

# Distribution and relation of arousal to ejaculatory latency time, erection to ejaculation latency time, and intravaginal ejaculation latency time in Indian men: A pilot study

Shubham Jhanwar, Jitendra Rohilla\*

Department of Psychiatry, All India Institute of Medical Science, Rishikesh, Uttarakhand, India

\*E-mail: jitendra.psyc@aiimsrshikesh.edu.in

## ABSTRACT

**Introduction:** Arousal to ejaculation latency time interval (AETI) and erection to ejaculation latency time interval (EETI) are new tools used to measure ejaculatory latency time (ET). Unlike intravaginal ejaculation latency time (IELT), they are applicable for sexual activities other than penovaginal intercourse and do not require penetration. We assessed the distribution and relation between AETI, EETI, and IELT in Indian men.

**Methods:** Voluntary participation was sought to recruit subjects reporting premature ejaculation (PE) and normal ejaculation. Those able to record the ETs correctly were then asked to record their ETs for two subsequent sexual events.

**Results:** A total of 26 subjects (13 – normal and 13 – PE) were able to complete the study. The mean age of the participants was  $29.85 \pm 4.8$  years, with no difference seen between the two groups. The mean AETI, EETI, and IELT were  $817 \pm 592.016$  s,  $726 \pm 566.346$  s, and  $582 \pm 450.859$  s, respectively, in normal subjects. PE subjects had significantly lesser mean ETs, AETI  $80.62 \pm 24.74$  s, EETI  $53.46 \pm 25.441$  s, and IELT  $21 \pm 14.785$  s. Regression analysis found that 131.67 s of AETI and 99.58 s of EETI were equivalent to 60 s of IELT.

**Conclusions:** AETI and EETI have positively skewed distribution similar to IELT. Premature ejaculators had less difference between AETI and EETI, suggesting that sexual cycle gets completed immediately following arousal in these subjects causing PE.

## INTRODUCTION

Premature ejaculation (PE) is the most common among ejaculatory disorders and one of the most common sexual disorders.<sup>[1]</sup> It can negatively impact many aspects of a man's life such as reducing self-esteem, deteriorating relationships, and causing anxiety, embarrassment, and depressed feelings.<sup>[2]</sup> Men suffering from premature ejaculation are mostly unable to explain their impaired sexual life as they find it shameful to express it to anyone.<sup>[3]</sup>

The definition of PE has gone through various changes with time. While DSM-III definition for PE had the criterion of “control over ejaculation” but “not ejaculation time,” DSM-III-R, DSM-IV, and DSM-IV-TR definitions included the criterion of time but not control.<sup>[4,5]</sup> DSM-V and ICD-10 have used both criteria, “inability to control ejaculation” and “intravaginal ejaculation latency time (IELT) <1 min” to define PE.<sup>[6,7]</sup> Although IELT is considered the gold standard for measuring ejaculation time, it is not applicable for other acceptable ways of sexual activities which has ejaculation

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phase but not penovaginal intercourse. Till recently, there was no quantitative tool to measure ejaculation latency to assess the complaint of early/delayed ejaculation in these subgroups. The new tools conceptualized to address the above issue are arousal to ejaculation latency time interval (AETI) and erection to ejaculation latency time interval (EETI). Bhat *et al.* have studied AETI and EETI among medical practitioners in India and compared those having normal ejaculation (NE) with premature ejaculators. As IELT was not measured in the above study, it is not known whether AETI and EETI correlate with IELT and can be used instead of IELT in measuring ejaculatory latency.<sup>[8]</sup> In the above scenario, we planned this pilot study to assess AETI, EETI, and IELT in the general population.

## METHODS

### Study population

Voluntary participation from men living in the local community was sought through an advertisement printed on a pamphlet and distributed with the local newspaper. The study was initiated after obtaining approval from the institutional ethics committee (Letter No. AIIMS/IEC/20/570). After obtaining informed consent, subjects were asked to report their ejaculatory latencies as early/normal/delayed. An equal number of subjects reporting NE and premature ejaculation (PE) were recruited in the study. Those reporting difficulty in erection were excluded from the study.

AETI is the time taken to ejaculate following the sexual arousal, wherein the participant was considered sexually aroused when he felt his intense desire to perform the sexual activity following erotic stimulation. The stimulation was achieved by the partner, by audiovisual methods, or both.

EETI is the time taken to ejaculate following a sustained erection in a sexual context, which occurred following erotic stimulation. The stimulation was achieved by the partner, by audiovisual methods, or both.

### Measurements

Subjects were educated using images about stages of the normal sexual cycle and how to identify different points for measurement of AETI, EETI, and IELT. They were also given a tutorial on how to use the stopwatch app in their smartphone to measure various ETs and save their recording.

