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Sex Therapy for Premature Ejaculation: An Overview

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ABSTRACT

Twenty-seven trials assessing behavioural treatments for premature ejaculation were reviewed. Their effects were estimated intermediate to large. Most of them used techniques of pauses (i.e., "stop-start"). Some added penile compression techniques (i.e. "squeeze") and some added the support of a vibratory device, but these adjunctions did not appear to provide further significant benefits. Other techniques aiming to regulate motor, respiratory and attentional components of sexual arousal (i.e. "regulating" or "sexual-functional" approach) also seemed efficient. On the other hand, exercises specifically designed to rehabilitate the pelvic floor did not appear clearly effective. The therapeutic processes were generally regarded as related to habituation-desensitization mechanisms and/or learning to self-regulate one's excitement. It also seemed important to accompany the patient in order to ensure the proper use of the techniques and to address possible cognitive, behavioural and relational issues related to the sexual complaint. When access to sex therapy is difficult, it is still possible to recommend a self-treatment (i.e., "bibliotherapy") as a first-line approach.

INTRODUCTION

Premature Ejaculation (PE) is considered a difficulty that meets three criteria: it is an ejaculation [1] that occurs quickly, [2] that the man feels he cannot control and [3] that causes a feeling of distress [4-6]. This general description covers a diversity of clinical situations that can be characterized in at least two ways: the difficulty can be either lifelong or acquired, depending on whether it appeared at the beginning of the person's sexually active life or after a period of deemed normal functioning [4,6-8]. PE can then be described as either generalized or situational (or variable), depending on whether it occurs in all sexual situations, including masturbation, or only under certain conditions [4,6,8]. Finally, a distinction can be made according to the average penetration time to compare primary and acquired PEs that occurs within a maximum of 1 to 3 minutes of penetration with so-called subjective PEs, in which the penetration times are most often longer than 4 minutes and are therefore quite similar to those found in the general population [7,8-10]. The subdivision of the PE into several categories is based on the idea that the different subtypes of the disorder probably obey different causes and that they would therefore require differentiated management strategies. Yet, as Puppo and Puppo [11] point out, the question of the

causes of PE remains rather unclear. Research highlights multiple risk factors, such as genetic factors [12,13], hormonal factors, as well as cognitive [14], emotional [15,16] or neurophysiological [17,18] factors. However, at the end, very little is known about their true causal impact, relative weight and possible interactions. Whatever its specific form, PE seems to result primarily from a complex entanglement of biological and psychosocial processes for which it would be bold to establish the exact formula [19]. Given the current state of knowledge, it seems futile to establish a correspondence between the type of PE and the type of treatment indicated, i.e. behavioural or pharmacological. From a heuristic clinical point of view, PE can hardly be characterized in any way other than as a biological condition that can be modulated either chemically or behaviourally, with the choice of strategy becoming mainly a matter of preference [20,21].

The efficacy of serotonin reuptake inhibitor molecules is clearly established. The characteristics, effects and limitations of available products are well documented. This situation provides clinicians with convenient guidelines [22,23]. Things are far from being so clear about sex therapies. There are many studies in this area, but they have various methodological qualities [24,25]. The series to which they relate are often small. Their results sometimes appear contradictory and the description of the treatments they propose sometimes remains imprecise. According to an estimate by the International Society for Sexual Medicine (SIMS), the effectiveness of behavioural treatments did not exceed Level 2b in 2010 [9]. The terms "psychological", "sexological" or "behavioural", by which they are summarized, also refer to multimodal treatments composed of a variety of techniques whose combination can vary greatly from one model to another [3]. This situation leaves the non-specialized clinician with an impression of complexity, even blurred. However, there is a significant amount of cumulative empirical data and a decline of several decades that allows for some clarification.

The purpose of this article is to identify published papers in the field and to draw general lessons from them.

METHODOLOGY

Since the inaugural publications of Semans [26] and Masters and Johnson [27], several clinical trials have been conducted on the behavioural approach to PE. A census was conducted in April 2019, based on traditional databases (PubMed, Scopus, Psyc INFO). Work not listed in these databases but cited by relevant sources has also been included, provided that reports have been accessible at least in summary form. This is the case for some of the oldest works as well as those of De Sutter et al., [28] Shao & Li [29] and Yuan et al., [30]. The census targeted all studies that reported pre- vs. post-treatment measures. Twenty-seven trials were identified. The publications run from 1956 to 2019, and include one article in French [28] and four in Chinese [29-32]. As the latter language is unknown to the authors of this article, only information from their English abstracts [31,32] or a detailed analysis by Cooper et al., [24] [29,30] was taken into consideration.

RESULTS

The list of trials of behavioural treatments for PE is shown in (Table 1).

In 1956, Semans was the first to develop and test a behavioural technique specifically applicable to PE, a technique based on "pauses". This pause technique, usually called "stop-start", is still one of the cornerstones of sex therapy today. The patient is asked to masturbate (or be masturbated) until he feels an excitation close to ejaculation. The stimulation is then stopped ("stop") until the excitation has significantly decreased, then it is restarted ("start") and stopped again before ejaculation occurs. The operation is repeated several times before allowing the man to ejaculate. The exercise is repeated regularly until the patient is able to postpone his ejaculation at will. The stop-start is then applied in a coital situation until the man also achieves satisfactory control. The pause technique was used in almost all the trials reviewed, with uncertainty for those of De Amicis et al., [33], Tang et al., [32], Li et al., [31], Yuan et al., [30] Mohammadi et al., [34] and Pavone et al., [35], for which we did not find detailed information on the techniques used. In 1970, Masters and Johnson revisited the Semans technique by enhancing it, during the stopping phases, with pinches applied either to the root of the penis or under the crown of the glans. This procedure, called "squeeze technique", has certainly been adopted by Lowe & Mikulas [36], Golden et al. [37], Zeiss [38], Kolodny, Masters& Johnson [39], Trudel & Proulx [40], Abdel-Hamid, El Nagger & El Gilany [1], Cormio et al. [41], Mantovani [42] and in the "standard" treatment in the essays

by Jern [43] Cui et al. [44] and Rodriguez, Marzo & Piqueras [45], the pause exercises were assisted by a vibratory device. Mantovani [42] and Rodriguez, Marzo & Piqueras [45] have also associated pelvic muscle rehabilitation exercises. In addition to, or even in place of, pause techniques, some authors have proposed postural, respiratory and muscle relaxation techniques to regulate the release of excitement [28,46,47].

Pause techniques and their variants were usually integrated into a broader therapeutic format that also includes psycho-education sessions, sensory reconditioning exercises such as the "sensate focus" [27] and attention to a series of individual or relational difficulties that may interfere with the problem. Sexual scripts may be inadequate, communication deficient, emotions at the surface of the skin, etc., in short, beyond the simple question of ejaculation delays, various elements can work to tarnish sexual satisfaction, it is important to take this into account. In addition to behavioural techniques specifically aimed at restoring male control over ejaculatory latency, it is therefore important to address a number of related difficulties, we would say "to clean up the context". However, the methods used for this purpose are not specific to PE problems, they apply to a multitude of sexual difficulties and thus characterize the sex therapy approach as a whole. Masters & Johnson [27] have focused on these non-specific components of treatment, it can be assumed that the same is true for authors who more or less explicitly claimed their therapeutic (De Carufel & Trudel [2006] in their "standard" treatment) [33,36-38,40,48,49] but it is difficult to determine to what extent. Some authors also stated that they have worked in a broader context but without referring specifically to the Masters & Johnson format (De Carufel & Trudel [2006]) [28,35,41,46,50,51] in their "functional-sexological" treatment. Others did not say anything about it or, in any case, we had no information on it [30-32,42-45].

