



Submitted on: 12/23/2021

Approved on: 01/20/2025

ORIGINAL ARTICLE

Syndromic Management of Sexually Transmitted Infections in Adolescents: from Guidelines to Practice

Inês Afonso Belo¹, Ana Pereira Lemos¹, Pedro Gaspar², Marco Fernandes¹, Pascoal Moleiro¹

Keywords:

Sexually transmitted diseases,
Adolescent,
Practice guideline,
Reproductive health.

Abstract

Objective: Dermatology, Gynecology, Pediatrics and family physicians are the main medical specialties responsible for the management of sexually transmitted infections in adolescents therefore we aimed to characterize their practices and compared them. **Methods:** Correlational study, with an anonymous online survey based on the recommendations of sexually transmitted infections syndromic management in adolescents, elaborated by the Adolescent Medicine Portuguese Society and Pediatric Infectiology Society. For each item, we compared the mean values obtained by specialty, rank and years of medical practice, studying sociodemographic and sexually transmitted infections management variables, using a semantic differential scale 1- "Totally Disagree" to 5- "Totally Agree". **Results:** We obtained 334 responses to the survey, 57% (191) corresponded to attending physicians, 41% (138) to pediatricians, 30% (100) to family physicians, 23% (76) to gynecologists and 6% (20) to dermatologists. Dermatology and Gynecology considered themselves to be the specialties with the most actualized knowledge on the subject [Pediatrics 2,91 (1,02); Family Medicine 2,82 (1,01); Gynecology 3,41 (0,82); Dermatology 3,80 (1,01), $p < 0,001$], even though Pediatrics seemed to be more familiarized with the referred recommendations [Pediatrics 3,45 (1,20); Family Medicine 2,40 (1,23); Gynecology 2,80 (1,40); Dermatology 2,95 (1,39), $p < 0,001$]. **Conclusions:** Despite the knowledge and practices are, in general, adequate to the national and international guidelines, there are still some gaps, namely in aspects related to the physical examination, investigation and treatment. It is mandatory to invest in training health care professionals for improve management of sexually transmitted infections in adolescents.

¹ Centro Hospitalar de Leiria, Departamento de Pediatria - Leiria - Leiria - Portugal.

² Instituto Politécnico de Leiria, Center for Innovative Care and Health Technology - Leiria - Leiria - Portugal.

Correspondence to:

Inês Afonso Belo.

Centro Hospitalar de Leiria. Rua de Santo André, nº 2410-197, Leiria, Portugal. E-mail: ines.ac.belo@gmail.com

INTRODUCTION

Adolescence is defined by the World Health Organization (WHO) as the period between the ages of ten and 19.¹ Given that there is a lower perception of risk during adolescence, and also considering that the average age of first sexual intercourse has been decreasing,²⁻⁴ adolescents are considered a priority intervention group in the scope of the prevention of sexually transmitted infections (STIs) and reproductive health.^{5,6} Spaces and consultations (such as Adolescent Medicine) have been created to care for adolescents and young people; which, among other objectives, aim to improve this age group's access to the resources necessary for guidance and clarification on sexual and reproductive health. Care for these age groups is based on the guiding principle of confidentiality and free and open access; and must be carried out by professionals with technical competence, respect and sensitivity to understand the reality of each adolescent/young person. STIs are all infections in which sexual contact is the main route of transmission.⁷ They have a varied etiology and their diagnosis is difficult and often delayed, due to their frequently asymptomatic evolution, non-specific clinical features or inhibition in seeking health care due to the stigma associated with them.^{8,9} The lack of effective treatment can result in serious complications and sequelae, including infertility, anogenital cancer and premature death, as well as congenital and perinatal infections.¹⁰ An effective approach to STIs acquires special relevance for their early identification, for the treatment and/or prevention of infection in partners and for the avoidance of new infections in the same individual.¹¹

In order to provide guidance and standardize clinical practices regarding the approach to STIs, specific recommendations have emerged, both internationally and at national level.¹⁰⁻¹³ The WHO recommends a syndromic approach to STIs, which consists of including these infections within pre-established syndromes, based on signs and symptoms, using flowcharts that simplify etiological identification.¹⁴ This approach also advocates the institution of immediate treatment, even in the absence of diagnostic confirmation, in order to not miss the opportunity for treatment, and the counseling and guidance of the patient and his/her partner.¹⁴ In all syndromic cases, it is recommended to carry out additional investigation, such as antibodies (Ab) anti-human immunodeficiency virus (HIV) 1 and 2, Ab anti-hepatitis C virus (HCV), Hepatitis B virus surface antigen (HBsAg) and Ab anti HBc and the VDRL/RPR (venereal disease research laboratory/rapid plasma reaction) test.

