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HEALTH TECHNOLOGIES IN THE APPROACH TO SEXUALLY TRANSMITTED INFECTIONS IN PRIMARY CARE

TECNOLOGIAS EM SAÚDE NA ABORDAGEM EM INFECÇÕES SEXUALMENTE TRANSMISSÍVEIS NA ATENÇÃO PRIMÁRIA

TECNOLOGÍAS SANITARIAS EN EL ABORDAJE DE LAS INFECCIONES DE TRANSMISIÓN SEXUAL EN ATENCIÓN PRIMARIA

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ABSTRACT
Objective: The study aimed to assess the use of health technologies among primary care professionals. **Method:** It is characterized as a quantitative, cross-sectional, observational survey. The sample was non-probabilistic, intentional and consisted of 51 nurses and doctors. Information on the characterization of the participants, use of technologies, diagnosis and interventions was collected using a form. A descriptive and bivariate analysis was carried out using Pearson's chi-square test, with a significance level of 95%. **Results:** There was a predominance of female professionals (88.24%), trained in public institutions (60.78%). There was a significant difference between the professional categories in terms of female and male genital examinations, use of leaflets, albums or folders, manuals/protocols, applications and drug prescriptions. **Conclusion:** It was found that nurses, who have been working longer, use technologies that facilitate bonding and continuity of care.
Descriptors: Sexually Transmitted Infections, Primary Health Care, Technology.

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RESUMO
Objetivo: avaliar a utilização de tecnologias em saúde entre profissionais da atenção primária. **Métodos:** Caracteriza-se como quantitativo, transversal, observacional, do tipo inquérito. A amostragem foi não-probabilística, do tipo intencional, constituída por 51 enfermeiros e médicos. Informações sobre a caracterização dos participantes, uso de tecnologias, diagnóstico e intervenções foram coletadas por meio de formulário. Realizou-se análise descritiva e bivariada por meio do teste estatístico Qui-quadrado de Pearson, com nível de significância de 95%. **Resultados:** Predominaram profissionais do sexo feminino (88,24%), formados em instituição pública (60,78%). Houve diferença significativa entre as categorias profissionais em associação aos exames genitais feminino e masculino, uso de folheto, álbum ou folder, manual/protocolo, aplicativos e prescrição de medicamentos. **Conclusão:** Identificou-se que os enfermeiros, que possuem maior tempo de atuação, empregam tecnologias que facilitam o vínculo e a continuidade do cuidado.
Descritores: Infecções Sexualmente Transmissíveis; Atenção Primária à Saúde; Tecnologia.

RESUMEN
Objetivo: El objetivo del estudio era evaluar el uso de las tecnologías sanitarias entre los profesionales de atención primaria. **Método:** Se caracteriza por ser una encuesta cuantitativa, transversal y observacional. La muestra fue no probabilística, intencional y consistió en 51 enfermeras y médicos. La información sobre la caracterización de los participantes, el uso de tecnologías, el diagnóstico y las intervenciones se recogió mediante un formulario. Se realizó un análisis descriptivo y bivariante mediante la prueba chi-cuadrado de Pearson, con un nivel de significación del 95%. **Resultados:** Predominio de profesionales del sexo femenino (88,24%), formados en instituciones públicas (60,78%). Hubo diferencia significativa entre las categorías profesionales en cuanto a la realización de exámenes genitales femeninos y masculinos, uso de prospectos, álbumes o carpetas, manuales/protocolos, aplicaciones y prescripción de medicamentos. **Conclusión:** Se constató que las enfermeras que llevan más tiempo trabajando utilizan tecnologías que facilitan el vínculo y la continuidad de los cuidados.
Descriptores: Enfermedades de Transmisión Sexual; Atención Primaria de Salud; Tecnología.