Some authors expressed their results in terms of "cure" rates, i.e. in a categorical mode, where the number of beneficiaries improved by the method was specified, and the criteria for improvement might vary from one study to another. Other authors presented their results in a rather parametric way: the penetration times before vs. after treatment were detailed as well as the participants' progress on self-assessment scales relating to their sense of control and distress. One of the advantages of such a methodology is that it can be used for standardized measures of effect sizes, provided, of course, that the ad hoc indicators were reported.

Table 2 reports effect sizes (Cohen's d) related to the extension of penetration times after behavioural treatment used as monotherapy. Effect sizes were calculated based on published figures from trials with at least one arm using a sex therapy approach as the sole treatment. They concerned so-called "IELT" measurements (Intravaginal Ejaculatory Latency Time) as objectively measured using a stopwatch or as reported by the participants (subjective IELT), measurements that were expressed in minutes or seconds, except in Kempeneers et al. [46,47] where they were expressed in terms of slices (1. ante portas, 2. < 30 sec, 3. between 30 sec and 1 min, 4. between 1 and 2 min, etc.) The effects of the treatments are also presented as multipliers of the penetration times measured in the baseline as well as in average penetration times (minutes) after treatment. Table 2 also provides details on treatment and follow-up times.

In terms recommended by Cohen (1988), the effects of behavioural treatments range from “small” (d < .20) in one occurrence [34] to "intermediate" (d between .40 and .80) in four [45-47] and "large" (d > .80) or even "very large" (d > 1.30) in the other nineteen occurrences. This generally argues in favour of recognizing the effectiveness of the behavioural approach while drawing attention to variations that may shed light on certain conditions of relative effectiveness of the methods. These variations are one of the subjects of the following discussion.

(Table 3) is constructed according to the same principle as (Table 2) but it concerns trials comparing behavioural and pharmacological approaches alone or in combination.

The experience of PE is not reduced to short periods of penetration, it also implies a feeling of lack of control and suffering. Composite scales have therefore been used by several authors to report clinical pictures in their multiple dimensions. These include the PEDT (Premature Ejaculation Diagnostic Tool) used by Cormio et al. [41] and Pavone et al. [35], the GRISS-PE (Golombok Rust Inventory of Sexual Satisfaction for PE) used by Van Lankveld et al. [51], the AIPE (Arabic Index of Premature Ejaculation) used by Mohammadi et al. [34], CHEES (Checklist for Early Ejaculation Symptoms)

used by Jern (2013), CIPE (Chinese Index of Premature Ejaculation) used by Cui et al. [44], and PEP (Premature Ejaculation Profile) used by Kempeneers et al. [47]. In the terms proposed by Cohen (1988), effect sizes range from small in one occurrence [34] to intermediate in three occurrences [51], and pharmacological treatment alone by Pavone et al., [35] and large or very large in all others. However, the heterogeneity of the measurements makes it difficult to compare between trials. Let us simply observe that they are broadly in line with the IELT measures.

Table 1: Synopsis of sex therapy trials for PE with post-treatment assessments.

Trials	N	Special focus on PE with IELT < 2 min	Kinds of treatment assessed	Control group without treatment	Main outcomes	Main mode of assessment
Semans [26]	9	no	sex therapy	none	improvements in 8 of the 9 subjects treated	Categorical
Masters & Johnson [27]	186	no	sex therapy	none	improvements in 98% of subjects	Categorical
Lowe &Mikulas [36]	10	no	bibliotherapy + phone accompaniment	waiting list	improvements in the 10 subjects treated	Categorical
Golden et al., [37]	15	no	group sex therapy / couple sex therapy	none	equivalent improvements with both therapeutic formats	Parametric
Zeiss [38]	20	no	sex therapy (n = 6) / bibliotherapy (n = 6) / bibliotherapy + minimal accompaniment (n = 6)	none	improvements using standard formats and accompanied bibliotherapy, not in the case of bibliotherapy alone	Categorical
Kolodny, Masters & Johnson [39]	246	no	sex therapy	none	improvements in 95% of subjects	Categorical
De Amicis et al., [33]	20	no	sex therapy	none	significant improvements after treatment, failure to maintain achievements after three years with continued sexual satisfaction	Categorical
Hawton et al., [48]	8	no	sex therapy	none	significant improvements after treatment in 6 subjects. Retention of achievements in only 2 of them at the end of 3 years	Categorical
Trudel& Proulx [40]	25	no	sex therapy / bibliotherapy / bibliotherapy + minimal accompaniment	waiting list	improvements using all three therapeutic formats, but 45% dropouts in case of bibliotherapy alone	Parametric
Abdel-Hamid et al., [1]	31	yes	sex therapy (n = 6) / sildenafil (n = 6) / clomipramine (n = 7) / sertaline (n = 6) / paroxetine (n = 6)	none	superiority of sildenafil over other treatments, superiority of paroxetine over sex therapy	Parametric
De Sutter et al., [28]	64	no	biblioherapy (n = 64)	waiting list (n = 32)	improvements in 55% to 65% of subjects at two months	Categorical
Tang et al., [32]	60	unknown	sex therapy (n = 30) / sex therapy + sildenalfil (n = 30)	none	superior efficiency of combined treatment	Parametric
Oguzhanoglu, Ozdel&Aybek et al., [49]	32	no	sex therapy (n = 16) / fluoxetine (n = 16)	none	equivalent improvements (50% - 62.5%) with both forms of treatment	Categorical
De Carufel& Trudel	36	yes	"standard" sex therapy (n = 18) / "functional-sexological" therapy (n = 18)	waiting list (n = 18)	equivalent improvements with both active treatments	Parametric
Li et al., [31]	90	unknown	clomipramine / clomipramine (n = 45) + sex therapy (n = 45)	none	superior efficiency of combined treatment	Parametric
Shao & Li.[29]	120	unknown	sex therapy (n = 40) / paroxetine (n = 40) / paroxetine + sex therapy (n = 40)	none	sex therapy + paroxetine > paroxetine alone > sex therapy alone	Parametric
Yuan et al., [30]	96	unknown	sex therapy (n = 32) / citalopram (n = 32) / citalopram + sex therapy (n = 32)	none	sex therapy + citalopram > citalopram alone > sex therapy alone	Parametric
Van Lankveld et al., [51]	36	no	internet-based sex therapy	waiting list (n = 16)	equivalent improvements in active treatment and waiting list	Parametric
Kempeneers et al., [46]	120	partly (n = 55 with IELT < 1 min)	bibliotherapy (n = 120, or n = 55 in case of LLPE with IELT < 1 min)	waiting list (n = 66, or n = 35)	improvements to 6 and 12-month maturities	Parametric
Jern [43]	11	no	sex therapy with vibratory device	waiting list (n = 5)	improvements at 6-month maturity	Parametric
Mohammadi et al., [34]	12	no	sex therapy	none	improvements after treatment	Parametric
Cormio et al., [41]	50	yes	dapoxetine (n = 25) / dapoxetine + sex therapy (n = 25)	none	sex therapy + dapoxetine>dapoxetine alone	Parametric
Pavone et al., [35]	157	yes	sex therapy (n = 59) / dapoxetine (n = 62) / group sex therapy + dapoxetine (n = 36)	none	sex therapy + dapoxetine = sex therapy alone >dapoxetine alone	Parametric
Mantovani [42]	18	yes	sex therapy / dapoxetine / dapoxetine + sex therapy	none	superiority of combined treatment at 6-month after treatment	Categorical

