Adaptation and validation of Bangla version of Premature EjaculationDiagnostic Tool

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Abstract

Premature Ejaculation is one of the most common causes of male sexual dysfunction with prevalence rate of 20% to 30% in different studies across the world. Premature ejaculation causes severe anxiety, embarrassment, and depression and relational conflicts. Diagnosing Premature Ejaculation can be problematic due to multidimensional nature of the disease. Premature Ejaculation Diagnostic Tool (PEDT) is a psychometrically valid tool for this purpose. This was a cross-sectional, analytical study and was conducted at Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka. The English version of the PEDT was forward and back translated. An expert committee reviewed the translations and shared their feedbacks and opinions regarding the proposed Bangla questionnaire. Bangla version of Premature Ejaculation Diagnostic Tool was applied to 51 patients after obtaining informed consent. The test was undertaken again after seven days. Validity (Content validity, Face validity, Factor analysis) and reliability (Internal consistency, and test–retest reliability) were assessed. The expert committee expressed their satisfaction regarding Face and Content validity of the questionnaire. Factor Analysis by Principal Component Analysis revealed that the questionnaire had high level of commonalities among the items and yielded a single component model like the original version. Cronbach's Alpha (α) value of 0.827 indicated good level of internal consistency. Intra-class Correlation Coefficient and Spearman's rho (0.94 and 0.87 respectively) indicated significant correlation between test and retest scores. Results were congruent with findings of similar studies. The Bangla version of PEDT is a valid and reliable scale. It will help to identify patient suffering from premature ejaculation and improve quality of life of the patient and his partner.

Introduction

As the dominant species of this planet, we humans are making great discoveries and embarking on fascinating explorations beyond the limits of earth. Yet, the basic human instincts remain the same as our ancestral prehistoric man. Sexuality dictate the various aspects of our society ranging from art and culture to product marketing. At personal level, human sexuality is a basic force that can affect every aspect of life. Sexual function can be closely coupled to quality of life. Therefore any deviation can have significant impact on the person and their partner.

Studies have characterized Premature Ejaculation (PE) as the “most common male sexual dysfunction,” with a prevalence rate of 20–30%. Despite the alarming rate of prevalence and its significant impact, Giuliano concluded that PE is under diagnosed. Diagnosing Premature Ejaculation poses several challenges. In clinical trials, stopwatch measured Intravaginal Ejaculatory Latency Time or IELT, is often used. In clinical practice, it is not practical for patients to provide a stopwatch measured IELT, so IELT must be provided as a self-estimate. However, it is unclear whether estimated and measured IELT provide the same information. Individuals may be hesitant about seeking help due to stigma associated with this disease. Men with PE and their partners reported a significant negative impact of the condition on themselves and their relationship. Lack of ejaculatory control results in dissatisfaction and great emotional distress, including feelings of inadequacy, disappointment, anxiety and depression. Continued Premature Ejaculation can ultimately leads to problems with partners and often disrupts partner relationships. PE
keeps patients from attaining complete intimacy in their relationships even when their partners were generally satisfied with sexual intercourse. Impacts of PE on sexual satisfaction, emotional distress and partner relationships are consistent across countries.3 However, most men with PE do not seek help.7

Men are often reluctant to discuss it with their physicians, often due to embarrassment or the viewpoint that nothing will help.4 In Bangladesh, the situation is further complicated by several factors. First of all, there is widespread misconception about sexuality in both general and patient population. Anything related to sex is considered Taboo. Recent initiative to incorporate much needed sex education in school curriculum has been resented by different quarters as a threat to the conservative structure of the society.8 It was found that 92% of patient attending a sex therapy clinic in Bangladesh had misconception about various aspects of normal sexuality.9 Like India, In Bangladesh patient most frequently seek help from traditional healers, canvassers, and ‘quacks’ and such behavior can add self-perpetuating, iatrogenic disorders.9,10 Moreover, Bangladesh has very low doctor to patient ratio among developing nations11,12 and physicians are often burdened with work. A survey done among postgraduate trainees at BSMMU, revealed that nearly one-third of responded were uncomfortable about asking sexual history. Responders also acknowledged their possible knowledge gap and fear of offending patients by asking about sexuality.13 Considering these factors, patients with premature ejaculation may remain undetected. Premature Ejaculation Diagnostic Tool (PEDT) was developed with the aim of being a brief, multidimensional, psychometrically validated instrument for diagnosing PE status.14 Bangla version of PEDT will add standardization of diagnosis and help clinicians in addressing the multi-factorial nature of premature ejaculation. The tool is a brief and easy to use as a patient reported outcome measure that will help to identify the patients and facilitate their proper treatment.