In 2015, joint recommendations from the Portuguese Society of Adolescent Medicine (SPMA) and the Society of Pediatric Infectious Diseases (SIP) on the syndromic approach to STIs in adolescence were published in the form of a practical document that could help all physicians standardize their current practice.¹¹

Currently in Portugal, the medical specialties most responsible for the prevention, diagnosis and treatment of

STIs in adolescents are General and Family Medicine (GFM), Dermatology, Gynecology and Obstetrics and Pediatrics. It is therefore of great importance to understand the practices of approach and guidance of clinicians in these specialties, and to understand their context in relation to the most current recommendations.

Our study had as its main objectives to characterize and compare the practices of GFM physicians, dermatologists, gynecologists and pediatricians in the approach to STIs in adolescents, and to assess the level of knowledge of the current recommendations issued in 2015 by the SPMA and the SIP. We also intend to determine the need for training in the area of STIs.

MATERIALS AND METHODS

We conducted a descriptive and correlational study, with an analytical component, using an original self-administered questionnaire, aimed at doctors specializing in General and Family Medicine, Dermatology, Gynecology and Obstetrics and Pediatrics, working in Portugal. The questionnaire was prepared in accordance with the recommendations of the SPMA and the SIP published in 2015 on the syndromic approach to STIs in adolescence. To validate the questionnaire, it was reviewed by experts from various areas through a Delphi Panel, assessing the relevance and adequacy of each question, with subsequent correction by the researchers.

The questionnaire, accessible on an online platform, was disseminated through the social networks of the targeted professional groups and by the Portuguese Society of Pediatrics and the Portuguese Society of Gynecology.

Data were collected between January 24 and April 3, 2021. Sociodemographic variables were analyzed using multiple-choice questions, and medical practices regarding initial approach, physical examination, diagnosis, treatment, and guidance for STIs in adolescence were analyzed using a Likert scale (1-“strongly disagree” to 5-“strongly agree”). Data were computerized and analyzed using the Statistical Package for Social Sciences (SPSS), version 25, with a significance level of 0.05. Nonparametric tests (Mann-Whitney, Kruskal-Wallis, and Dunn-Bonferroni) were used.

To analyze the results, the questions were grouped into four scales: initial approach, standards and knowledge (IASK), physical examination (EO), investigation and treatment (IT), and monitoring and reassessment (AR).

The sample was analyzed by specialty [Pediatrics (P); General and Family Medicine (GMF); Gynecology (G) and Dermatology (D)], level of training [Specialist (E); Specialized Training Intern (IFE)] and years of clinical practice [A1 (<5 years); A2 (5–10 years); A3 (11–20 years) and A4 (>20 years)]. The results presented for each question (Q) express the mean and standard deviation of each group.

The reliability of each item was measured by the internal consistency coefficient (Cronbach's alpha) and the validity

was verified by the correlation of each item with the total scale excluding the item, with results considered acceptable (in most items correlations with the total scale greater than 0.2 and Cronbach's alphas greater than 0.6 in the total scales) given that this was an exploratory study with instruments never used.¹⁵⁻¹⁷

The study was approved by the Ethics Committee of the Leiria Hospital Center. Participation in the study was voluntary and the right to confidentiality and anonymity was guaranteed. Questionnaires without informed consent, incompletely or incorrectly completed were not considered.