Cui et al., [44]	86	yes	sex therapy with vibratory device (n = 6) / traditional herbal medicine spray (n = 6) / sex therapy with vibratory device + herbal medicine spray (n = 6)	none	sex therapy + spray > sex therapy alone = spray alone	Parametric
Kempeneers et al., [50]	71	partly (n = 48)	bibliotherapy (n = 36) / bibliotherapy + minimal accompaniment (n = 34)	none	similar improvements in both groups	Parametric
Rodriguez, Marzo & Piqueras. [45]	35	yes	sex therapy (n = 18) / sex therapy + vibratory device (n = 18)	none	sex therapy + vibratory device > sex therapy alone	Parametric

PE: Premature Ejaculation; IELT: Intravaginal Ejaculatory Latency Time; N: Number Of Subjects Treated; LLPE: Lifelong Premature Ejaculation.
* Technical specifications not available.

Table 2: Results on IELTs: effect sizes, growth and IELTs at post test.

Trials	N	Measures	Specifications	d	Confidence intervals (95 %)	Growth (Xfold)	Mean (subjective) IELT at postest
Golden et al., [37]	10	IELT	Group treatment at 2-month follow-up	2.26	0.67 - 3.84	5.11	14.05
	5	IELT	Couple treatment at 2-month follow-up	1.17	- 0.73 - 3.07	5.08	7.31
Trudel & Proulx. [40]	na	IELT	12- week standard sex therapy	4.22	na	6.32	10.78
	na	IELT	Bibliotherapy	2.61	na	5.78	11.05
	na	IELT	Bibliotherapy + phone contact	3.46	na	6.99	9.23
Tang et al., [32]	30	IELT	Behaviour therapy at post-treatment	2.50	1.55 - 3.46	2.28	1.82
De Carufel & Trudel (2006)	18	IELT	12-week standard sex therapy	2.55	1.31 - 3.79	8.31	7.87
	18	IELT	12-week functional- sexological treatment	2.65	1.39 - 3.92	8.64	8.18
	18	IELT	Standard treatment at 3-month follow-up	1.88	0.77 - 2.98	11.01	7.80
	18	IELT	Functional- sexological treatment at 3-month follow-up	1.88	0.77 - 2.99	9.71	6.88
	18	subjective IELT	12-week standard sex therapy	2.17	1.01 - 3.34	3.04	4.38
	18	subjective IELT	12-week functional- sexological treatment	2.77	1.48 - 4.06	2.69	3.85
	18	subjective IELT	Standard treatment at 3-month follow-up	2.55	1.30 - 3.79	2.89	4.17
	18	subjective IELT	Functional-sexological treatment at 3-month follow-up	2.76	1.47 - 4.05	2.86	4.14
Kempeneers et al., [46]	120	subjective IELT	Bibliotherapy at delivery + 6 month	0.57	0.20 - 0.93	na	na
	55	subjective IELT	Bibliotherapy at delivery + 6 month in the subsample of men with LLPE reporting IELT < 1min	0.96	0.41 - 1.52	na	na
	79	subjective IELT	Bibliotherapy at delivery + 12 month	0.66	0.21 - 1.11	na	na
	36	subjective IELT	Bibliotherapy at delivery + 12 month in the subsample of men with LLPE reporting IELT < 1 min	0.94	0.25 - 1.63	na	na
Jern. [43]	11	IELT	6-week behavioural treatment at 6-month follow-up	1.67	0.30 - 3.04	2.30	3.37
Mohammadi et al., [34]	12	Subjective IELT	8-12-session cognitive-behaviour therapy	0.12	- 1.02 - 1.25	1.36	3.16
Pavone et al., [35]	93 (pretest) / 59 (post test)	IELT	16-week group therapy	12.39*	10.96 - 13.82	8.80	6.87
Cui et al., [44]	28	IELT	6-week behavior therapy	2.21	1.27 - 3.15	2.71	3.14
Kempeneers et al., [50]	70	subjective IELT	Bibliotherapy at delivery + 6 month	0.69	0.21 - 1.18	na	na
	48	subjective IELT	Bibliotherapy at delivery + 6 month in the subsample of men reporting IELT < 2 min	0.91	0.31 - 1.5	na	na
Rodriguez, Marzo & Piqueras [45]	17	IELT	7-week behavioural treatment	0.46	- 0.50 - 1.42	1.33	1.45
	18	IELT	7-week behavioural treatment with vibratory device	1.22	0.21 - 2.22	2.37	2.78

IELT: Intravaginal Ejaculatory Latency Time; LLPE: Lifelong Premature Ejaculation; N: Number of Subjects Assessed; d: Cohen's d; na: Not Available

*Calculation adjusted to groups with different sample sizes.

Table 2: Results on IELTs: effect sizes, growth and IELTs at post test.

Trials	N	Specifications	d	Confidence intervals (95 %)	Growth (Xfold)	Mean IELT at posttest
Tang et al., [32]	30	Behaviour therapy at post-treatment	2.50	1.55 - 3.46	2.28	1.82
	30	Behaviour therapy + sildenafil at post-treatment	6.83	4.96 - 8.71	4.97	3.63
Li et al., [31]	45	Clorpromazine	10.01	7.86 - 12.15	6.70	4.76
	45	Clorpromazine + 6- week behaviour therapy	11.43	9.00 - 13.87	8.50	5.87
Yuan et al., [30]	32	Behaviour therapy after 6-week treatment	na	na	na	2.21
	32	Citalopram	na	na	na	5.76
	32	Behaviour therapy + citalopram	na	na	na	6.22
Cormio et al., [41]	25	Dapoxetine at 24- week follow-up	2.11	1.13 - 3.09	1.88	2.67
	25	Dapoxetine + behavioural treatment at 24-week Follow-up	2.93	1.80 - 4.05	4.03	2.18
Pavone et al., [35]	62	Dapoxetineat 16- week post test	6.63*	5.82 - 7.43	4.57	3.86
	59	Group therapy at 16- week post test	12.39*	10.96 - 13.82	8.80	6.87
	36	Dapoxetine + group therapy at 16-week post test	12.59*	11.00 - 14.17	8.92	7.19
Cui et al., [44]	29	Traditional herbal medicine spray after 6-week treatment	1.80	0.94 - 2.66	2.60	2.99
	28	Behaviour therapy	2.21	1.27 - 3.15	2.71	3.14
	29	Traditional herbal medicine spray + behaviour therapy after 6-week treatment	3.42	2.27 - 5.56	3.86	4,36

IELT: Intravaginal Ejaculatory Latency Time; LLPE: Lifelong Premature Ejaculation; N: Number of Subjects Assessed; d: Cohen's d; na: Not Available

* Calculation adjusted to groups with different sample sizes.