INTRODUCTION

Sexually Transmitted Infections (STIs) are a global public health problem, given the high rate of people affected by these diseases and the negative impact they have on the health, life and interpersonal relationships of individuals. Given the high incidence rates, this impact is not restricted to the individual, but also affects the community in which the individual lives and the economic sphere of health services, given the costs of treatments and prevention measures.[1]

It is estimated that, worldwide, every day, more than one million people are affected by one of the four most common curable STIs: chlamydia, gonorrhea, trichomoniasis and syphilis, respectively, with an incidence of 376.4 million infected, annually, in the age group between 15 and 49 years.[2]

In Brazil, the annual estimate is 1,541,800 cases of gonorrhea, 1,967,200 of

chlamydia, 685,400 of Human Papillomavirus (HPV), 640,900 of genital herpes and 937,000 cases of syphilis. The vertical transmission of syphilis is also a surveillance factor, since it presents a progressive increase profile, in which, in 2022, it reached 26,471 new cases in the year.[3] That scenario denotes the need for investment in actions aimed at controlling STIs and, therefore, identification and appropriate treatment are essential.

Thus, the approach to STIs/HIV in Brazil is organized around a network of services that aims to decentralize and provide a broad range of preventive interventions, including Primary Health Care (PHC) units, especially those in the Family Health Strategy (FHS). However, there are significant challenges to the proper implementation of these services, mainly related to the low recognition by health professionals of the barriers that prevent the most vulnerable populations from accessing these services, in addition to widespread discrimination against certain groups due to their sexuality.[4] As a result, the prevalence of the epidemic and the growth in the number of cases are observed, accompanied by the incipience of prevention actions aimed at the vulnerable population.[5]

These challenges have driven changes in national guidelines for controlling STIs and supporting actions in PHC. In this sense, the Clinical Protocol and Therapeutic Guidelines for Comprehensive Care for People with Sexually Transmitted Infections (PCDT-IST) stand out. The document contains guidelines on the role of managers in the programmatic and operational management of these conditions, as well as the actions of health professionals in screening, diagnosis, treatment and prevention actions for key populations and/or people with STIs and their sexual partners.[6] The material also explains the new approach to these infections, called combined prevention, replacing the syndromic approach, in line with international guidelines on forms of prevention and assistance for the identification and treatment of symptomatic and asymptomatic STIs.

Combined prevention should be aimed at the general population, with an emphasis on key populations: sex workers, people deprived of liberty, people who use alcohol and other drugs, transsexuals, gays and men who have sex with men; and on priority populations for care: black people, indigenous people, homeless people, adolescents and young people.[7]

In terms of actions, the strategy known as combined prevention is based on the free combination of biomedical, behavioral and structural interventions for the control of STIs. Biomedical interventions include the provision of condoms, immunization, testing, treatment

of STIs and the use of antiretrovirals pre- and post-exposure. Behavioral interventions involve addressing gender, sexuality and sexual practices, with an emphasis on relationships and social groups. Structural interventions consist of actions to address sociocultural factors and conditions that directly influence the vulnerability of individuals, such as reducing socioeconomic inequality and strengthening the institutional structure of health services.[6]

Combined prevention combines common strategies for preventing and controlling STIs. Thus, it is expected that such actions will be implemented in primary health care services. As part of these tools, health technologies can be mentioned, which present a broad concept that encompasses all interventions that can be used in health promotion, prevention, diagnosis, treatment, rehabilitation or long-term care of diseases.[7]

In this context, a macro-project was structured, financed by the Paraíba Research Support Foundation,f or the purpose of analyze, develop and implement health technologies to support decision-making in STIs. This study is one of the steps in this broad project and aims to evaluate the use of health technologies among primary care professionals.

METHODS

The study is characterized as quantitative, cross-sectional, observational, and survey-type. The study design used the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist for observational studies.[8]

The sampling was non-probabilistic, intentional, consisting of nurses and doctors working in the ESF of the municipality of Campina Grande-PB. The municipality has 107 teams, distributed in rural and urban areas, where 214 professionals were supposed to work, however, one unit did not have a doctor on staff.