RESULTS

We obtained 334 responses to the questionnaire, 79% (265) of which were female and 57% (191) were specialists (E). Regarding the time of clinical practice, 34% (113) had been in practice for less than 5 years, 31% (104) between 5 and 10 years, 17% (57) between 11 and 20 years and 18% (60) more than 20 years. Regarding the distribution by specialty, we obtained 41% (138) responses for P, 30% (100) for GFM, 23% (76) for G and 6% (20) for D. Of the respondents, 37% (122) carried out Pediatrics consultations, 36% (122) for Family Planning/Child Health, 11% (37) for Gynecology, 4% (12) for STIs, 3% (11) for Adolescent Medicine and 9% (30) carried out another type of consultation. The average weekly attendance was 1 to 5 adolescents for 59% (197), 6 to 10 adolescents for 26% (87), 11 to 15 adolescents for 10% (33), 16 to 20 adolescents for 3% (11) and more than 20 adolescents for 2% (6) of the clinicians. In Table 1, it can be seen that P is the specialty that demonstrates being least comfortable addressing STI prevention in its daily medical practice with adolescents (Q1.6), but also the one that reports being most familiar with the most recent recommendations from the SPMA and SIP (Q2), and the one that uses them most when suspected of STI (Q2.1). In their daily medical practice with adolescents, G and GFM, when compared to P, more frequently provide an environment of trust so that adolescents can talk about their sexual life (Q1.4) and address, when relevant, STI prevention (Q1.5). D and G are the specialties that most consider their knowledge to be up-to-date regarding the approach to STIs in adolescence (Q22), however the majority of participants from all specialties consider it relevant to undertake additional training in this area (Q25). Analyzing Table 1, D clinicians are the ones who most consider "periaceous penile papules" (Q7.5) and "Fordyce papules" (Q7.6) as findings relevant to the physical examination and that should be investigated and valued when an STI is suspected in adolescents. G is the specialty that least considers "clitoromegaly" as a finding that should be investigated and valued when an STI is suspected in adolescents (Q7.8) and, when compared to D and P, values and investigates "oral lesions" (Q7.1) and "skin rashes" (Q7.3) less.

Comparing G with GMF (Table 2), the former recommends less the determination of anti-HIV 1 and 2 antibodies

(Q10.1) and HBsAg and anti-Hepatitis B virus core antibody (HBc) (Q10.4) as a complementary investigation in all symptomatic cases suggestive of STI. P advocates more, when compared to G, that STI treatment should be empirical based on the symptomatic case (Q12), which should be started as early as possible (Q13). In the case of possible non-adherence to therapy, D advocates more frequently than GFM that treatment should be provided at that precise moment (Q16). GFM, compared to D and G, considers more that at the time of reassessment it should provide teaching on how to use a condom (Q20.7) and should provide condoms or confirm the possibility of acquiring them (Q20.8). Table 2 - Results by specialty in the Investigation and Treatment and Monitoring and Reassessment Scales (Kruskal-Wallis test and Dunn-Bonferroni test)

Analyzing by level of training (Table 3), in daily medical practice with adolescents, the Es stated that they ensured the right to confidentiality more (Q1.3) and addressed the topic of STIs more, when relevant (Q1.5). The Es, in relation to the IFEs, seem to be more familiar with the recommendations of the SPMA and the SIP (Q2) and have more up-to-date knowledge on the approach to STIs in adolescence (Q22). Regarding the findings relevant to the physical examination and that should be investigated and valued in the event of suspected STIs in adolescents, comparing the Es and the IFEs, the Es valued "Fordyce papules" (Q7.6) more, while the IFEs considered "vaginal secretions and endocervical discharge" (Q7.7) more relevant.

According to Table 4, in their daily medical practice, professionals with less than 5 years of clinical practice (A1) were those who reported providing less of a trusting environment for adolescents to talk about their sexual lives (Q1.4), feeling less comfortable addressing the topic of STI prevention with adolescents (Q1.6) and doing so less frequently (Q1.5). A2, compared to A4, advocates more that further investigation should only be directed at the syndrome in question (Q9) and that treatment should only be initiated after diagnostic confirmation (Q11).

DISCUSSION

STIs are a major public health problem. Globally, more than one million people acquire a treatable STI every day,¹⁰ and it is estimated that one in 20 young people aged 15 to 24 acquires an STI each year.¹⁸ WHO has defined STIs as a public health threat and recently set the target of eliminating them by 2030, through strategies such as preventing new cases, improving overall access to health care and treating STIs early.¹⁹

Screening rates for sexuality education and STIs remain inappropriately low among primary health care (PHC) and paediatricians. According to the study by Alexander et al, paediatricians spend, on average, 36 seconds of consultation time with adolescents on the topic of sexual education.²⁰ Henry-Reid et al state that 46% of pediatricians screen all sexually active adolescents for STIs and 27% only screen for HIV infection.²¹

Table 1. Results by specialty in the Initial Approach, Standards and Knowledge and Objective Examination Scales (Kruskal-Wallis Test and Dunn-Bonferroni Test).