DISCUSSION

6.1. Evolution over five decades

A first look at Table 1 leads to a global distinction between two periods. The first extends from the 1970s to the 1980s, and is characterized by studies involving only one arm and/or small sample size, with the notable exception of the trials conducted by Masters and his associates [27,39]. The results are mainly expressed in a categorical way, in terms of the proportion of improved beneficiaries. The other major period begins in the 2000s, when trials generally involve several arms, seeking to establish the effectiveness of behavioural methods by comparing them to the absence of treatment and/or other types of treatment, or by comparing them with each other. The sample size tends to increase here and the results are expressed more in a parametric mode, in terms of progress on various measures, the most important of which are penetration times. The tests also focus more on severe PEs with penetration times of less than one to two minutes. These two periods, which are quite different in terms of methodology, are separated from a period of more than ten years during which nothing new or virtually nothing has been published on sex therapy. This period seems to correspond to a phase of pharmacological development that, it seems, saw researchers turn away from behavioural methods and question the contribution of drugs, particularly serotonin reuptake inhibitors that were then appearing on the market.

6.2. Years 1970s and 1980s

The results obtained by Masters and his associates using their original approach on no fewer than 432 cumulative beneficiaries were spectacular: success rates exceeded 95%, success being understood as the possibility for the man to delay ejaculation until his partner's orgasm, in at least 50% of the reports [27,39]. Following the impetus provided by Masters and Johnson, other clinicians have published encouraging results

with similar therapeutic procedures focusing on break techniques: De Amicis et al. [33], Golden et al. [37], Hawton et al. [38], Trudel & Proulx [40] and Zeiss [38]; Kaplan [52], who was the apologist for the method but never published the details of her results, should also be mentioned. However, the documented trials involved small samples whose teachings were difficult to generalize and, with the exception of Trudel and Proulx [40], none included a control group, nor did the studies of Masters and Johnson. Most also produced less dramatic results than those published by Masters and Johnson and, even more annoying, De Amicis et al. [33] and Hawton et al. [48] observed relapse problems after three years. In total, in a 1992 review, Saint Lawrence and Madakasira placed the average level of effectiveness of these methods between 43% and 65%, with values of more than 90% remaining exceptions [53]. In short, if the Masters and Johnson approach could claim a certain effectiveness, it was still necessary to question the extent of its effectiveness and its active ingredients. The question arose of possible recruitment bias: it could not be excluded, for example, that the excellent results reported by Masters and his associates were the result of a selection of exceptionally motivated subjects [54]; some also suggested that severe primary PEs characterized by penetration times of less than one or two minutes should be particularly under-represented in these series, leaving the effectiveness of behavioural methods in these cases in doubt. The question still arose as to the efficiency itself of the break technique. Theoretically, this technique was supposed to cause the extinction of an ejaculatory response conditioned on speed, at least that is what Semans (1956) and Masters & Johnson [26,27] thought. Kaplan [52] argued that the pause allowed a better recognition of the sensations that herald orgasm, this competence being supposed to be lacking in PE subjects. However, research has never been able to confirm either the hypothesis of conditioning contingencies specific to men with PE or that of a deficient perception of their level of excitement [55,56]. If the method worked, it was probably not for the reasons initially imagined. This was the general state of play at the end of the first period. And it is conceivable that, in addition to the enthusiasm for new drug products, the associated feeling of methodological dissatisfaction may have helped to explain the apparent disaffection with the behavioural approach at the turn of the millennium.

6.3. Years 2000 and 2010

The 2000s saw a renewed interest in behavioural methods. Since pharmacological methods have also revealed their limitations [57,58], one of the central questions was the provision of treatment combining drug and sex therapy, the idea being, as Althof [2] put it, to offer beneficiaries, "the best of both worlds". Behavioural intervention also tended to theorize differently. Faced with the obvious absence of causes in the aetiological sense of the term [11,18], clinicians have gradually come to see PE as a variation of normality rather than a "disorder" of it. The focus shifted from the ejaculatory reflex itself, which obviously had no singularity, to the excitation process. Nourished by the contributions of research in the field of emotions [59,60], sex therapists now tended to conceive of the state of excitement as a complex process that, like any emotion, results from multiple reactions - physiological, cognitive, attentional, postural and motor - whose mutual reinforcement automatically leads to an exacerbation, which culminates and closes in orgasm [54,61,62]. The therapeutic intention was no longer so much an improbable re-education of the ejaculatory reflex, but rather aimed more at helping men to become aware of and modulate the discrete reactions that contribute to the exacerbation of their excitation. In neuroanatomical terms, this meant relying on the deliberate action of the prefrontal cortex to feedback control the muscular expression, including motor, respiratory and attentional components of a largely precognitive emotional reaction, i.e. excitation, triggered automatically by the limbal system. A subtle change in therapeutic attitudes was taking place: the classical technique of pauses was now conceived as a way of extending the total duration of the excitation experience by interrupting it regularly. Man thus more exposed to his sensations would be invited to pay attention to them, he would gradually get used to them and desensitize himself. If necessary, habituation-desensitization mechanisms could be facilitated by increasing the sensations of excitement using a vibratory device, as is the case with Cui et al. [44], Jern [43] and Rodriguez, Marzo & Piqueras [45]. It would also become a question of recommending the use of body postures and opposing movements to those automatically implemented in

excitation, in order to deliberately regulate its course; pauses therefore became a means of slowing down the excitation process in the same way as, for example, a slowing of copulatory movements, a modulation of breathing, muscular relaxation and a diffusion of attention over the whole body. De Carufel & Trudel (2006), De Sutter et al. [28] and Kempeneers et al. [46] place particular emphasis on these techniques, which are sometimes described as "regulatory" and sometimes "functional-sexological".

6.4. Active Treatments vs. Waiting Lists

The authors who used a control procedure almost all report significant differences in favour of active treatment. One exception is Van Lankveld et al. [51], who reported similar improvements in their experimental and control groups. It is important to note that while these authors did not find any group effect, they did observe a time effect that resulted in significant improvements in the GRISS-PE scale for both control and experimental group subjects at the end of the procedure. The effect sizes (d) are respectively 0.68 (Confidence intervals [CI] at 95%: -0.33 - 1.69) and 0.88 (CI-95%: -0.09 - 1.85), i.e. effects considered as intermediate in the terms recommended by Cohen (1988). This should draw attention to the fact that patients placed on waiting lists do not necessarily remain inactive, some may continue their investigations and use (self)treatment formulas that may lead to results that are sometimes similar to the most modest of those observed after formal treatment.

6.5. Lifelong Severe PE

Variations in outcomes do not appear to depend on the severity of PE as assessed on the basis of IELT criteria (≤ 1 min) recommended by the American Psychiatric Association [4] or the International Society for Sexual Medicine [7]. Similar gains in magnitude are observed in samples composed exclusively of subjects reporting baseline IELTs of less than two minutes and in those also reporting less severe forms of PE. Contrary to what has already been thought [8,9], behavioural methods would therefore also be effective in severe primary PE. As suggested by Kempeneers & Desseilles [63], the criterion of penetration times of less than one to two minutes to direct therapeutic preferences towards the pharmacological option would probably be poorly adjusted. This does not detract from the observation that the relative severity of PE may sometimes be a factor in a lower response to treatment, both behavioural [15,64] and pharmacological Waldinger [8], but the one-minute cut-off of IELT does not seem relevant as a priori indicators of therapeutic modalities.