Participants were explained about stages of sexual cycle and how to use stopwatch lap feature to mark time: first, initiation of arousal was marked by intense desire to perform the sexual activity following erotic stimulation and beginning of erection; second, by tapping “lap/split” option following a fully sustained erection; and third, by tapping “lap/split” option in mobile stopwatch app after ejaculation. Investigators assessed the accuracy of the first measurement

provided by each of the subjects and addressed any difficulty encountered by them. Subjects who were able to record the ejaculatory latency times (ETs) correctly were asked to give the recording of ETs for subsequent two sexual events. A minimum of three measurements were completed by each subject. The second and third measurements were included in the data analyzed to produce the result.

### Statistical analysis

Mean value and standard deviation were calculated. The difference between the means was reported considering the value of  $P < 0.05$  as statistically significant. Histogram was plotted and skewness coefficient was measured to assess distribution. Regression analysis was performed to get the values of AETI and EETI equivalent to IELT  $\leq 60$  s. All statistical analyses were performed by using the Statistical Package for Social Sciences (SPSS) version 23 (IBM Corp., Armonk, NY, USA).  $P$  values below 0.05 were considered statistically significant.

### Patient and public involvement

The authors initially intended to measure ejaculation time in sexual activities: peno-oral, peno-anal, and masturbation apart from penovaginal intercourse. When methodology was discussed with participants, they informed investigators of the following difficulties in measuring ejaculation time in sexual activities not involving vaginal penetration: very less frequent, social stigma in revealing details, and difficulty in measuring ejaculation time. They and their partner agreed to measure ejaculation time only for penovaginal intercourse, and thus, the study design was modified and restricted itself to penovaginal intercourse. Participants agreed with the investigators' preference for objective measurement of ejaculation time using a stopwatch over subjective reporting. Participants reviewed and signed consent forms before their participation. Results were shared with participants in a way that they cannot identify each other. Participants agreed to share the results as a research paper in the journal. The authors agreed to share a copy of the paper with them after publication.

## RESULTS

A total of 26 subjects (13 reporting normal and 13 reporting PE) participated in the study. The mean age of the participants was  $29.85 \pm 4.86$  years. The mean age of subjects with normal and PE was  $31.08 \pm 4.38$  years and  $28.62 \pm 5.16$  years, respectively. The difference in the mean age of the two groups was not significant, difference in means = 2.46,  $t = 1.3$ ,  $P = 0.20$ .

The details of the ejaculatory latencies reported by the participants during penovaginal intercourse are given in Table 1. The mean of AETI, EETI, and IELT was much lesser in subjects with PE. All ETs have positively skewed distribution in normal as well as premature ejaculators

because their SDs (standard deviations) were approximating to their means.

The difference of means of AETI, EETI, and IELT between the normal ejaculators and the premature ejaculators was statistically significant. In normal ejaculators, it took about 91 s on average, to get an erection following sexual arousal during heterosexual penovaginal intercourse, whereas in premature ejaculators, it took about 27 s on average, to get erections following sexual arousal during heterosexual penovaginal intercourse. The distribution of AETI, EETI, and IELT was found to be positively skewed [Figure 1].

Although all ETs (AETI, EETI, and IELT) were lesser in the PE group, the relative proportion of IELT (IELT/AETI) was also less in the former compared to the normal group.

Linear regression analysis found that 131.67 s of AETI and 99.58 s of EETI were equivalent to 60 s of IELT.

### DISCUSSION

Systematic review and meta-analysis have validated the use of stopwatch precision technique for drug treatment trials by comparing the stopwatch-determined IELT with other methods such as questionnaires and subjective reports.<sup>[9]</sup>

However, IELT is not useful for sexual activities other than penovaginal intercourse. In 2007, Blaschko suggested, IELT is not able to address the ejaculatory problem encountered in

the sexual practices of all men and seems to be an artificial “correctness” of men having vaginal intercourse with women. He, therefore, suggested penetration ejaculatory latency time (PELT) as an overall term instead of IELT. However, he also mentioned disadvantages of PELT that it cannot be used in other sexual activities except penovaginal intercourse because the four ways of sexual performance (masturbation, oral, penovaginal, and anal intercourse) differ from each other in multiple technical, emotional, psychological, cultural, and religious aspects, and hence, he suggested using terms such as masturbation ejaculation latency time, oral ejaculation latency time, and anal ejaculation latency time.<sup>[10]</sup>

