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ORIGINAL ARTICLE

SIAMS survey on sexological screening during the assisted reproductive technologies in Italy

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Abstract
Purpose The assessment of sexual function is fundamental to the Assisted Reproductive Technology (ART). Nevertheless, it is still not a common clinical routine among infertility centres. The aim of this survey is to describe the main aspects of sexological screening that are considered in Italian centres of ART.
Methods After the consensus of the Italian Society of Andrology and Sexual Medicine (SIAMS), a mailing list of reproductive medicine centres was created. Then, we sent a questionnaire concerning the essential characteristics of sexological screening. The respondents to compilers of the questionnaire sent back the information from their centres, and an analysis of absolute frequencies and percentages was performed.
Results First, 16 centres completed and returned the questionnaire, while 5 ignored the invitation. The main findings concerned the wide use consideration of vardenafil 10 mg (68.7 %; 11/16) for the treatment of erectile dysfunction in comorbidity with reproductive problems, the diffuse administration of International Index of Erectile Function (68.2 %; 11/16) and Structured Interview for the Erectile Dysfunction (50 %; 8/16) as psychometric tools and lesser use of Female Sexual Function Index (31.2 %; 5/16) for the evaluation of female sexuality in the infertile couple.
Conclusions To conclude, we noticed a major focus on male sexuality and the eventual treatment or evaluation of sexual dysfunction compared to female sexuality. This aspect highlights an important issue for clinical practice to strongly consider and eventually reinforce. In this regard, improvement of the assessment and treatment of possible female sexual problems in reproductive medicine seems necessary.

Keywords SIAMS · Sexological screening · Italian survey · Medically assisted reproduction

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Introduction

Recently, reproductive medicine has been enriched by techniques and scientific contributions in favour of infertile couples and their right to become parents, although there is a different legislation among countries to regulate the activities of the infertility centers [1, 2]. In this regard, we considered a couple to be potentially infertile when reproductive difficulties for a period >12 months occurred, while regularly practising unprotected sexual intercourse [3].

Although Assisted Reproductive Technology (ART) is a successful intervention in infertility, a number of studies in the literature have shown that diagnosis of infertility is a powerful stress factor which influences the psychological and sexological health of the individual and of the couple [4–6]. Women experience pregnancy as a very important phase of life that strengthens their female identity and this is why female infertility may be very distressing. Also, men experience very high levels of stress, especially when the cause of infertility is attributable to them [7, 8].

In these cases, it is not very uncommon to detect sexual dysfunction in infertile couples secondary to the discovery

of the inability to reproduce. Hence, sexological treatment becomes very important [9–11].

In this regard, many types of sexual dysfunctions are associated with reproductive difficulties in males and females, and the most frequent sexual problems are erectile dysfunction, premature ejaculation, dyspareunia, vaginismus and disorders of sexual desire [12–16].

Hence, it is fundamental to consider sexological assessment as an integral part of infertility treatment, through the use of standardised psychometric tools administered by specialists in sexological psychometry [17, 18]. The psychometric tests mostly used during the evaluation of sexual function are the International Index of Erectile Function (IIEF), Female Sexual Function Index (FSFI), Premature Ejaculation Diagnostic Tool (PEDT), Structured Interview of Erectile Dysfunction (SIEDY) and the related short forms [18–22].

Sexological evaluation, together with the assessment of psychological health, is fundamental to hypothesising a possible intervention for sexual dysfunction, also from a pharmacological point of view. In fact, it was demonstrated that treatment with sildenafil citrate can improve the quality of spermatozoa in infertile men, with a particular action that interrupts the vicious circle of distress influencing reproductive capacity [9]. Therefore, it seems that the assessment and the subsequent treatment for sexual dysfunction improves fertility, in men and in women [10].

Although the international guidelines have established that psychological counselling should be present in the assessment phase, sexological aspects are not always considered during clinical practice [23]. Therefore, we have hypothesised that an Italian survey on the state of the art of sexological screening among reproductive medicine centres could be useful to clarify and eventually to improve the practice of sexological assessment during treatment for infertility.

Objectives

This observational protocol aims to evaluate the characteristics of sexological screening during the therapeutic practice of medically assisted reproduction, highlighting the strengths and weaknesses of the entire system, according to the centres involved in the survey.

Methodology

Recruitment

This study follows an observational design with the sequential recruitment of participating centres. After the executive council of the Italian Society of Andrology and Sexual Medicine (SIAMS) approved our survey protocol, we designed a mailing list of the possible centres treating reproductive problems, and we sent them our questionnaire inviting them to fill it out.

