functioning.
- *At the level of the panel discussion:* The panel meeting held was an attempt to reach researchers and clinicians who had maximal interactions on a routine basis with females presenting with sexual issues. However, despite the best efforts, there could be some shortcomings in the panels' composition or discussions. One of the main limitations of the panel discussion was that none of the panelists was a sexual or psychosexual medicine expert or runs a dedicated sexual medicine clinic at the institute. Therefore, the opinion of the experts was personal and based on the prevalent practices of their disciplines. Hence, we might not have found the most familiar or accurate terminologies or phrases for a given sexual function domain.

Additionally, involving persons with lived experience of sexual dysfunction and having considerable awareness about the topic could have been more enriching.

Although the experts who attended the meeting had a deep insight into both the subject and the language, the panel lacked a translator proficient in Hindi literature. Moreover, it was felt by the panel that the English terminologies had restricted translations to refined Hindi literary words; therefore, the translated Hindi version could be complex for the lay Hindi-speaking population to comprehend.

- *At the Level of Conducting a Cognitive Interview:* While conducting the cognitive interview, we often found that participants faced or expressed stigma related to the topic being studied. Although recruitment was done after a few follow-ups when patients' mental health problems were under control and a good working relationship between the patients and psychiatrist was established, the investigators faced difficulty building rapport with some of the participants. The participants were often concerned about the purpose of the study and confidentiality-related clauses. Such apprehension or uneasiness resulted in a high non-participation rate or hesitancy in their responses. In addition, it was often seen that participants would have difficulty understanding the differences between different subsets of questions, such as in Q12 (Over the past four weeks, when you had sexual stimulation or intercourse, how difficult was it for you to reach orgasm (climax)), most participants misunderstood the underlying theme as sexual capacity when it intended to assess the factor of orgasm (difficulty in the attainment of orgasm). Such challenges in understanding the questionnaire can be attributed to a lack of sexual knowledge, variations in the terminologies used in the Hindi language and regional dialects across Madhya Pradesh (Bundelkhandi or Bagheli), and either unawareness about the experience of orgasm or never being able to experience it. A qualitative study to identify the keywords, phrases, concepts, and ideas related to sexuality in the community could be a prudent approach to fill this gap before going for more detailed epidemiological research for tool development.

4.3. Limitations of the Current Study

The present study has certain notable limitations. Firstly, we did not involve professional translators for logistic reasons, which could have provided more appropriate phrases to capture various concepts of female sexual functioning. Secondly, involving a bilingual translator with lived experience would have been valuable. Thirdly, we did not apply

the revised Hindi FSFI, obtained from post-cognitive interviews, on some participants, which could have helped us further refine the scale. Lastly, the current study did not explore the psychometric properties of the Hindi FSFI. The latter could have made this study more comprehensive, including providing factor structure of the scale, and expanded our understanding of female sexual functioning in the Indian context.

4.4. Future Directions

The current study can inform researchers involved in translating tools in the regional vernacular about the appropriate translation method and conducting cognitive interviewing. Furthermore, it guides social scientists regarding the possible challenges of translating an instrument, particularly on a culturally sensitive topic for which common language expressions are usually lacking.

Developing the translated version of the FSFI can facilitate more significant research in this area, particularly in low- and middle-income countries such as India. The nuances of developing tools in different languages can provide an opportunity for more excellent interdisciplinary dialogue and research collaborations; moreover, it can encourage clinical care for individuals suffering from sexual disorders. Having a common language to discuss sexual practices and functioning between doctor–patients and clinicians can help reduce stigma related to the sexual functioning of the population and make it culturally relevant. A thorough translation process is a crucial step for the subsequent assessment of the psychometric properties (validity and reliability) of the developed tool. Greater research must be undertaken to widen our understanding of the topic.

5. Conclusions

The magnitude of female sexual dysfunctions is enormous among the general population. The problem is higher among females suffering from anxiety, depression, stress-related disorders, and other common mental health conditions. However, it is an under-searched topic, particularly in certain geographical regions, and one of the crucial reasons behind this is the non-availability of validated instruments in native languages. This paper highlights the development process of the translated Hindi version of the FSFI. The manuscript underscores the critical steps of the translation of the original instrument in the native language, the practical challenges at different phases of development of such a tool, and how the process can be made robust. We found that there were requirements for semantic and grammatical changes in the translated Hindi version of the instrument and rephrasing of the sentences to improve comprehensibility and applicability in the Indian population, as emerged during the panel discussion. The cognitive interviewing, additionally, informed us of the need to use alternate or more than one word to capture a concept, including English words written in Hindi.

This work also emphasized the significance of language and idioms of distress in the expression of the sexual functioning(dys-) of an individual. The study informed us that, to develop a translated scale, a diligent tool development approach is needed. The latter includes having a professional target language translator with some idea about the topic being researched, building a mutual consensus among the translators involved in the forward-translations along with getting them vetted by a third bi-lingual translator, having a representative panel of experts with an expert proficient in the native language, and need of a good rapport between participants and researchers, to name a few. It also demonstrated how inadequate awareness of the subject, lack of comprehensive terminologies, and significant stigma attached to the subject (among the participants/patients) can be critical roadblocks.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/psychiatryint4020018/s1>.

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