Items	Specialty								Kruskal-Wallis Test		Dunn-Bonferroni
	D (n=20)		G (n=76)		MGF (n=100)		P (n=138)				
	M	SD	M	SD	M	SD	M	SD	χ2	p	
IASK scale											
1.1 In my daily medical practice I regularly come into contact with teenagers.	3.60	1.47	3.14	1.04	3.95	1.05	4.25	0.88	49.20	0.000	G<GFM & G<P
1.3 In my daily medical practice with adolescents, I ensure the right to confidentiality	4.90	0.31	4.86	0.53	4.76	0.47	4.60	0.62	17.41	0.001	P<G
2 I am familiar with the most recent recommendations of the Portuguese Society of Adolescent Medicine and the Society of Pediatric Infectious Diseases	2.95	1.39	2.80	1.40	2.40	1.23	3.45	1.20	37.16	0.000	P>GFM & P>G
2.1 I resort to its use when I suspect an STI in adolescents.	2.45	1.43	2.87	1.43	2.58	1.37	3.91	1.22	60.84	0.000	P>D & P>G & P> GFM
2.2 I consider them useful in approaching the pathology in question.	3.70	0.92	3.74	1.14	3.74	1.12	4.36	0.90	30.45	0.000	P>D & P>G & P> GFM
2.2 I consider them useful in approaching the pathology in question.	3.70	0.92	3.74	1.14	3.74	1.12	4.36	0.90	30.45	0.000	P>D & P>G & P> GFM
22 I consider that my knowledge is up to date regarding the approach to STIs in adolescence.	3.80	1.01	3.41	0.82	2.82	1.01	2.91	1.02	28.92	0.000	P<G & P<D & G> GFM & D> GFM
25 I consider it pertinent to carry out additional training in this area	4.85	0.49	4.67	0.50	4.82	0.41	4.78	0.48	7.37	0.061	
Total IASK	4.16	0.31	4.07	0.39	3.94	0.37	4.11	0.43	13.52	0.004	
OE Scale											
7.2 I consider "adenopathies" as pertinent findings in the objective examination and that should be investigated and valued in the case of suspected STIs in adolescents.	4.75	0.44	4.39	0.69	4.55	0.67	4.65	0.58	9.65	0.022	P>G
7.4 I consider "phimosis" as a finding relevant to the objective examination and that should be investigated and valued in suspected STIs in adolescents.	3.95	1.36	2.83	1.11	3.23	1.22	3.19	1.33	13.24	0.004	D>G
OE Total	4.32	0.30	3.51	0.40	3.65	0.44	3.67	0.46	41.96	0.000	D>G, GFM & P

Legend: IASK – Initial Approach, Standards and Knowledge; D – Dermatology; SD – standard deviation; OE – Objective Examination; G – Gynecology; M – mean; GFM– General and Family Medicine; P – Pediatrics.

Table 2. Results by specialty in the Investigation and Treatment and Monitoring and Reassessment Scales (Kruskal-Wallis Test and Dunn-Bonferroni Test).