Eighteen professionals who worked in rural areas were excluded, as well as another 83 for the following reasons: not being present at the unit at the scheduled time, lack of contact via the unit's telephone or the health department's call center,did not provide STI care or did not have at least 3 months of professional experience.

In total, 112 professionals were contacted in person and electronically. However, 61 participants did not complete the form or refused to participate. Thus, the final sample consisted of 51 professionals, representing 40 different teams, including 35 nurses and 16 doctors.

In the first stage of data collection, which took place in March 2023, participants were recruited via an electronic invitation sent by telephone, containing general information about the study, its objectives and form of participation.

Interested parties were provided with a link to access the Free and Informed Consent Form and a link to access the electronic form, the research data collection instrument.

Due to low adherence among professionals, a second stage of data collection took place, carried out between April and May 2023, which consisted of an in-person invitation, with the aim of encouraging them to participate.To this end, an initial contact was made with the unit's reception with the aim of scheduling a time when at least the doctor or nurse would be present.

In total, three attempts were made to contact the team. All teams on the list, except those in rural areas, were invited to participate due to difficulties in access and contact. In the units, due to the demand of professionals, filling out the form during the interview was not always possible., the professional then had access at another time, via the link, and could complete the form.

The form used included the characterization of the participants and questions regarding the content covered in academic training, the use of technologies in research (anamnesis and physical examination, target audience), diagnosis (empirical, clinical, laboratory or flowcharts) and interventions (calling sexual partners, therapeutic schemes, tests, immunization, provision of condoms).

Subsequently, the collected data was exported to Excel software and the descriptive, univariate analysis was performed by constructing contingency tables with relative frequencies and measures of central tendency (mean and median). For the groups of material variables used for health education in STI consultations and tests used in care, bivariate analysis was performed in association with the independent variables professional category (nurse, doctor), type of undergraduate education institution (public, private) and time since graduation (less than or equal to 10 years, greater than 10 years). The analysis was performed using Pearson's chi-square statistical test, whose analysis tool was Stata software version 12.0, considering a significance level of 95%.

The project was assessed and approved by the Research Ethics Committee (CEP) of the Alcides Carneiro University Hospital, Federal University of Campina Grande, CAAE 55162521.6.0000.5182, opinion number 5,317,600.

RESULTS

The largest proportion of professionals participating in the research were female (88.24%, n=45), with an average age of 44.05 years (SD±10.94) and ages ranging from 24 to 68 years. Regarding academic background, the majority (68.63%, n=35) were nurses and the remainder

(31.37%, n=16) were physicians. The majority of professionals completed their undergraduate course at a public institution (n=31; 60.78%), with an average year of completion being 2004.3 (SD±11.49).

Regarding undergraduate studies, 74.51% (n=38) responded that there was content related to sexuality, 92.16% (n=47) that the curricular components addressed content on sexual health and 98.04% (n=50) that there was content on STI/HIV. In total, 42 professionals (80.40%) attended some type of postgraduate course, either strictu or lato sensu.

Regarding professional performance, almost all participants worked only in public institutions (96.08%, n=49), with an average of 13.94 years (SD±11.14) of experience. While the time of work in the current ESF team was on average 6.88 years (SD±6.65). During the time of work listed, 58.82% (n=30) participated in training/courses on sexuality, 70.59% (n=30) participated in training/courses on sexual health and 80.39% (n=41) participated in training/courses on STI/HIV.

According to the information collected, the infections most frequently detected during the professionals' care were vaginal discharge (n=51; 100.0%), urethral discharge and Pelvic Inflammatory Disease (PID) (n=9; 17.65%). While the least detected infections, considering the response "never identified", were viral hepatitis (n=1; 1.96%) and HIV (n=2; 3.92%).

Regarding the frequency of service to target audiences, there was a higher prevalence of services for adolescents and young people ≤ 30 years old (n=46; 90.20%), pregnant women (n=50; 98.04%) and women (n=51; 100.0%). However, in other groups it was not observed as frequently, such as Transvestites/Transsexuals (n=5; 9.80%), People deprived of liberty and Sexual Violence (n=4; 7.84%), People using PrEP (n=3; 5.88%) or with PEP indication (n=2; 3.92%) (Table1).