The adaptation process
The PEDT questionnaire was translated into Bangla by two persons having competency on both Bangla and English. A translation was done by a psychiatrist (T1) and second one was done by non-medical person (T2). The Two translations were synthesized into one translation (T-12). Any discrepancies of the translator’s reports were resolved. (T-12) was translated back to the original English version by two translators. An Expert committee review Members: (4 psychiatrists, 2 translators, a language professional) reviewed all the reports and produced pre-final version. Final version was produced after pretesting pre-final version and approved by the expert committee. Expert committee emphasized for thematic interpretation rather than literal translation. Committee also opted for defining and describing ‘Ejaculation’ within the questioner in an explicit manner to avoid any ambiguity. (Figure-2)

Participant
Sample size was calculated using method suggested by Walter et al.15 Target sample size of 51 was set and data collected from 51 patients attending Psychiatric Sex Clinic, BSMMU. Informed consent was taken prior data collection. Socio-demographic data were collected using a structured questionnaire in Outpatient Department (OPD) of Dept. of Psychiatry, BSMMU. Bangla speaking male patients aged 18-60 years suffering from premature ejaculation were selected as study population. Persons with erectile dysfunction, acute medical and psychiatric illness were excluded. Participant were asked to retake the questionnaire after 7 days.

Psychometric Properties
Reliability
Internal consistency: To find out the degree to which items in PEDT are related to each other, the researcher calculated Cronbach’s alpha to find out internal consistency.

Test-retest reliability: The participants were assessed again during their follow-up in seven days. Spearmen coefficient and Intra-class Coefficient were calculated for determining Test-retest reliability.

Validity
Content and Face validity: Experts committee i.e. (psychiatrists having competency on both Bangla and English, translators, language professional) reviewed the Bangla version of PEDT and provided their valuable opinion about the content and about the face validity.

Factor analysis: Before performing factor analysis, Kaiser – Meyer Olkin Measure of Sampling Adequacy was calculated. Exploratory Factor Analysis (EFA) was done based principal component method with varimax rotation. Commonalities between the items before and after extraction were calculated.

Methods
Premature Ejaculation Diagnostic Tool
The PEDT (Figure- 1) is a validated instrument for diagnosing premature ejaculation in both research and clinical setting. It was developed by Tara Symonds and her colleagues.14 It is based on the Diagnostic and Statistical Manual of Mental Disorder IV- TR definition of premature ejaculation. It comprises of five questions, each having liker scale like answers. A score ≥11 is suggestive of premature ejaculation and score 9-10 is suggestive of probable PE. The tool has been psychometrically tested for validity and reliability and has been used for multiple clinical trial and population survey.

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Results

Socio-demographic characteristics of respondents

Data were collected from 51 respondents with a mean age of 34.8 (±8.66) years with a range between 24-60 years. They were mostly from urban background (65%). Other socio-economic data are presented in Table - I.

Validity assessment

Face validity, content validity was systematically assessed and maintained during the development of the research instrument.