Items	Specialty								Kruskal-Wallis test		Dunn-Bonferroni test
	D (n=20)		G (n=76)		GFM (n=100)		P (n=138)				
	M	SD	M	SD	M	SD	M	SD	χ ²	p	
9 Further investigation should only be directed at the syndrome in question	4.70	0.57	3.55	1.34	4.18	1.10	3.85	1.31	20.59	0.000	D>G & D>P & GFM >G
10.7 It is recommended to determine the VDRL/RPR test as a complementary investigation in all symptomatic cases suggestive of STI.	5.00	-	4.47	0.77	4.73	0.69	4.60	0.80	16.95	0.001	G<D
15 Notification of a Mandatory Notifiable Disease must be carried out in the National Epidemiological Surveillance System (SINAVE) in suspected cases of gonorrhea and C. Trachomatis infection.	4.95	0.22	4.22	1.16	4.62	0.96	4.38	1.03	16.14	0.001	D>G, GFM & P
16 In the event of possible non-adherence to therapy, treatment must be provided at that precise moment.	4.95	0.22	4.61	0.67	4.58	0.71	4.74	0.68	11.24	0.010	A>C
Total IT	4.56	0.28	4.11	0.39	4.33	0.39	4.37	0.37	30.88	0.000	D>G, GFM & P
19 The reassessment must be carried out over a period of more than one month.	3.70	1.45	3.38	1.25	3.49	1.27	3.83	1.22	8.33	0.040	P>G
20.3 At the time of reassessment I must confirm therapeutic adherence.	5.00	-	4.80	0.46	4.92	0.27	4.92	0.36	10.15	0.017	P>G
20.7 At the time of the reassessment I must provide instruction on how to use a condom.	4.40	0.94	4.64	0.58	4.93	0.26	4.81	0.43	21.19	0.000	GFM >A & G
20.8 At the time of reassessment I must provide condoms or confirm the possibility of purchasing them.	4.60	0.68	4.75	0.49	4.95	0.26	4.84	0.42	17.21	0.001	GFM >D & G
21.1 At the 3-month reassessment date, it is recommended to determine anti-HIV 1 and 2 antibodies.	4.30	1.13	4.16	1.11	4.53	0.85	4.49	0.88	8.00	0.046	GFM >G
21.2 At the 3-month reassessment date, determination of anti-HAV antibodies is recommended.	4.40	0.68	3.39	1.41	3.72	1.36	3.40	1.48	10.52	0.015	D>P
21.3 At the 3-month reassessment date, it is recommended to determine anti-EBV antibodies.	4.50	0.61	3.28	1.38	3.59	1.36	3.84	1.28	16.70	0.001	D>G & P>G
Total AR	4.35	0.39	4.11	0.40	4.29	0.33	4.34	0.40	18.04	0.000	GFM>G & P>G

Legend: AR – Monitoring and Reassessment; D – Dermatology; SD – standard deviation; G – Gynecology; IT – Investigation and treatment; M – mean; GFM – General and Family Medicine; P – Pediatrics.

Lack of time was mentioned as the main barrier to counseling on sexual health, but other causes were also cited, such as cultural and linguistic differences, clinicians' discomfort in addressing this topic, and recognition of adolescents' concerns about confidentiality.^{22,23} In our sample, P revealed to be the clinicians who feel least comfortable addressing STI prevention with adolescents and, when compared with G and FGM, they reported doing so less often and providing less of an environment of trust and confidentiality. Although Pediatrics has only included adolescents up to 18 years of age since 2010,²⁴ which required older Ps to adapt to an age group with

different needs, it was the IFEs and clinicians with less than 5 years of experience who were less comfortable and less likely to address the issue of STI prevention in daily medical practice with adolescents.

Although D, G, E, and A4 were the groups that considered their knowledge to be up-to-date regarding the approach to STIs in adolescence, it is important to emphasize that the majority of clinicians in the sample considered additional training in this area to be pertinent, with no difference being found regarding specialty, level of training, or number of years of clinical practice. We obtained less favourable results

Table 3. Results by level of training (Mann Whitney test).

Item	Level of Training				Mann Whitney Test	
	E (n=191)		STI (n=143)			
	M	SD	M	SD	U	p
IASK scale						
1.4 In my daily medical practice with adolescents, I provide an environment of trust so that they can talk about their sexual lives.	4.47	0.85	4.22	0.87	10882.0	0.000
1.5 In my daily medical practice with adolescents, I address, when relevant, the prevention of sexually transmitted infections.	4.55	0.83	4.24	0.90	10758.5	0.000
2 I am familiar with the most recent recommendations of the Portuguese Society of Adolescent Medicine and the Society of Pediatric Infectious Diseases	3.15	1.83	2.71	1.25	11089.0	0.003
2.2 I consider them useful in approaching the pathology in question	4.10	1.02	3.85	1.12	11910.5	0.034
22 I consider that my knowledge is up to date regarding the approach to STIs in adolescence.	3.26	1.01	2.77	0.95	9782.0	0.000
25 I consider it pertinent to undertake additional training in this area	4.76	0.50	4.79	0.43	13499.0	0.797
OE Scale						
7.6 I consider "Fordyce papules" as pertinent findings in the objective examination and that they should be investigated and valued in the event of suspected STI in adolescents.	3.07	1.45	2.69	1.42	11650.5	0.018
7.7 I consider "vaginal secretions and endocervical discharge" as pertinent findings in the objective examination and that they should be investigated and valued in the event of suspected STI in adolescents.	1.43	0.86	1.55	0.85	12155.5	0.037
IT Scale						
14 STI treatment should be extended to sexual partner(s)	4.77	0.57	4.66	0.60	12311.5	0.032
AR Scale						
21.7 At the 3-month reassessment date, it is recommended to determine the VDRL/RPR Test	4.13	1.19	3.77	1.32	11494.5	0.008