Table 1. Frequency of infections detected and target audiences in the care provided by doctors and nurses working in the Family Health Strategy. Campina Grande, PB, 2023.

INFECTIONS DETECTED	n	%
Genital ulcers		
Frequently (monthly)	4	7.84
Eventually (annually)	7	13.73
Rarely (interval greater than 1 year)	31	60.78
Never identified	9	17.65
Urethral discharge		
Frequently (monthly)	9	17.65
Eventually (annually)	24	47.06
Rarely (interval greater than 1 year)	9	17.65
Never identified	9	17.65
Vaginal discharge		
Frequently (monthly)	51	100.00
Viral hepatitis		
Frequently (monthly)	1	1.96

Eventually (annually)	22	43.14
Rarely (interval greater than 1 year)	12	23.53
Never identified	16	31.37
DIP		
Frequently (monthly)	9	17.65
Eventually (annually)	25	49.02
Rarely (interval greater than 1 year)	10	19.61
Never identified	7	13.73
HPV		
Frequently (monthly)	8	15.69
Eventually (annually)	26	50.98
Rarely (interval greater than 1 year)	11	21.57
Never identified	6	11.76
HIV		
Frequently (monthly)	2	3.92
Eventually (annually)	25	49.02
Rarely (interval greater than 1 year)	10	19.61
Never identified	14	27.45
TARGET AUDIENCES	**n**	**%**
Adolescents and young people ≤ 30 years old		
Frequently (monthly)	46	90.20
Eventually (annually)	4	7.84
Rarely (interval greater than 1 year)	1	1.96
Pregnant women		
Frequently (monthly)	50	98.04
Eventually (annually)	1	1.96
Women		
Frequently (monthly)	51	100.0
Men		
Frequently (monthly)	23	45.10
Eventually (annually)	13	25.49
Rarely (interval greater than 1 year)	14	27.45
Never	1	1.96
Elderly		
Frequently (monthly)	36	70.59
Eventually (annually)	11	21.57
Rarely (interval greater than 1 year)	4	7.84
Gays and MSM/Sex workers		
Frequently (monthly)	15	29.41
Eventually (annually)	21	41.18
Rarely (interval greater than 1 year)	13	25.49
Never	2	3.92
Transvestites/Transsexuals		
Frequently (monthly)	5	9.80
Eventually (annually)	17	33,33
Rarely (interval greater than 1 year)	18	35.29
Never	11	21.57
People who abuse alcohol and other drugs		
Frequently (monthly)	19	37.25
Eventually (annually)	20	39.22
Rarely (interval greater than 1 year)	11	21.57
Never	1	1.96
People diagnosed with STI		
Frequently (monthly)	30	58.82
Eventually (annually)	14	27.45
Rarely (interval greater than 1 year)	7	13.73
People diagnosed with viral hepatitis		
Frequently (monthly)	6	11.76
Eventually (annually)	15	29.41
Rarely (interval greater than 1 year)	18	35.29
Never	12	23.53
People diagnosed with tuberculosis		
Frequently (monthly)	14	27.45
Eventually (annually)	28	54.90
Rarely (interval greater than 1 year)	7	13.73
Never	2	3.92
PLHIV		
Frequently (monthly)	5	9.80
Eventually (annually)	20	39.22
Rarely (interval greater than 1 year)	17	33,33
Never	9	17.65
People who have receptive (passive) anal sex without using condoms		