6.6. Follow-up Periods

The therapeutic effects do not seem to vary much according to the time elapsed since the end of treatment. Whether the measures are taken directly at the end of the follow-up or at three, six or twelve months of follow-up, they seem relatively constant. These observations somewhat contradict the concerns expressed by De Amicis et al. [33] and Hawton et al. [48] about the stability of therapeutic gains, these gains are probably not eroding as systematically as they feared or, in any case, they are not eroding very quickly.

6.7. Amplitude of the Effects, Methodological Artefacts and Margins for Progress

Comparing protocols in terms of their results is an operation that requires caution. The small effect size observed in the Mohammadi et al. trial [34] would, for example, suggest that the hypothesis of a less effective treatment than most others should be first interpreted. However, it cannot be ignored that the sample size of this study is particularly small (12 subjects), which places the estimate in very wide confidence intervals and therefore prohibits any hasty conclusion.

It is also interesting to note that the penetration times reported in pertest by Mohammadi et al. [34] subjects appear, at an average of 2.33 minutes (± 0.88), to be higher than all those observed in the other studies. At 3.16 minutes post-test, however, they are in the low average of what is found in other studies. The small size of the effect could therefore also be explained by the smaller margin of progression left for Mohammadi and his colleagues to achieve a result equivalent to those obtained in other protocols.

At the other end of the spectrum, where efficacy measures appear to be highest, note the standard sex therapy of Trudel & Proulx [40], the classic and functional-sexological behavioural treatments and group sex therapy of Pavone et al. [35]. These treatments give quite spectacular results since the IELTs are multiplied by six to eleven to reach six to eleven minutes. By way of comparison, in studies by Tang et al. [32], Jern [43], Mohammadi et al. [34], Cui et al. [44] and Rodriguez et al. [45], IELTs are multiplied by two to three to

reach only two to four minutes. Such differences may be due in particular to statistical artefacts: the standard deviations reported in the De Carufel and Trudel study are indeed very large and, when dealing with small numbers, a few particularly high IELT values may be sufficient to significantly increase geometric means; indeed, when examined in terms of effect sizes, the gains reported by De Carufel and Trudel do not appear to be so "spectacular". The same reasoning applies to the results reported by Golden et al. [37].

Note that when asked to report what they think are their penetration times after treatment (subjective IELT), the participants in De Carufel and Trudel's study report shorter latency than when they time them. This could indicate that there is, in fact, a difference between what some men are able to do during a particular coitus (in this case the one they are timing) and what most people, perhaps including themselves, aspire to most of the time. In this sense, studies showing the highest post-treatment IELT values may reflect the occasional expression of a control capacity that exceeds usual aspirations and achievements. It is also perhaps this difference between a point capacity and a usual optimum that would be reflected in the difference observed in Pavone et al. [35] between spectacular effect sizes obtained in terms of IELT (d = 12.39) and more modest on the PEDT scale (d = 0.99).

These latter considerations bring us back to the question of margins for progress. These would depend on the initial situation, as perhaps illustrated by the study by Mohammadi et al. [34], and would be limited by a kind of therapeutic ceiling effect corresponding to optimal sexual functioning. However, IELT chronometric measurements are probably not the best way to determine this optimum. Composite measures would undoubtedly be more appropriate, but practices are more heterogeneous in this respect, and standardization must be called for.

The hypothesis of margins of progression determined, on the one hand, by the initial situation of the subjects and, on the other hand, by a possible ceiling effect may be further illustrated by comparing the trials of Pavone et al. [35] and Cormio et al. [41]. On the PEDT scale, the effect sizes are much smaller in the first case (d = 0.92) than in the second (d = 7.03). This is mainly due to the fact that, in pre-test, the beneficiaries of the combined treatment implemented by Pavone's team reported a less dramatic situation (13.44 points) than did the beneficiaries of the combined treatment proposed by the Cormio team (19.56 points), while post-test measurements are much closer (5.11 and 7.92 points).

6.8. Specific Techniques

Variations in results from one trial to another must be assessed with all the caution required by sometimes small sample sizes and the possible play of unequal margins for progress. However, it is doubtful that methodological artefacts alone can explain all of them, and differences in treatment modalities certainly play a role.

Pause-breaking techniques have several variants: they may or may not include squeeze and may or may not be supported by the assistance of a vibrating device. They can also be presented as a major active ingredient in the treatment, highlighting a desensitization process, or as an accessory or even negligible ingredient among other body techniques aimed at regulating excitation (e. g. slowing copulatory movements, regulating breathing, and distributing sensory-motor tensions over the whole body). These elements of technical variation do not seem to be decisive in examining the effectiveness of behavioural methods. It does seem quite indifferent to put the emphasis more on a regulatory objective, like in trials including exercises that target multiple components of sexual excitement, or on a desensitization objective, like in trials more strictly focused on stop-start exercises. In terms of results both modes of operation seem to be valid. Furthermore, adding penile compressions during the stopping phases does not appear to enhance the efficiency of the stop-start method, and the complementary use of a vibratory device does not seem to clearly produce better results either. All things considered, these adjunctions remain probably dispensable.

On the other hand, there is a relative ineffectiveness of break techniques when they are subordinated to a sphincter control training objective, as is the case in the sex therapy arm alone of the Rodriguez et al. trial [45]. The same is true in Mantovani's trial where the techniques of pauses appear diluted in a program of strengthening the pubo-coccygeal musculature assisted by bio-feedback. The percentages of improvement at six months do not exceed 25%. This finding of limited effectiveness is in line with De Carufel's [54] criticism of pelvic floor rehabilitation methods considered by him as

ineffective in PE problems, or as indirectly effective, as he believes would be the case in a study published in 1996 by La Pera and Nicastro [65]. De Carufel believes that it is possible that the benefit of pelvic-focused physiotherapy exercises, when available, is due to mechanisms implicitly mobilized by them: relaxation of the perineum, for example, or increased attention and habituation to feelings of excitement [54]. In a 2014 study, Pastore and colleagues report similar perplexity when discussing the improvements that they have observed in PE patients treated with a pelvic muscle rehabilitation program. The instructions accompanying such exercises, as they state in their article, as well as their nature and quantity vary greatly between protocols, so their mode of action remains unclear [66]. It is interesting to note that Rodriguez, Marzo & Piqueras' [45] introduction, in the second arm of their trial, of a vibrating device to supplement stop-start exercises is sufficient to produce results closer to those usually associated with behavioural methods. Rodriguez and his colleagues explain this gain by the effect of the vibrator itself but, considering the lack of clear variations in results between studies using a vibrating device and those not using it, one may wonder whether the benefit of the vibrator could not be explained essentially by the fact that its use would have allowed patients to refocus on a more realistic desensitization objective.

In short, technical variants may not be as important as clarity of purpose for the user. Reconditioning your ejaculatory reflex or strengthening your pelvic floor probably doesn't make much sense. On the other hand, getting used to feelings of excitement (i.e. desensitization) and developing skills that make it possible not to automatically give in to a spontaneous propensity to outbid (i.e. regulation) seem to be coherent aims that guarantee the proper use of the exercises proposed for these purposes, the stop-start or others. This leads to questioning the quality and intensity of psychotherapeutic supervision. The following considerations highlight the very likely importance of this.