Construct validity

Construct validity was assessed by Exploratory Factor Analysis (EFA) of the principal component with varimax rotation & internal consistency. Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy to determine the fitness of data for factor analysis was 0.77. A value of ≥0.5 of KMO is considered as a good sampling adequacy. It showed high commonalities between the items before and after extraction (Table-II). The varimax rotation (Table III) showed, only one component was extracted. The solution could not be rotated that signified high internal consistency of the Bangla version of PEDT.

| Characteristics     | Number of patients | Percentage |
|---------------------|--------------------|------------|
| Unmarried           | 05                 | 10         |
| Married             | 41                 | 80         |
| Divorced/Separated  | 05                 | 10         |
| Illiterate          | 03                 | 05.9       |
| Primary             | 09                 | 17.6       |
| Secondary           | 12                 | 23.5       |
| Higher secondary    | 06                 | 11.8       |
| Graduate/Post Graduate | 21              | 41.2       |
| Unemployed          | 02                 | 08.9       |
| Student             | 04                 | 07.8       |
| Farmer              | 05                 | 09.8       |
| Businessman         | 09                 | 17.6       |
| Service Holder      | 27                 | 52.9       |
| Others              | 04                 | 07.8       |

Table-II

| Question | Test | Initial | Extraction |
|----------|------|---------|------------|
| 1        | 1    | 1.000   | 0.635      |
| 2        | 1    | 1.000   | 0.512      |
| 3        | 1    | 1.000   | 0.592      |
| 4        | 1    | 1.000   | 0.629      |
| 5        | 1    | 1.000   | 0.612      |

Extraction Method: Principal Component Analysis
The internal consistency of PEDT was measured by Cronbach’s Alpha (\( \alpha \)) and the value was 0.83. Cronbach’s Alpha (\( \alpha \)) ranges from 0 to 1 and a value of ≥ 0.70 is considered as good reliability. Test-retest correlation was measured by spearman rho; significant association is observed between two tests with Sperman’s rho value for total score was 0.87 (p<0.001) (Table – IV). Intraclass correlation coefficient was calculated as .943.

**Table-III**

| Component 1 | Question 1 | 0.797 | Question 2 | 0.716 | Question 3 | 0.770 | Question 4 | 0.793 | Question 5 | 0.782 |
|-------------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|

Extraction method: Principal component Analysis

1 component extracted.

**Table-IV**

|                  | Spearman’s rho | p value |
|------------------|----------------|---------|
| Q1               | 0.55           | 0.002   |
| Q2               | 0.66           | <0.001  |
| Q3               | 0.78           | <0.001  |
| Q4               | 0.64           | <0.001  |
| Q5               | 0.85           | <0.001  |
| Total score      | 0.87           | <0.001  |

**Figure-1:** English version of PEDT

**Figure-1:** Bangla version of PEDT
Discussion

Scientific knowledge must be based on facts which are measurable, testable and reproducible. Psychometrics was developed to comply with these principles by objectifying behavioral science. Today, psychometrics plays an important part in psychiatry, public health and even in marketing. Premature Ejaculation Diagnostic Tool is an internationally validated tool to screen patients suffering from premature ejaculation. There was no psychometrically validated tool to be used among Bangla speaking population for this purpose.

Among the fifty one participants, most of them were between 30-40 years of age (39%) with mean age of 34.80 year with SD ±8.66. This is similar to finding during validation of Iranian Version of the PEDT (Mean Age 35.36 year, SD ±7.55). Education is an important factor affecting psychosexual disorder. In current study, most of the participants were found to be graduate or above. This not reflective of demographic profile of Bangladesh. However, this can be due to the fact that ignorance, prejudice and stigma affect the help seeking behavior of patients. Previous studies have found that people in Bangladesh usually seek treatment from quacks or traditional healers. Better education may have encouraged patients to seek medical help rather than traditional methods. Participants were mostly married (n=41, 80%). Among the age group (20-60 year) of the study, this result is expected as rate marriage among male above 10 years is 60% according to Bangladesh Bureau of Statistics and Informatics Division. Moreover, due to conservative stance of the society, if sexual problems do occur outside of wedlock, patients may either be reluctant to seek help or may declare themselves as married. Patients were from nuclear family, conforming to current trend of social structure.