Frequently (monthly)	12	23.53
Eventually (annually)	10	19.61
Rarely (interval greater than 1 year)	15	29.41
Never	14	27.45
People deprived of liberty		
Frequently (monthly)	4	7.84
Eventually (annually)	7	13.73
Rarely (interval greater than 1 year)	15	29.41
Never	25	49.02
Sexual violence		
Frequently (monthly)	4	7.84
Eventually (annually)	10	19.61
Rarely (interval greater than 1 year)	26	50.98
Never	11	21.57
People using PrEP		
Frequently (monthly)	3	5.88
Eventually (annually)	6	11.76
Rarely (interval greater than 1 year)	11	21.57
Never	31	60.78
People with PEP indication		
Frequently (monthly)	2	3.92
Eventually (annually)	5	9.80
Rarely (interval greater than 1 year)	17	33,33
Never	27	52.94
Homeless people		
Frequently (monthly)	8	15.69
Eventually (annually)	9	17.65
Rarely (interval greater than 1 year)	14	27.45
Never	20	39.22
Immunosuppressed people (transplant recipients, chemotherapy treatments, immune-mediated diseases, among others)		
Frequently (monthly)	12	23.53
Eventually (annually)	14	27.45
Rarely (interval greater than 1 year)	19	37.25
Never	6	11.76
STI History		
Frequently (monthly)	26	50.98
Eventually (annually)	15	29.41
Rarely (interval greater than 1 year)	10	19.61

Source: Survey Data, 2023.

Finally, when we consider the interventions carried out by professionals in the management of STIs, a deficit was found in collective educational activities, in which only (41.18%, n=21) carry them out monthly, however, with regard to individual educational activity (94.12%, n=48) and user-centered guidance (96.08%, n=49), professionals self-report a high frequency (Table2).

Table 2. Frequency of interventions performed and classification methods used in the care provided by doctors and nurses working in the FHS, in the management of STIs. Campina Grande, PB, 2023.

VARIABLE	n	%
Pre and post test counseling		
Frequently (monthly)	42	82.35
Eventually (annually)	6	11.76
Rarely (interval greater than 1 year)	1	1.96
Never	2	3.92
Individual educational activity		
Frequently (monthly)	48	94.12
Eventually (annually)	3	5.88
Collective educational activity		
Frequently (monthly)	21	41.18
Eventually (annually)	26	50.98
Rarely (interval greater than 1 year)	2	3.92
Never	2	3.92
Call for sexual partnership		
Frequently (monthly)	25	49.02
Eventually (annually)	20	39.22
Rarely (interval greater than 1 year)	4	7.84
Never	2	3.92
Notification		
Frequently (monthly)	29	56.86
Eventually (annually)	16	31.37
Rarely (interval greater than 1 year)	3	5.88
Never	3	5.88
Prescription of medication via sexual partner(s)		
Frequently (monthly)	37	72.55
Eventually (annually)	14	27.45
Rapid testing offer		
Frequently (monthly)	47	90.20
Eventually (annually)	3	7.84
Rarely (interval greater than 1 year)	1	1.96
Never		
Immunization		
Frequently (monthly)	46	90.20
Eventually (annually)	3	5.88
Rarely (interval greater than 1 year)	2	3.92
Forwarding		
Frequently (monthly)	42	82.35
Eventually (annually)	7	13.73
Rarely (interval greater than 1 year)	1	1.96
Never	1	1.96
User-centered guidance		
Frequently (monthly)	49	96.08
Eventually (annually)	2	3.92
Offer of condoms and lubricant		
Frequently (monthly)	42	82.35
Eventually (annually)	9	17.65
CLASSIFICATION METHODS		
Empirical		
Frequently (monthly)	25	49.02
Eventually (annually)	17	33,33
Rarely (interval greater than 1 year)	5	9.80
Never	4	7.84
Clinical (Physical Examination)		
Frequently (monthly)	50	98.04
Eventually (annually)	1	1.96
Laboratory		
Frequently (monthly)	48	94.12
Eventually (annually)	3	5.88
Rapid tests		
Frequently (monthly)	48	94.12
Eventually (annually)	3	5.88
Flowcharts		
Frequently (monthly)	41	80.39
Eventually (annually)	8	15.69
Never	2	3.92

Source: Survey Data, 2023.