6.9. Psychotherapeutic Support

While the choice of technical tools (stop start with or without vibrating device, with or without compression or regulation techniques) appears relatively secondary, it is crucial that subjects have a realistic perception of their purpose; of what they can or cannot expect from it and how they can adapt them to their individual situation. This may help to explain why the protocols of Trudel & Proulx [40], and Pavone et al. [35] seem to stand out from the crowd. It is indeed possible to imagine that the essential part of psycho education and adjustment of therapeutic strategies is more easily ensured in dense accompaniments where time is taken to circulate information, such as the protocols. Pavone et al. [35], than when patients are simply given written instructions [46,47], whether the focus is on launching a masturbatory exercise program [43,44] or whether expectations of effectiveness focused on sphincter control are instilled [42,45]. It should be noted that the treatments proposed by De Carufel & Trudel and Pavone et al. [35] lasted 12 and 14 weeks respectively, compared to 6 weeks for the treatments proposed by Jern [43] and Cui et al. [44] and 7 weeks for the treatment proposed by Rodriguez, Marzo & Piqueras [45], i.e. half as long. This may also contribute to the difference in results. The duration of treatments is certainly not in itself a guarantee of their quality, but it cannot be denied that time is a factor conducive to the construction of a therapeutic alliance and the development of exchanges aimed at explaining therapeutic principles, describing exercises, evaluating them and making subsequent adjustments. It is remarkable, in any case, that Pavone and his colleagues specified that they attach importance to discussing the "meaning of sexual dysfunction [in order to help their patients to develop internal and relational competence useful to] achieve a most satisfying quality of life" [35]. This is not simply a matter of applying behavioural "recipes" but of integrating their purpose, understanding their modes of action and addressing related elements.

6.10. Self-Treatment

Careful support certainly facilitates the efficient implementation of treatments. This is further evidenced by the loss of income associated with some self-treatment formulas. The intermediate effect size observed in Kempeneers et al. [46,47] are likely an expression of this: the therapeutic intervention was almost exclusively limited here to providing participants with a self-treatment guide. The formula was somewhat impersonal, unsupportive and, at the end of six months after the distribution of the material, a significant proportion of dissatisfied subjects explained that, for various reasons (e.g., lack of sufficient privacy, lack of availability or

collaboration of a partner, or lack of understanding of certain elements), they simply did not have the opportunity to fully apply or appreciate the therapeutic guidelines recommended in the document [46]. A minimum therapeutic contact (45 to 90 minutes) was then established to support participants who wished to do so and to possibly help them adjust the written instructions to their individual situation. This procedure produced a slight improvement in the results but was not sufficient to raise the statistical significance threshold [47]. This relative inadequacy of results attributable to self-treatment formulas had already been pointed out by Zeiss [38] and Trudel & Proulx [40] who, compared to a traditional face-to-face formula, observed, in the case of self-treatment, no to moderate improvements and a high proportion of dropouts. Therapeutic compliance would probably be the weak point of bibliotherapy.

Despite its suboptimal nature, self-care sometimes appears to be the only possible sex therapy option, due to difficulties in accessing qualified providers or reluctance to discuss an intimate issue with a third party [67,68]. Under these conditions, the formula remains a valuable alternative to drug therapy as a first-line intervention.

6.11. Factors Related to the Partner

Partner-related factors certainly play a role in predicting outcomes. Blanken et al. [64] observed that the results obtained by Van Lankveld et al. [51] were, on the one hand, proportional to the quality of the participants' marital relationship and, on the other hand, inversely proportional to the number of sexual difficulties reported in the partner. Pavone et al. [35] reported that couple difficulties were a significant cause of stopping their treatment. As stated above, Kempeneers et al. [46] noted that a number of participants who reported that they had not benefited from the proposed treatment incriminated a partner's unavailability or lack of collaboration or hostility as an explanation for their treatment failure.

The way in which relational factors are taken into account varies according to the protocols and with it, probably, the effect sizes. At one pole, there are trials that specifically target a couple, which excludes from the outset men without a steady partner and sets a minimum collaboration between spouses as a condition for access to the protocol. Because of its conjugal dimension, the processing is also designed precisely to optimize exchanges between partners. The protocols of Cui et al. [44], Trudel & Proulx [40] are good examples of these treatments, which take conjugal collaboration both as an object and as a recruitment condition, and are associated with rather large effect sizes. In the protocol by Pavone et al. [35], also associated with large effect sizes, cases of discontinuation of treatment due to relational difficulties were therefore also excluded from the analyses. At the other end of the spectrum are the trials by Kempeneers et al. [46,47] that recruited their participants regardless of their relationship situation and left it to their sole discretion whether or not to communicate with their partner about the therapeutic instructions received in writing. The effect sizes here are intermediate. It seems quite plausible that the differences in results are due in particular to differences in protocol considerations for partner-related factors.

Collaboration between partners is certainly a factor in improving the problem but, in practice, it is not always possible.

6.12. Sex therapy and drug therapy

Studies comparing behavioural monotherapy with drug monotherapy are inconclusive. They sometimes point to a superiority of the behavioural approach [35,44], sometimes to a superiority of the pharmacological approach [29,30], sometimes to equivalence [42,49]. Much depends on the nature and dosage of the products used as well as the type and density of behavioural treatments.

Combination treatments almost all appear to be superior in effect to behavioural or pharmacological monotherapy. A molecule designed to delay ejaculation can promote the learning necessary to control excitement just as learning can help control ejaculation which, although delayed by the effect of a drug, would remain too fast. It is also clear that sex therapy often addresses a range of relational and behavioural parameters that, although unrelated to the duration of penetration per se, contribute to increased dissatisfaction among men and couples facing the problem, such as a possible tendency to focus on coital relationships to the detriment of other forms of erotic stimulation [69]. The two approaches do not help people in the same way, they are obviously complementary. The addition of one method addresses the relative deficiencies of the other, it is logical, and this is what

the tests reviewed tend to confirm. Some of the variations in results are, of course, due to the molecules used and their dosage, but this goes beyond the scope of this article. It is interesting to note, however, that in the trial by Pavone et al. [35], dapoxetine treatment does not add anything to the effects of sex therapy, which are already among the most important in the series under consideration. This refers to the hypothesis of a ceiling effect that would limit the margins for progress and invite us to remember that voluntary control can be obtained from behavioural treatment provided that it is carried out under optimal conditions. Studies are still needed to clarify these.

CONCLUSIONS

Behavioural treatments of PE produce intermediate to large effects. They generally use stop-start break techniques. It does not seem essential to combine these techniques with penile compression (i.e. squeeze) or the use of a vibrating device. We usually expect a habituation desensitization of the beneficiaries to feelings of excitement; we also expect a slowing effect of the psycho-physiological and motor dynamics that characterizes excitement. To this end, it is also possible to use other techniques (postural, respiratory, motor) qualified as "regulating" or "functional-sexological", which can be combined or even replace breaks. Break techniques and regulatory techniques seem to be equivalent, but they may not be equally effective with the same people, so it would probably be best to combine them. Exercises specifically designed to strengthen the pelvic floor, on the other hand, do not in themselves seem to be a promising therapeutic vector, their effects would probably be indirect.

Beyond the techniques specifically applicable to PE problems, it is necessary to ensure their proper use. This requires support for the patient, and ideally for his partner, to address cognitive, behavioural, relational or other issues related to the complaint. The most effective protocols are probably also those that focus on this aspect of things.

There is a tendency to favour pharmacological treatments when dealing with severe forms of PE [9] and to offer sex therapy only if the drug approach fails or is insufficient. Such an algorithm does not appear to be supported by the data reviewed. Perhaps it would even be appropriate, because of possible adverse effects related to the use of certain substances, to reverse the recommendation and, as previously suggested by Assalian [20], to make sex therapy the preferred indication with, if necessary, alternative or supportive medication.