Though Bangladesh is still rural based, in this study urban population were more than rural population (65% vs. 35%). As the study centre is situated in the capital, this trend can be explained by the ease of access for the participant and also other socio-demographic variables.

In this study, face validity, content validity was systematically assessed and maintained during the development of the research instrument. KMO & Barlett’s test of Sphericity was applied to the fitness of data for factor analysis. KMO was found to be 0.77 in this study. It indicates sampling adequacy required for factor analysis.

Construct validity was assessed by Exploratory Factor Analysis the principal component with varimax rotation to detect the factorial structure in observed measurements. It showed high commonalities between the items before and after extraction. The varimax rotation showed, only one component was extracted. The solution could not be rotated that signified high internal consistency of the Bangla version PEDT. The original instrument and Korean, Turkish translations also had a single component.

Extract communalities estimates of the variance in each variable accounted for by the factors in the factor solution. Small values indicate variables that do not fit well with the factor solution, and should possibly be dropped from the analysis. If one or more variables have a value for communality that is less than 0.50, the variable with the lowest communality should be excised and the principal component analysis should be computed again. In this study, all items were above the acceptable margin and did not need further assessment.

To test internal consistency, The Cronbach’s Alpha was used and it was 0.827 (When interpreting Cronbach’s Alpha (α), it ranges from 0 to 1. A value of ≥ 0.70 is reflects good reliability). This result is higher than the original instrument (0.71). A potential explanation for this disparity may be that the estimation of Cronbach’s alpha is affected by the sample size. Indeed the Iranian validation study with similar sample size revealed high Cronbach’s Alpha (α).

Test-retest reliability is an important aspect of psychometric property of a questionnaire. Researchers found that there were significant correlation between the two tests. Spearman correlation was found to be 0.87 for total score. During the Turkish validation study, spearman correlation coefficient was estimated at 0.89 and the Korean version had r=0.88. However, the original version had lower level of coefficient (0.73). Current study participants were younger than that of original study (34.8 vs. 44 years). Different researches have shown that younger men might be more stable in terms of their ejaculatory function and control compared to older men. This may have affected their retest answers. The Iranian study with younger patients (mean age 35.36 years) had similar result with high significance. This is somewhat supported by another study of the original research group where test-retest reliability of the PEDT (ICC = 0.88) was higher in younger patients compared with older patients.

Intra Class Correlation was found to be 0.943. To ensure reliability, a value > 0.71 is considered as substantial. Moreover sample size was calculated for the current study was estimated with presumptive ICC of 0.8 or above. This result also reaffirms the sample size calculation.

It can be inferred from the results of evaluation of the Bangla version of PEDT that the adapted tool possesses good psychometric properties. This validated scale will be helpful to screen and diagnose patients with premature ejaculation.

Conclusion

Sexuality is woven in to the fabric of our humanity. Premature Ejaculation being one of the common sexual disorder, affects not only the male but also their partners. Wide spread misconception prevailing in our society amplify the problem further. Patients often are reluctant to seek appropriate care. When they do come out for help, they are again lost in the labyrinths of informal healthcare system. Physicians may also be hesitant in seeking information about sexual health. Developed by Symonds et al. for the assessment of PE, the PEDT represents a quantitative measure for the assessment of PE that overcomes traditional limitations of previous measures. The
psychometrically validated Bangla version of Premature Ejaculation Diagnostic Tool will hopefully bridge the treatment gap by identifying patients in need of care.

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**Ethical Issue**

This study was approved by the institutional review board of Bangabandhu Sheikh Mujib Medical University, (BSMMU/2016/5323) Dhaka, Bangladesh. All participants signed an informed consent to participate in the study.