Assessment

The assessment was made with a questionnaire focused on sexological screening during ART. In particular, the questionnaire was composed of eight questions with both closed and open responses. The questions mainly regarded the various aspects and professional profiles involved in sexological anamnesis, the tools currently used for sexological diagnosis, the psychometric tools mostly administered to patients to assess their sexuality and also the PDE5 *inhibitors* prescribed to patients with sexual dysfunction such as erectile dysfunction. The time taken to complete the questionnaire was about 5 min [see the Appendix Table 2].

Statistical analysis

The main method of statistical analysis considered the analysis of frequencies and the percentages of the categorical variables extracted from the responses to the questionnaire. These categorical variables were calculated as absolute frequencies and percentages. MED-CALC statistical software, version 14, was used to perform the statistical analysis.

Results

Sixteen centres participated in our study, about one for each Italian region. However, five centres that were contacted ignored the survey for unknown reasons. Still, we observed that the mean number of patients per year treated by centres was 600 with a minimum of 80 and a maximum of 2300. The reproductive techniques mostly used were shown to be intrauterine insemination (IUI), in vitro fertilisation and embryo transfer (FIVET), intracytoplasmic sperm injection (ICSI), intracytoplasmatic morphologically selected sperm injection (IMSI)

The psychological counselling is provided in 68.7 % (11/16) of centres.

In the majority of cases, the sexological assessment is carried out by the andrologist (68.7 %, 11/16 centres), followed by the psychologist (12.5 %, 2/16) and the gynaecologist (12.5 %, 2/16). In 1/16 case, the specialist was not specified (Fig. 1a). Moreover, in 68.7 % of centres, the sexological assessment is performed for each partners of the couple separately (Fig. 1b).

The psychometric tools frequently used by centres were as follows: IIEF-15 = 56.2 %; IIEF-5 = 68.2 %;