In practice, access to sex therapy may be difficult, for example because of its cost or insufficient supply. In this case, it is possible to offer tried and tested forms of self-treatment as a first line of action, while keeping in mind that these forms are not necessarily adapted to the particular situations of all people.

CONFLICT OF INTEREST

The authors report no conflicts of interest

REFERENCES

1. Abdel-Hamid IA, El Naggar EA, El Gilany AH. (2001). Assessment of as needed use of pharmacotherapy and the paus-squeeze technique in premature ejaculation. Int J Impot Res, 13: 41-45.
2. Althof SE. (2014). Treatment of premature ejaculation. In Binik YM, Hall KSK. (Eds), Principles and practice of sex therapy, 5th Edition (pp: 112-137). New York, NY: Guilford Press. https://www.amazon.com/Principles-Practice-Sex-Therapy-Fifth/dp/1462513670
3. Althof SE. (2016). Psychosexual therapy for premature ejaculation. Transl Androl Urol. 5: 475-481.
4. APA (American Psychiatric Association). (2013). Diagnostic and Statistical Manual of Mental Disorders. 5th Edition. Washington. DC: APA.
5. Montague DK, Jarrow J, Broderick GA, Dmochowski RR, Heaton JPW, et al. (2004). American Urological Association guideline on pharmacologic management of premature ejaculation. J Urol. 172: 290-294.
6. WHO (World Health Organization). (2018). International Classification of Diseases, 11th Edition. Retrieved 07 25, 2019.
7. Serefoglu EC, McMahon CG, Waldinger MD, Althof SE, Shindel A, et al. (2014). An evidence-based unified definition of lifelong and acquired premature ejaculation: report of the second International Society for Sexual Medicine ad hoc committee for the definition of premature ejaculation. J Sex Med, 11: 1423-1441.
8. Waldinger MD. (2007). Premature ejaculation: Definition and drug treatment. Drugs. 67: 547-568.

9. Althof SE, Abdo CH, Dean J, Hackett G, McCabe M, et al., (2010). International Society for Sexual Medicine's guidelines for the diagnosis and treatment of premature ejaculation. J Sex Med, 7: 2947-2969.
10. McMahon CG. (2013). Taxonomy of ejaculatory disorders and definition of premature ejaculation. In E Jannini CG McMahon, MD Waldinger (Ed's), Premature ejaculation. From etiology to diagnosis and treatment. Milan: Springer. P: 53-69.
11. Puppo V, Puppo G. (2016). Comprehensive review of the anatomy and physiology of male ejaculation: Premature ejaculation is not a disease. Clin Anat. 29: 111-119.
12. Jern P, Santtila P, Witting K, Alanko, K, Harlaar N, et al. (2007). Premature and delayed ejaculation: Genetic and environmental effects in a population-based sample of Finnish twins. J Sex Med. 4: 1739-1749.
13. Waldinger MD. (2013a). Risks factors in premature ejaculation: The genetic risk factor. In E Jannini, CG McMahon, MD. Waldinger (Eds.), Premature ejaculation. From etiology to diagnosis and treatment (pp. 111-123). Milan: Springer.
14. Kempeneers P, Andrianne R, Cuddy M, Blairy S. (2018a). Sexual cognitions, trait anxiety, sexual anxiety and distress in men suffering from different types of premature ejaculation and in their partners. J Sex Marital Ther. 44: 319-332.
15. Kempeneers P, Andrianne R, Bauwens S, Georis I, Pairoux JF, et al. (2013). Functional and psychological characteristics of Belgian men with premature ejaculation and their partners. Arch Sex Behav. 42: 51-66.
16. Rowland DL. Cooper SE. (2013). Risk factors for premature ejaculation: The intrapsychic risk factor. In E Jannini, CG McMahon, MD Waldinger (Ed's), Premaure ejaculation. From etiology to diagnosis and treatment (pp. 99-109). Milan: Springer.
17. Ertekin C, Colakoglu Z, Altay B. (1995). Hand and genital sympathetic skin potentials in flaccid and erectile penis states in normal potent men and patients with premature ejaculation. J Urol. 153: 76-79.
18. Rowland DL, Tai W, Brummett K. (2007). Interactive processes in ejaculatory disorders: Psychophysiological considerations. In E. Janssen (Ed.), The psychophysiology of sex (pp. 227-243). Bloomington, IN: Indiana University Press.
19. Perelman MA. (2006). A new combination treatment for premature ejaculation: A sex therapist's perspective. J Sex Med. 3: 1004-1012.
20. Assalian P. (2005). Guidelines for the pharmacotherapy of premature ejaculation. World J Urol. 23: 127-129.
21. Jannini EA, Maggi M, Lenzi A. (2011). Evaluation of premature ejaculation. J Sex Med. 8: 328-334.
22. Li J, Liu D, Wu J, Fan X, Dong Q. (2018). Dapoxetine for the treatment of premature ejaculation: a meta-analysis of randomized controlled trials with trial sequential analysis. Ann Saudi Med. 38: 366-375.
23. Waldinger MD. (2013b). Treatment of premature ejaculation with selective serotonin re-uptake inhibitors. In E Jannini, CG McMahon, MD Waldinger (Eds.), Premature ejaculation. From etiology to diagnosis and treatment (pp. 229-240). Milan: Springer.
24. Cooper K, Martyn-St James M, Kaltenthaler E, Dickinson K, Cantrell A, et al. (2015). Behavioral therapies for management of premature ejaculation: A systematic review. J Sex Med. 3: 174-188.
25. Melnik T, Althof S, Atallah AN, Puga ME, Glina S, et al. (2011). Psychosocial interventions for premature ejaculation. Cochrane Database Syst Rev. 8: CD008195.
26. Semans JH. (1956). Premature ejaculation: A new approach. South Med J. 49: 353-358.
27. Masters WH, Johnson VE. (1970). Human sexual inadequacy. Boston. MA: Little-Brown. https://onlinelibrary.wiley.com/doi/abs/10.1002/tera.1420040411
28. De Sutter P, Reynaert C, Van Broeck N, De Carufel F. (2002). Treatment of premature ejaculation by a cognitivo-behavioral bibliotherapy. [Traitement de l'éjaculation précoce par une approche bibliothérapeutique cognitivo-comportentale sexologique]. Journal de Thérapie Comportementale et Cognitive. 12: 131-136.
29. Shao X, Li J. (2008). [Clinical study on treatment of premature ejaculation with paroxetine and behavior therapy]. Nan Xing Xue Za Zhi. 22: 18-20.