**Conflict of Interest**

The authors declare no conflict of interest

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**References**

1. Arrington R, Cofrancesco J, Wu AW. Questionnaires to measure sexual quality of life. Qual Life Res. 2004;13(10): 1643–58.
2. Moreira ED, Brock G, Glasser DB, Nicolosi A, Laumann EO, Paik a et al. Help-seeking behaviour for sexual problems: the global study of sexual attitudes and behaviors. Int J Clin Pract. 2005;59(1):6–16.
3. Fasolo CB, Mirone V, Gentile V. Premature Ejaculation: Prevalence and Associated Conditions in a. J Sex Med. 2005;2(3):376–82.
4. Giuliano F, Patrick DL, Porst H, La Pera G, Kokoszka A, Merchant S et al. Premature Ejaculation: Results from a Five-Country European Observational Study. Eur Urol. 2008;53(5):1048–57.
5. Rosen RC, McMahon CG, Niederberger C, Broderick G, Jamieson C, Gagnon DD. Correlates to the clinical diagnosis of premature ejaculation: results from a large observational study of men and their partners. J Urol. 2007 Jan 31;177(3):1059–64; discussion 1064.
6. Revicki D, Howard K, Hanlon J, Mannix S, Greene A, Rothman M. Characterizing the burden of premature ejaculation from a patient and partner perspective: a multi-country qualitative analysis. Health Qual Life Outcomes. 2008;6(33):1–10.
7. Hatzimouratidis K, Amar E, Eardley I, Giuliano F, Hatzichristou D, Montorsi F et al. Guidelines on Male Sexual Dysfunction : Erectile Dysfunction and Premature Ejaculation. Eur Urol. 2010;57(5):804–14.
8. Bhuiyan MK. Inclusion of Sex Education in School Curriculum of Bangladesh: Parents’ Attitude. IOSR J Res Method Educ. 2014;4(5):32–40.
9. Majumder K, Rahman MM. A prevalence study of various malepsycho-sexual dysfunctions and problems among individuals attending psychological services in a sex therapy clinic. In: Bangladesh Psychological Studies. 2004. p. 71–88.
10. Rao TSS. Some Thoughts on Sexualities and Research in India. 2004;46(1):3–4.
11. Ahmed SM, Alam BB, Anwar I, Begum T, Huque R, Khan JAM et al. Bangladesh Health System Review. Health Syst Transit. 2015;5(3):1–24.
12. World Health Organization. WHO | World Health Organization. Global Health Observatory data repository. 2014.
13. Ahsan M, Arafat S, Islam T. Survey on sexual history taking competency among the clinicians of bangladesh. In: 2nd annual conference of South Asian Society of Sexual Medicine. Dhaka; 2015.
14. Symonds T, Perelman MA, Althof S, Giuliano F, Martin M, May K et al. Development and Validation of a Premature Ejaculation Diagnostic Tool. Eur Urol. 2007;52(2):565–73.
15. Walter SD, Eliaziw M, Donner A. Sample size and optimal designs for reliability studies. Stat Med. 1998;17 (April 1997):101–10.
16. Pakpour AH, Yekaninejad MS, Nikoobakht MR, Burri A, Fridlund B. Psychometric properties of the iranian version of the premature ejaculation diagnostic tool. Sex Med. 2014;2(1):31–40.
17. Bangladesh Bureau of Statistics. Gender Statistics of Bangladesh 2012. Dhaka; 2013.
18. Serefoglu EC, Cimen HI, Ozdemir AT, Symonds T, Berkutas M. Turkish validation of the premature ejaculation diagnostic tool and its association with intravaginal ejaculatory latency time. Int J Impot Res. 2009;21(1):139–44.
19. Kam SC, Han DH, Lee SW. The Diagnostic Value of the Premature Ejaculation. 2011;865–71.
20. Arafat SMY, Chowdhury HR, Qusar MS, Hafez MA. Cross Cultural Adaptation &amp; Psychometric Validation of Research Instruments: a Methodological Review. J Behav Heal. 2016;5(3):129–36.
21. Symonds T, Perelman M, Althof S, Giuliano F, Martin M, Abrahm L et al. Further evidence of the reliability and validity of the premature ejaculation diagnostic tool. Int J Impot Res. 2007;19(5):521–5.