Regarding the conduct and technologies adopted by professionals during consultations, the bivariate analysis demonstrated a significant difference for female genital examinations (p=0.002) and male genital examinations (p=0.036), use of leaflets, albums or folders (p=0.006), use of albums or protocols (p=0.029) and applications (p=0.021), in relation to the practices adopted by nurses and doctors. In turn, due to the difference in the institutional nature (public or private), only the use of a female genital model (p=0.049) during consultations was relevant in the comparison.

Regarding the relationship between the time since completion of the undergraduate course and the materials used for health education in the STI consultation, only the variables female genital examination (p=0.027), use of leaflets, albums or folders (p=0.003) and use of manual/protocol (p=0.015) showed a significant difference, in which those who completed more than 10 years ago perform the female genital examination more often, as well as use more leaflets and similar materials and manuals and protocols in the assistance (Table 3).

Table 3. Association between professional category, undergraduate institution, time since completion of undergraduate course and resources used for health education in STI consultation. Campina Grande, PB, 2023.

VARIABLE	Nurse (n=35)	Measurement (n=16)	p-value	Institution Public (n=31)	Institution Private (n=20)	p-value	≤ 10 years (n=24)	> 10 years (n=27)	p-value
Male genital examination									
Performs	25.49	21.57	**0.036**	25.49	21.57	0.361	25.49	21.57	0.338
Does not perform	43.14	9.80		35.29	17.65		21.57	31.37	
Female genital examination									
Performs	68.63	23.53	**0.002**	56.86	35.29	0.645	39.22	52.94	**0.027**
Does not perform	0	7.84		3.92	3.92		7.84	0	
Brochure/album/ folder									
Does not use	37.25	29.41	**0.006**	35.29	31.37	0.105	41.18	25.49	**0.003**
Uses	31.37	1.96		25.49	7.84		5.88	27.45	
Manual/ protocol									
Does not use	13.53	15.69	**0.029**	15.69	13.53	0.482	21.57	7.84	**0.015**
Uses	54.90	15.69		45.10	25.49		25.49	45.10	
Digital media									
Does not use	35.29	15.69	0.925	31.37	19.61	0.910	25.49	25.49	0.668
Uses	33,33	15.69		29.41	19.61		21.57	27.45	
Applications									
Does not use	58.82	17.65	**0.021**	43.14	33,33	0.249	35.29	21	0.815
Uses	9.80	13.53		17.65	5.88		11.76	11.76	
Male genital model									
Does not use	64.71	29.41	0.940	58.82	35.29	0.315	43.14	50.98	0.483
Uses	3.92	1.96		1.96	3.92		3.92	1.96	
Female genital model									
Does not use	60.78	29.41	0.564	58.82	31.37	**0.049**	39.22	50.98	0.120
Uses	7.84	1.96		1.96	7.84		7.84	1.96	
Male condom									
Does not use	5.88	1.96	0.775	5.88	1.96	0.544	1.96	5.88	0.357
Uses	62.75	29.41		54.90	37.25		45.10	47.06	
Female condom									
Does not use	23.53	9.80	0.831	25.49	7.84	0.105	11.76	21.57	0.234
Uses	45.10	21.57		35.29	31.37		35.29	31.37	

Source: Survey Data, 2023.

Regarding the tests that support diagnoses and interventions, the molecular biology test for chlamydia and gonococcus and the vaginal pH test showed a small and significant difference, in which a proportionally greater adherence of doctors can be observed, to the detriment of nurses. However, when we compare whether there is a relationship between the time since completion of the undergraduate course and the use of tests and exams, we find no significant difference in conduct when evaluating those with a year of completion more or less than 10 years ago (Table 4).

Table 4. Association between professional category, undergraduate institution, time since completion of undergraduate course and rapid tests and exams used in care. Campina Grande, PB, 2023.