30. Yuan P, Dai J, Yang, Y, Guao J, Liang R. (2008). [A comparative study on treatment for premature ejaculation: citalopram used in combination with behavioral therapy versus either citalopram or behavioral therapy alone]. Chinese Journal of Andrology. 22: 35-38.
31. Li P, Zhu GS, Xu P, Sun LH, Wang P.. (2006). [Interventional effect of behavior psychotherapy on patients with premature ejaculation]. Zhonghua Nan Ke Xue. 12: 717-719.
32. Tang W, Ma L, Zhao L, Liu Y, Chen Z. (2004). [Clinical efficacy of Viagra with behavior therapy against premature ejaculation]. Zhonghua Nan Ke Xue [National Journal of Andrology]. 10: 366-367.
33. De Amicis LA, Goldberg DC, LoPiccolo J, Friedman J, Davies L. (1985). Clinical follow-up of couples treated for sexual dysfunction. Arch Sex Behav. 14: 467-489.
34. Mohammadi SD, Mohammadkhani P, Dolatshahi B, Dadkhah A. (2013). Effectiveness of cognitive behavioral therapy on signs, symptoms and clinical consequences of premature ejaculation. Jpn Psychol Res. 5: 350-357.
35. Pavone C, Abbadessa D, Gambino G, Scaduto G, Vella, M. (2017). Premature ejaculation: pharmacotherapy vs group psychotherapy alone or in combination. Arch Ital Urol Androl. 89: 114-119.
36. Lowe JC, Mikulas WL. (1975). Use of written material in learning self-control of premature ejaculation. Psychol Rep. 37: 295-298.
37. Golden JS, Price S, Heinrich AG, Lobitz, WC. (1978). Group vs. Couple treatment of sexual dysfunction. Arch Sex Behav. 7: 593-602.
38. Zeiss RA. (1978). Self-directed treatment for premature ejaculation. J Consult Clin Psychol. 46: 1234-1241.
39. Kolodny RC, Masters WH, Johnson VE. (1979). Textbook of sexual medicine. Boston, MA: Little, Brown & Co.
40. Trudel G, Proulx S. (1987). Treatment of premature ejaculation by bibliotherapy: an experimental study. Sex Marital Ther. 2: 163-167.
41. Cormio L, Massenio P, La Rocca R, Verze P, Mirone V, et al. (2015). The combination of dapoxetine and behavioral treatment provides better results than dapoxetine alone in the management of patients with lifelong premature ejaculation. J Sex Med, 12: 1609-1615.
42. Mantovani F. (2017). Pharmacological/dynamic rehabilitative behavioural therapy for premature ejaculation: Results of a pilot study. Arch Ital Urol Androl. 89: 148-150.
43. Jern P. (2013). Evaluation of a behavioral treatment intervention for premature ejaculation using a handheld stimulating device. J Sex Marital Ther. 40: 358-366.
44. Cui YD, Hu SB, Wu B, Li SJ, Xiang K, et al. (2017). Efficacy of combined traditional Chinese medicine spray with premature ejaculation desensitization therapy for treatment of primary premature ejaculation. Afr Health Sci. 17: 603-613.
45. Rodriguez JE, Marzo JC, Piqueras JA. (2019). Efficacy of sphincter control training (SCT) in the treatment of premature ejaculation, a new cognitive behavioral approach: a parallel-group randomized, controlled trial. PLoS ONE. 14: 0212274.
46. Kempeneers P, Andrianne R, Bauwens S, Georis I, Pairoux JF, et al. (2012). Clinical outcomes of a new self-help booklet for premature ejaculation. J Sex Med. 9: 2419-2428.
47. Kempeneers P, Andrianne R, Cuddy M, Georis I. Longrée Q, et al. (2018b). A comparative study of guided vs pure self-treatment for premature ejaculation. Sex Relatsh Ther. 33: 309-324.
48. Hawton K, Catalan J, Martin P, Fagg J. (1986). Long-term outcome of sex therapy. Behav Res Ther. 24: 665-675.
49. Oguzhanoglu NK, Ozdel O, Aybek Z. (2005). The efficacy of fluoxetine and stop-start technique in the treatment of premature ejaculation and anxiety. J Clin Pharmacol. 25: 192-194.
50. Kempeneers P, Andrianne R, Cuddy M, Blairy S. (2018). Sexual cognitions, trait anxiety, sexual anxiety and distress in men suffering from different types of premature ejaculation and in their partners. J Sex Marital Ther. 44: 319-332.
51. Van Lankveld JJ, Leusink P, Van Diest S, Gijs L, Slob AK. (2009). Internet-based brief therapy for heterosexual men with sexual dysfunctions: a randomized controlled pilot trial. J Sex Med. 6: 2224-2236.
52. Kaplan HS. (1974). The new sex Therapy. New York. NY: Brunner-Mazel.

53. St Lawrence JS, Madakasira S. (1992). Evaluation and treatment of premature ejaculation: a critical review. Int J Psychiat Med. 22: 77-97.
54. De Carufel F. (2017). Premature ejaculation: Theory, evaluation and therapeutic treatment. New York, NY: Routledge.
55. Perelman MA, McMahon C, Barada J. (2004). Evaluation and treatment of the ejaculatory disorders. In T Lue (Ed.), Atlas of male sexual dysfunction. Philadelphia, PA: Current Medicine.
56. Strassberg DS. (2007). The voluntary control of genital response, arousal, and orgasm. In E. Janssen (Ed.), The psychophysiolo gy of sex (pp. 291-303). Bloomington, IN: Indiana University Press.
57. Park HJ, Park NC, Kim TN, Baek SR, Lee KM, et al. (2017). Discontinuation of dapoxetine treatment in patients with premature ejaculation: A 2-year prospective observational study. Sex Med. 5: 99-105.
58. Salonia A, Rocchini L, Sacca A, Pelluchi E, Ferrari M, et al. (2009). Acceptance of and discontinuation rate from paroxetine treatment in patients with lifelong premature ejaculation. J Sex Med. 6: 2868-2877.
59. Frijda N. (2007). The Laws of emotion. Mahwah, NJ: Lawrence Erlbaum Associates.
60. Le Doux J. (1999). The emotional brain. London: Phoenix.
61. Both S, Everaerd W, Laan E. (2007). Desire emerges from excitement: A psycho physiological perspective on sexual motivation. In E Janssen (Ed.), The psycho physiology of sex. (pp: 327-339). Bloomington, IN: Indiana University Press.
62. Yusof F, Sidi. H, Das S, Midin M, Kumar J, et al. (2018). Understanding the pathophysiology of premature ejaculation: Bridging the link between pharmacological and psychological interventions. Curr Drug Targets. 19: 856-864.
63. Kempeneers P, Desseilles M. (2014). The premature ejaculation 'disorder': Questioning the criterion of one minute of penetration. Sexologies. 23: 59-63.
64. Blanken I, Leusink P, Van Diest S, Gijs L, Van Lankveld JJ. (2015). Outcome predictors of internet-based brief sex therapy for sexual dysfunctions in heterosexual men. J Sex Marital Ther. 41: 531-43.
65. La Pera G, Nicastro A. (1996). A new treatment for premature ejaculation: The rehabilitation of the pelvic floor. J Sex Marital Ther. 22: 22-27.
66. Pastore AL, Palleschi G, Fuschi A, Maggioni C, Rago R, et al. (2014). Pelvic floor muscle rehabilitation for patients with lifelong premature ejaculation. Ther Adv Urol. 6: 83-88.
67. Porst H, Montorsi F, Rosen RC, Gaynor L, Gupe S, et al. (2007). The premature ejaculation prevalence and attitude (PEPA) survey: prevalence, comorbidities, and professional help-seeking. Eur Urol. 51: 816-823.
68. Rowland DL. (2011). Psychological impact of premature ejaculation and barriers to its recognition and treatment. Curr Med Res Opin. 27: 1509-1518.
69. Burri A, Giuliano F, McMahon C, Porst H. (2014). Female partner's perception of premature ejaculation and its impact on relationship breakups, relationship quality, and sexual satisfaction. J Sex Med. 11: 2243-2255.