Legend: IASK – Initial Approach, Standards and Knowledge; AR – Monitoring and Reassessment; SD – standard deviation; E – Specialist; OE – Objective Examination; STI – Specialized Training Intern; IT – Investigation and Treatment; M – Mean.

when questioning about findings on physical examination, namely due to the overvaluation of some that reflect variants of normal, such as “periaceous penile papules” and “Fordyce papules”, by D and E, and the undervaluation of others, such as “oral lesions” and “skin rashes”, by G. Also in terms of complementary research and treatment, G revealed itself to be the specialty that least researches the presence of anti-HCV antibodies, anti-HIV 1 and 2 antibodies, AgHbs and VDRL in all symptomatic cases suggestive of STI, as recommended in national and international recommendations.¹¹⁻¹³. Investing in training professionals on the subject of STIs could be an added value in combating this public health problem. Enriching knowledge and thus increasing confidence can contribute to improving the approach to STIs.

Offering appropriate treatment for STIs in the first contact between patients and healthcare providers is an important public health measure. In the case of adolescents, it is particularly relevant due to the possibility of influencing future sexual behaviors and treatment-seeking practices at a critical stage of development. Adherence to treatment is also a concern, given that, in one study, after screening asymptomatic adolescents,

it was found that only 73% complied with the prescribed treatment.²⁵ In our study, the majority of professionals in the four specialties advocate that treatment should be empirical and instituted as early as possible, although there is a difference between G and P, with the latter being the one that does so more frequently. In the case of possible non-adherence to treatment, comparing D with FGM, it was evident that the former provides more immediate treatment to adolescents with suspected STIs, which may be due to the fact that there are fewer resources available (both for etiological investigation and treatment) in health centers.

In conclusion, the approach to STIs in adolescents is a challenge for most professionals. Since there are no similar previous studies to our knowledge, this work allows us to examine the practices of clinicians from different specialties on this topic, which is currently so relevant, and to understand to what extent they comply with national and international recommendations.

The majority of clinicians adapt their medical practice to the aforementioned guidelines. However, there are still some gaps in knowledge about the objective examination, namely

Table 4. Results by years of clinical practice (Kruskal-Wallis test and Dunn-Bonferroni test).

Items	Years in Clinical Practice								Kruskal-Wallis Test		Dunn-Bonferroni Test
	A1 (n=113)		A2 (n=104)		A3 (n=57)		A4 (n=60)				
	M	SD	M	SD	M	SD	M	SD	χ2	p	
IASK scale											
1.3 In my daily medical practice with adolescents, I ensure the right to confidentiality.	4.53	0.68	4.75	0.49	4.87	0.38	4.90	0.39	28.05	0.000	A1<A3 & A1<A4
2 I am familiar with the most recent recommendations of the Portuguese Society of Adolescent Medicine and the Society of Pediatric Infectious Diseases	2.71	1.27	2.95	1.35	2.87	1.32	3.50	1.33	14.17	0.003	A1<A4
2.1 I resort to its use when an STI is suspected in adolescents	3.00	1.48	3.28	1.45	2.96	1.41	3.56	1.40	7.75	0.051	A1<A4
22 I consider that my knowledge is up to date regarding the approach to STIs in adolescence.	2.71	0.93	3.07	0.97	3.22	0.98	3.45	1.06	24.55	0.000	A1<A3 & A1<A4
25 I consider it pertinent to undertake additional training in this area	4.82	0.38	4.75	0.49	4.70	0.53	4.78	0.49	2.23	0.524	-
OE Scale											
7.7 I consider "vaginal secretions and endocervical discharge" as pertinent findings in the objective examination and that they should be investigated and valued in the event of suspected STI in adolescents.	1.62	0.90	1.32	0.63	1.46	0.93	1.52	1.00	8.79	0.032	A1>A2
7.11 I consider "genital lesions" as pertinent findings in the objective examination and that they should be investigated and valued in the event of suspected STIs in adolescents.	4.65	0.50	4.84	0.37	4.61	0.65	4.67	0.80	10.00	0.019	A2>A1
IT Scale											
9 Further investigation should only be directed at the syndrome in question	4.02	1.16	4.06	1.24	3.95	1.30	3.53	1.35	8.37	0.039	A2>A4
10.7 It is recommended to determine the VDRL/RPR test as a complementary investigation in all symptomatic cases suggestive of STI.	4.56	0.72	4.71	0.73	4.54	0.83	4.73	0.73	9.78	0.021	A2>A1 & A4>A1
AR Scale											
19 The reassessment must be carried out over a period of more than one month	3.52	1.28	3.89	1.17	3.61	1.36	3.32	1.24	9.50	0.023	A2>A4
20.7 At the time of the reassessment, I must provide instruction on how to use a condom.	4.79	0.49	4.91	0.28	4.61	0.73	4.72	0.45	13.34	0.004	A2>A4