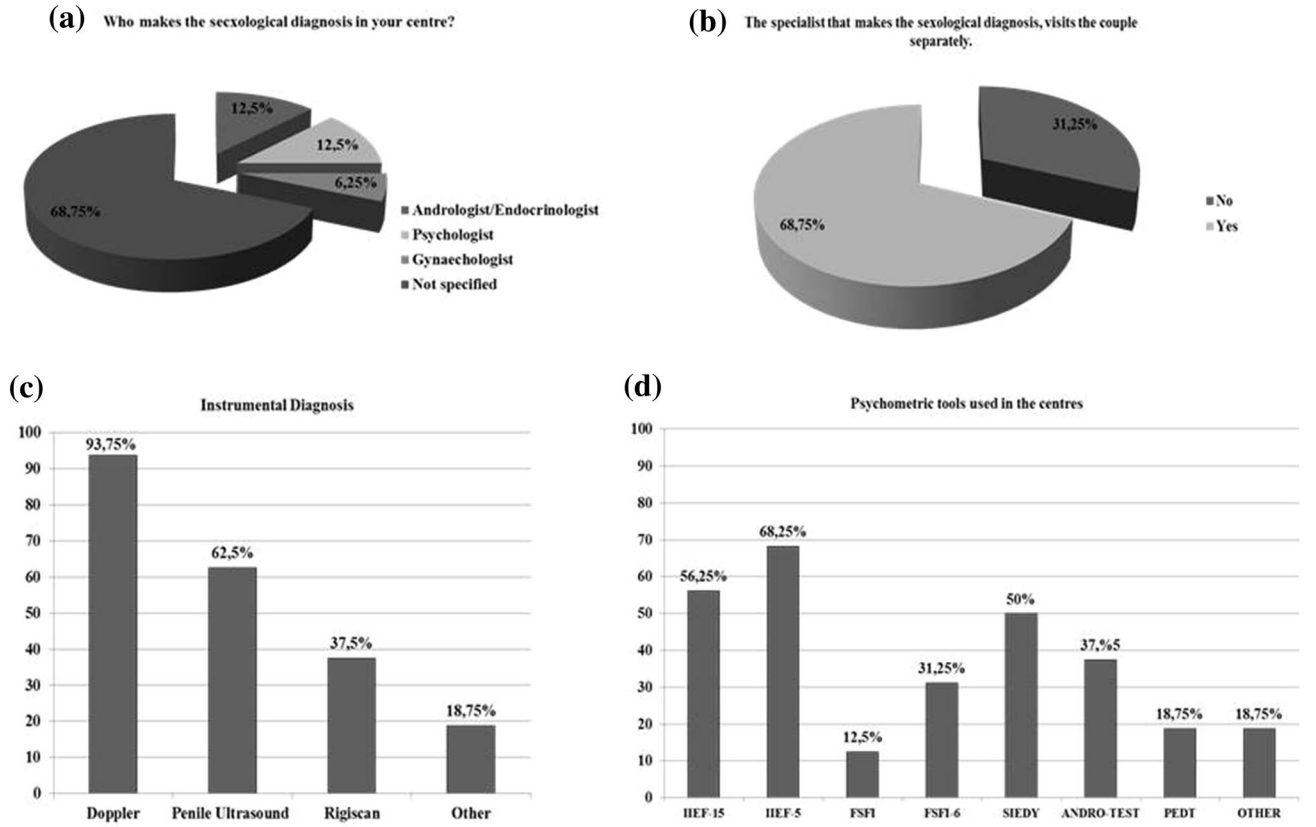

Fig. 1 In the mostly of centres the sexological assessment is effected manly by the andrologist or endocrinologist. Psychologist or the gynaecologist is less involved (**a**). In the vast part of centres, the members of the couple are separately visited (**b**). Penile Doppler is resulted the instrument mostly used, although also the echography and Rigiscan are considered (**c**). IIEF and SIEDY are the psychometric tool more administered in males, FSFI is also few considered in females (**d**). **c** and **d** was possible to indicate more than 1 response

Table 1 Sexological anamnesis in the symptomatic patients and in their partners

	Only the symptomatic patient (%; *n*)	Also the partner (%; *n*)
Desire	100; 16	100; 16
Sexual fantasy	75; 12	56.25; 9
Erection/lubrication	100; 16	93.75; 15
Orgasm	93.75; 15	87.5; 14
Resolution	62.5; 10	50; 8
Vaginismus/dyspareunia	81.25; 13	93.75; 15
Masturbation	93.75; 15	50; 8
Sexual orienting	68.75; 11	43.75; 7
Frequencies of sexual intercourses	100; 16	81.25; 16
Extramarital sexual intercourses	56.25; 9	93.75; 15

FSFI = 12.5 %; FSFI-6 = 31.2 %; SIEDY = 50 %; ANDROTEST = 37.5 %; PEDT = 18.7 %; other = 18.7 %. Moreover, as shown in Table 1, we listed the aspects of sexual behaviour evaluated by the MAR centres both in the patients suffering from sexual symptoms and in their partner.

The instrumental diagnostic used by centres in male patients with erectile dysfunction is composed of Penile Doppler in 93.7 % of cases, penile ultrasound in 62.5 % of cases, Rigiscan in 37.5 % and others in 18.7 % (Fig. 1c).

When considering drugs administration, we found the following prevalence of drugs for the treatment of erectile dysfuction: tadalafil 20 mg (43.7 %; 7/16); sildenafil 10 mg (37.5 %; 6/16); vardenafil (68.7 %; 6/16) (Fig. 2). In some cases, centres indicated more than one drug.

Moreover, sexual dysfunction diagnosed recurrently was shown as erectile dysfunction (56.2 %; 9/16); premature ejaculation (25 %; 4/16); hypoactive sexual desire disorder (18.7 %; 3/16) in males; orgasmic disorder (12.5 %; 2/16); vaginismus (31.25 %; 5/16); hypoactive sexual desire disorder (43.7 %; 7/16); dyspareunia (12.5 %; 2/16) in females (Fig. 3a, b).

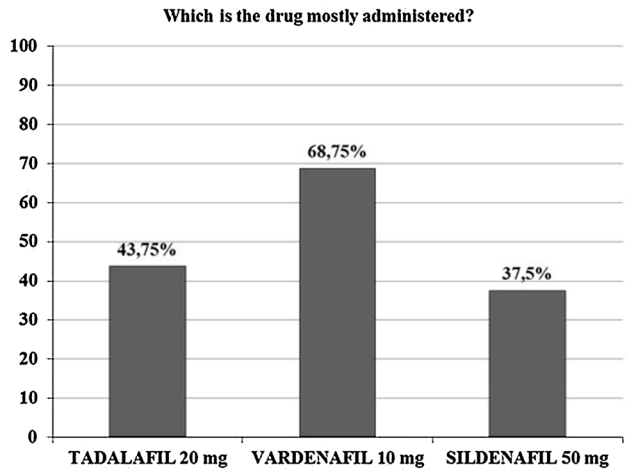

Fig. 2 Vardenafil 10 mg is the drug for the erectile difficulties mostly considered and administered in our screened centres. However, sildenafil or tadalafil are administered, in some centres together to vardenafil. In this question was possible to indicate more than 1 response