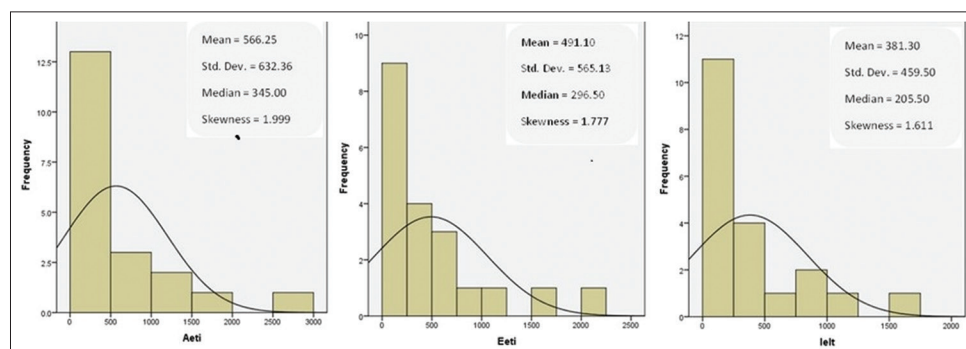
It is usual for a clinician to see patients worried about their shorter ejaculation time during masturbation. They, particularly young single males, are worried about their sexual life after marriage.<sup>[6]</sup> Although many of them may have performance anxiety, there may be a latent subgroup, who are undiagnosed lifetime premature ejaculators. These patients would be better assessed and detected with the two new tools AETI and EETI, respectively, considering the lack of methods for these patients in the current classificatory systems. The same is the appropriateness of these new tools for nonpenovaginal forms of sexual intercourse, as these tools are independent of vaginal intromission.

Bhat *et al.* have tried to explain the importance of new tools in the field of ejaculation latency measurement.<sup>[11]</sup> Their main explanation hinged upon the fact that these two tools

**Table 1: Difference between arousal to ejaculation latency time interval, erection to ejaculation latency time interval, and intravaginal ejaculation latency time between normal ejaculators and premature ejaculators**

Statistical parameter	AETI (seconds)	EETI (seconds)	IELT (seconds)
Mean			
NE (13)	817±592.016	726.08±566.346	582.23±450.859
PE (13)	80.62±24.74	53.46±25.441	21±14.785
Difference between means	768.38	672.620	561.230
Standard error of difference	164.339	157.235	125.113
t-statistic	4.4809	4.2778	4.4858
Degree of freedom	24	24	24
P	0.0002	0.0003	0.0002

NE=Normal ejaculator, PE=Premature ejaculator, AETI=Arousal to ejaculation latency time interval, EETI=Erection to ejaculation latency time interval, IELT=Intravaginal ejaculation latency time



**Figure 1:** Distribution of AETI, EETI, and IELT

did not depend upon vaginal intromission, and were thus more generalizable to other forms of sexual activity such as peno-oral, peno-anal, and masturbation. However, they are not studied in the general population and not compared with IELT. In our study, we have tried to find out the distribution and relation of AETI and EETI, with IELT.

Waldinger *et al.* found IELT as a positively skewed distribution. In our study, we also found the positively skewed distribution of the new tools AETI and EETI along IELT, respectively. We can conclude that calculation of median will be the right choice for measuring latency time as the distribution of AETI, EETI, and IELT was positively skewed with large standard deviation approximating means similar to the study by Waldinger *et al.*<sup>[9]</sup>

However, our study indicates that the cutoff values of 131.67 s of AETI and 99.58 s of EETI were equivalent to 60 s of IELT, i.e., the objective criteria for premature ejaculation.

In our study, premature ejaculators took about 27 s on average, to get erections following sexual arousal during heterosexual penovaginal intercourse. It means that the premature ejaculators had less difference between AETI and EETI, suggesting that the complete cycle of arousal, erection, ejaculation, and detumescence gets completed immediately following arousal in these subjects causing premature ejaculation

In a study by Bhat *et al.*, AETI and EETI were measured in health professionals from South India, in which the mean of AETI and EETI was calculated for different sexual activities and was not compared with IELT that is a gold standard tool for measuring ejaculatory latency.<sup>[11]</sup> Our study, had a small sample size but it includes the general population and compared the new tools AETI, EETI with IELT to measuring IELT.

### Limitation

This pilot study did not assess the nature and duration of foreplay. Therefore, the impact of foreplay time on correlations among various ejaculation times cannot be deduced from this study. It is also recommended that researchers measuring AETI in future studies, preferably of large sample size, should devise a method to assess the impact of “foreplay” on measurement of ETs and their correlation with each other.

## CONCLUSIONS

We found that new tools are feasible and premature ejaculators had AETI equal or almost equal to EETI, suggesting that the complete cycle of arousal, erection, ejaculation, and detumescence gets activated Immediately following arousal causing stressful premature ejaculation. A study with a larger sample size from the general population would help in providing useful data with respect to AETI and EETI.

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