Legend: IASK – Initial Approach, Standards and Knowledge; AR – Monitoring and Reassessment; A1 - <5 years; A2 – 5-10 years; A3 – 11-20 years; A4 - > 20 years; SD – standard deviation; OE – Objective examination; IT – Investigation and Treatment; M – mean.

the undervaluation and overvaluation of some clinical findings, the investigation only directed at the suspected syndrome and the treatment not implemented empirically when diagnosis.

It is therefore essential to invest in training professionals to combat this important public health problem.

REFERENCES

1. World Health Organization (WHO). Study Group on Programming Adolescent Health, Programming for Adolescent Health and Development. Geneva: 1999. [Access in 2020 Jan 11]. Available from: [https://iris.who.int/bitstream/handle/10665/42149/WHO_TRS_886_\(p1-p144\).pdf?sequence=1](https://iris.who.int/bitstream/handle/10665/42149/WHO_TRS_886_(p1-p144).pdf?sequence=1).

2. Mendes N, Palma F, Serrano F. Sexual and reproductive health of Portuguese adolescents. *Int J Adolesc Med Health*. 2014;26(1):3-12.
3. Shu C, Fu A, Lu J, Yin M, Chen Y, Qin T, et al. Association between age at first sexual intercourse and knowledge, attitudes and practices regarding reproductive health and unplanned pregnancy: a cross-sectional study. *Public Health*. 2016;135:104-13.
4. Hansen B, Kjaer S, Arnheim-Dahlström L, Liaw K, Juul K, Thomsen L, et al. Age at first intercourse, number of partners and sexually transmitted infection prevalence among Danish, Norwegian and Swedish women: estimates and trends from nationally representative cross-sectional surveys of more than 100 000 women. *Acta Obstet Gynecol Scand*. 2020;99(2):175-85.
5. Portugal. Assembleia da República. Decreto-Lei nº 60/2009. Lisboa: Diário da República; 2019. [Acesso em 2020 Jan 11]. Disponível em: <https://dre.pt/dre/detalhe/lei/60-2009-494016>.
6. Miranda P, Aquino J, Monteiro R, Dixe MA, Luz A, Moleiro P. Comportamentos sexuais: estudo em jovens. *Einstein (S Paulo)*. 2018;16(3):1-7.
7. World Health Organization (WHO). Sexually Transmitted Infections (STIs). Geneva: WHO; 2024 May 21. [Access in 2021 Oct 4]. Available from: [https://www.who.int/news-room/fact-sheets/detail/sexually-transmitted-infections-\(stis\)](https://www.who.int/news-room/fact-sheets/detail/sexually-transmitted-infections-(stis)).
8. Varin G, Santiváñez Caballero M. Infecciones de transmisión sexual. Aspectos psicosociales, clínicos, diagnóstico y tratamiento. In: Hidalgo Vicario MI, Redondo Romero AM, Castellano Barca G. *Medicina de la adolescencia. Atención integral*. 2. ed. Madrid: Ergon; 2012. p.865-74.
9. Ferreira MA, Alvim NA, Teixeira ML, Veloso RC. Saberes de adolescentes: Estilo de vida y cuidado a la salud. *Texto Contexto Enferm*. 2007;16(2):217-24.
10. World Health Organization (WHO). Global HIV, Hepatitis and STIs Programmes (HHS) Guidelines Review Committee, Guidelines for the management of symptomatic sexually transmitted infections, 2021. Geneva: WHO; 2021. [Access in 2021 Oct 4]. Available from: <https://www.who.int/publications/i/item/9789240024168>.