Discussion

The participation of centres of reproductive medicine permits us to describe in an indicative manner the state of the art of sexological screening in infertility treatment. In this regard, the andrologist still plays a central role in the assessment of sexual function in the couple referred for reproductive problems, although it is not a common therapeutic practice to involve both members of the couple during the evaluation of sexuality. This is a very important aspect that should be improved to better elucidate the relational dynamic of the couple and the possible psychological and sexological factors associated with reproductive difficulties. It is known that treatment in sexual medicine, such as sex therapy, considers the couple, and not the single subject, as the main patient, so in the same way also reproductive medicine should always consider infertility as a problem of the couple [11]. Therefore, it is suitable to treat the couple whether infertility affects male or female partner, mostly if there is also a sexual problem as comorbidity. Moreover, when we asked which diagnostic tools are mostly used in the centres, penile Doppler is revealed as the method most currently considered in the assessment of erectile function [24, 25]. However, penile ultrasound was also used by physicians during this type of evaluation, while Rigiscan is probably less considered because of the low validity [26]. On the other hand, when we investigated the aspects of sexual anamnesis currently evaluated, we found a positive confirmation regarding the several relational aspects that the operators of Italian centres investigate in both the patient reporting the sexual symptom and his/her partner. However, a few centres do not assess extramarital sexual relationships in the symptomatic patient or sexual orientation, above all in the partner. Therefore, it is necessary to enhance these aspects regarding the relational dimension involved in sexual behaviour.

Moreover, this survey has highlighted that *PDE5 inhibitors* are often considered in infertile males with erectile difficulties and vardenafil 10 mg is the most frequently administered drug by physicians.

In fact, the administration of vardenafil 10 mg significantly improves sperm motility in infertile men after 15 days of therapy for erectile problems [27–29]. The proprieties of vardenafil was however explored by another Siams survey and the authors have also highlighted the positive effects on the cardiovascular system through protective action [30]. In this survey, vardenafil was also the first line and the most administered drug in subjects with reproductive problems in comorbidity with erectile dysfunction.

Another important issue specifically concerns sexological diagnosis through psychometric tools such as IIEF,

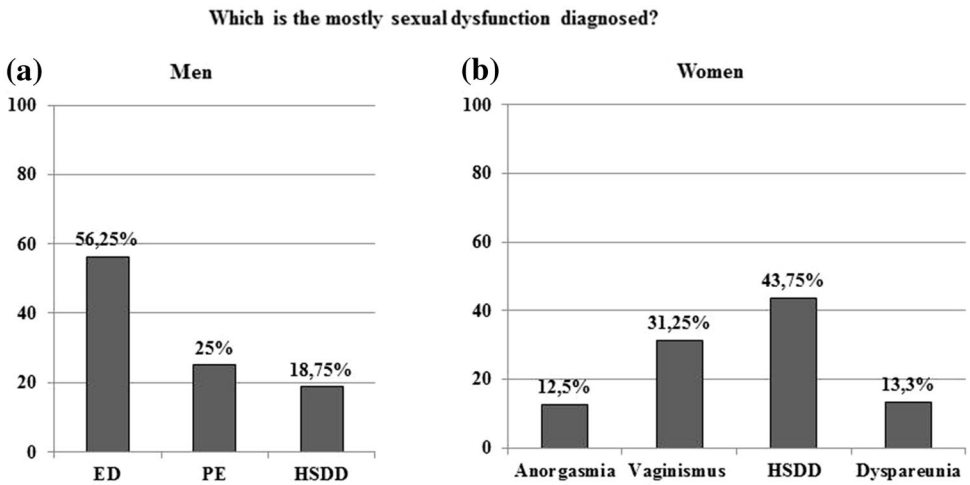

Fig. 3 Erectile dysfunction and premature ejaculation in males, decrease of sexual desire and vaginismus in females, are the sexual problems more frequently diagnosed during the clinical praxis in our centres. *ED* erectile dysfunction; *PE* premature ejaculation; *HSDD* hypoactive sexual desire disorder

FSFI and other self-report tests that assess several aspects of the cycle of sexual response together with an overall description of sexual function [20]. The recruited centres correctly use psychometric tools for sexological screening to better elucidate a possible diagnosis of sexual dysfunction and the short version of IIEF is the test mostly considered in males. Also, SIEDY is largely used, while the PEDT, for the diagnosis of possible premature ejaculation is rarely considered [20, 22].

More generally, IIEF, such as Siedy, in males is considered and administrated almost twice as often as FSFI in females. This last aspect highlights that sexological psychometry is still insufficiently used to assess sexuality in women, despite the major complexity of female sexuality, above all for pathological conditions [31]. Nevertheless, when we asked about the most frequent sexual dysfunction among patients seeking treatment for infertility, a panel of female sexual dysfunctions were found.

In fact, hypoactive sexual disorder and vaginismus are very frequent, although also dyspareunia and orgasmic disorder were referred. For example, the possible comorbidity of vaginismus with fertility problems needs to be taken into consideration, because it characterises the unconsummated marriage [32]. In this regard, it is also fundamental to evaluate the possible psychological factors associated with infertility and vaginismus [31, 33, 34]. In males, as expected, erectile dysfunction and premature ejaculation are the most frequent sexual problems diagnosed by fertility physicians in their patients, and in these cases it is necessary to consider both the organic and psychogenic comorbidities [35].

Despite this, more than one-third of centres does not have a psychologist or a sexologist to assess the psychological distress and sexual dysfunction related to infertility.

Limitations

This survey suffers from some limitations concerning above all the representativeness of reproductive medicine centres. Moreover, the data collection was observational and did not evaluate the prevalence of sexual dysfunction among infertile couples seeking treatment for infertility. Further investigation on the relationship between sexual assessment and ART is needed to better improve the adherence to treatment and the outcome of infertility treatment, such as the collect to patient's data to elucidate the psycho-sexological factors.

Conclusion

In conclusion, we maintain that it is useful to highlight the strengths and weaknesses characterising sexological screening in reproductive medicine. Certainly, the evidence that almost all the centres correctly assess sexuality during fertility treatment is a strength of reproductive medicine. In this regard, the use of psychometric tools and also of pharmacotherapy in male sexual dysfunction was a considerable element characterising the skilfulness of the medical system in treating reproductive problems. On the contrary, we found once again that the psychometric assessment of female sexuality is less practised. Hence, the evaluation of female sexual function is an aspect that needs to be improved.

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Conflict of interest Professor Jannini has been or is speaker and consultant of Janseen, Bayer, Lilly, JSK, Ibsa, Pfizer and Menarini. All other authors declare that they have no conflict of interest.

Ethical standard The executive council of Italian Society of Andrology and Sexual Medicine (SIAMS) has approved this study.

Informed consent Each participant has signed the informed consent.

Appendix

See Table 2.

Table 2 Sexological screening

1) Who makes the sexological diagnosis in the your center?	To specify:
2) The specialist that makes the sexological diagnosis, visits separately the members of the couple.	Yes No
3) Does your center use the instrumental diagnostic for the etiological diagnosis of possible sexual dysfunctions? (Doppler +/- PG, Rigiscan, VSS, termography, ecography, etc.)?	Yes No To specify:
4) Is it effected a sexological anamnesis in your center according to the following points?:	
4.1) Affective relationship (stability, duration, conflict).	Yes No
4.2) What is investigated on the sexual function aspects?	
Desire	□ patient □ partner
Sexual fantasies	□ patient □ partner
Erection / Lubrication Orgasm	□ patient □ partner
Resolution /refractory period	□ patient □ partner
Dispareunia/ Vaginismus	□ patient □ partner
Frequency of sexual intercourses	□ patient □ partner
Masturbation	□ patient □ partner
Sexual orienting	□ patient □ partner
Extra-marital sexual intercourses	□ patient □ partner
4.3) Adequacy of the place where the couple has sexual intercourses.	Yes No
4.4) Conflicts with familiars or with other flat mates	Yes No
4.5) Job stress.	Yes No
4.6) Sexological anamnesis in referring to the past	Yes No
5) Are administered PDE5 inhibitors during the sperm collection or during the programmed intercourses?	Yes At times No
5.1) If yes. Which is the drug with the relative dosage mostly administered?	tadalafil vardenafil sildenafil
6) Are administered standardized psychometric tools to evaluate the sexual function, in your centre?	Yes At times No
6.1) If yes. Which are usually administered?	- IEF-15 - IIEF-5 - FSFI - FSFI-6 - SIEDY - ANDROTEST - PEDT - OTHER
7) What is the sexual dysfunction mostly associated to infertility in your clinical experience?	In male (to specify…) In female (to specify…)
8) Is usually considered the counseling and the assessment of a psychologist for the infertile couple?	Yes No

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