11. Moleiro P, Arriaga C, Neto S, Rocha G. Sociedade Portuguesa de Pediatria (SPP), Sociedade Portuguesa de Medicina do Adolescente (SPMA), Sociedade de Infeciologia Pediátrica (SIP). *Recomendações Abordagem Sindrômica das Infecções Sexualmente Transmissíveis em Adolescentes*. *Acta Pediatr Port*. 2015; [citado 2020 Jan 20]; 46:414-21. Disponível em: http://www.spp.pt/UserFiles/file/Seccao_Medicina_Adolescente/IST%20SPMA.pdf.
12. World Health Organization (WHO). Global HIV, Hepatitis and STIs Programmes (HHS), Training modules for the syndromic management of sexually transmitted infections. Geneva: WHO Press, World Health Organization; 2007. [Access in 2021 Oct 4]. Available from: <https://www.who.int/reproductivehealth/publications/rtis/9789241593407/en/>.
13. World Health Organization (WHO). Department of Reproductive Health and Research, Expert consultation and review of the latest evidence to update guidelines for the management of sexually transmitted infections. Geneva: WHO; 2011. [Access in 2021 Oct 4]. Available from: https://www.who.int/reproductivehealth/publications/rtis/rhr_11_37/en/.
14. Nadal SR, Carvalho JM. Abordagem Sindrômica das Doenças Sexualmente Transmitidas. *Rev Bras Coloproct*. 2004;24(1):70-2
15. Nunnally J, Bernstein I. *Psychometric Theory*. 3rd ed. New York: McGraw Hill; 1994.
16. Hulin C, Netemeyer R, Cudeck, R. Can a Reliability Coefficient Be Too High? *J Consum Psychol*. 2001;(10)1:55-8.
17. Hair JF, Money AH, Samouel P, Page M. *Research Methods for Business. Education + Training*. 2007;(49)4:336-7.
18. Morais V, Moura MV, Costa MC, Patel B. Doenças sexualmente transmissíveis, AIDS e uso/abuso de substâncias psicoativas na adolescência. *J Pediatr (Rio J)*. 2001;77(Supl.2):s190-s204.
19. World Health Organization (WHO). Global HIV, Hepatitis and Sexually Transmitted Infections Programmes, Global health care sector strategies. Geneva: WHO; 2021. [Access in 2021 Nov 6]. Available from: <https://www.who.int/teams/global-hiv-hepatitis-and-stis-programmes/strategies/global-health-sector-strategies/developing-ghss-2022-2030>.
20. Alexander SC, Fortenberry JD, Pollak KI, Bravender T, Davis J, Ostbye T, et al. Sexuality talk during adolescent health maintenance visits. *JAMA Pediatr*. 2014;168(2):163-9.
21. Henry-Reid LM, O'Connor KG, Klein JD, Cooper E, Flynn P, Futterman DC. Current pediatrician practices in identifying high-risk behaviors of adolescents. *Pediatrics*. 2010;125(4):741-7.
22. Shafii T, Levine D. Office-Based Screening for Sexually Transmitted Infections in Adolescents. *Pediatrics*. 2020;145(Suppl 2):S219-24.
23. Cook RL, Wiesenfeld HC, Ashton MR, Krohn MA, Zamborsky T, Scholle SH. Barriers to screening sexually active adolescent women for chlamydia: a survey of primary care physicians. *J Adolesc Health*. 2001;28(3):204-10.
24. Portugal. Assembleia da República. Despacho 9871/2010. Portugal: Diário de República; 2010. [Acesso em 2021 Nov 13]. Disponível em: <https://dre.tretas.org/dre/275684/despacho-9871-2010-de-11-de-junho>.
25. Schneider K, Byczkowski T, Reed J. Treatment Compliance Among Asymptomatic Adolescents With Sexually Transmitted Infections. *JAMA Pediatr*. 2015;169(11):1065-6.