VARIABLE	Nurse (n=35)	Measurement (n=16)	p-value	Institution Public (n=31)	Institution Private (n=20)	p-value	≤ 10 years (n=24)	> 10 years (n=27)	p-value
HIV TR									
Does not use	3.92	1.96	0.94	0	5.88	**0.026**	3.92	1.96	0.483
Uses	64.71	29.41		60.78	33,33		43.14	50.98	
RT Hepatitis B									
Does not use	3.92	1.96	0.94	1.96	3.92	0.315	1.96	3.92	0.623
Uses	64.71	29.41		58.82	35.29		45.10	49.02	
TR Hepatitis C									
Does not use	7.84	7.84	0.216	9.80	5.88	0.914	7.84	7.84	0.856
Uses	60.78	23.53		50.98	33,33		39.22	58.82	
TR Syphilis									
Does not use	3.92	1.96	0.94	0	5.88	**0.026**	3.92	1.96	0.483
Uses	64.71	29.41		60.78	33,33		43.14	50.98	
HIV serology									
Does not use	15.69	15.69	0.925	7.84	15.69	**0.026**	13.73	9.80	0.371
Uses	33,33	15.69		52.94	23.53		33,33	43.14	
Hepatitis B Serology									
Does not use	13.53	7.84	0.687	7.84	13.53	0.061	11.76	5.88	0.574
Uses	54.90	23.53		52.94	25.49		35.29	43.14	
Hepatitis C Serology									
Does not use	17.65	7.84	0.957	11.76	13.53	0.211	11.76	13.53	0.940
Uses	50.98	23.53		49.02	25.49		35.29	39.22	
Syphilis Serology									
Does not use	11.76	9.80	0.256	5.88	15.69	**0.010**	13.53	7.84	0.214
Uses	56.86	21.57		54.90	23.53		33,33	45.10	
Chlamydia and gonococcus research by molecular biology									
Does not use	62.75	21.57	**0.039**	50.98	33,33	0.914	39.22	45.10	0.856
Uses	5.88	9.80		9.80	5.88		7.84	7.84	
Fresh examination of vaginal contents									
Does not use	50.98	21.57	0.681	49.02	23.53	0.107	33,33	39.22	0.796
Uses	17.65	9.80		11.76	15.69		13.53	13.53	
Pap smear									
Does not use	1.96	3.92	0.174	0	5.88	**0.026**	3.92	1.96	0.483
Uses	66,67	27.45		60.78	33,33		43.14	50.98	
Vaginal pH test									
Does not use	64.71	23.53	**0.047**	54.90	33,33	0.565	41.18	47.06	0.878
Uses	3.92	7.84		5.88	5.88		5.88	5.88	
Swab test									
Does not use	60.78	23.53	0.216	52.94	31.37	0.496	37.25	47.06	0.341
Uses	7.84	7.84		7.84	7.84		9.80	5.88	

Amine test									
Does not use	64.71	25.49	0.146	54.90	35.29	0.970	43.14	47.06	0.739
Uses	3.92	5.88		5.88	3.92		3.92	5.88	
Schiller test									
Does not use	33,33	19.61	0.355	35.29	17.65	0, 361	29.41	23.53	0.197
Uses	35.29	11.76		25.49	21.57		17.65	29.41	
Acetic acid									
Does not use	43.14	19.61	0.98	41.18	21.57	0.358	33,33	29.41	0.260
Uses	25.49	11.76		19.61	17.65		13.53	23.53	

Source: Survey Data, 2023.

Regarding vaccines and medications, the professional category showed an association with the prescription of Acyclovir 200mg comp (p=0.010) and Ceftriaxone 500mg IM (p=0.012) and a strong association with Doxycycline 100mg (p=0.000) and Clindamycin (p=0.001). Acyclovir 200mg comp (p=0.007), Ceftriaxone 500mg IM (p=0.042) and Doxycycline 100mg (p=0.004) also appear in the association with the year of completion of the undergraduate course (Table 5).

Table 5. Vaccines and medicines used in the care provided by doctors and nurses working in the ESF. Campina Grande, PB, 2023.

VARIABLE	Nurse (n=35)	Measurement (n=16)	p-value	Institution Public (n=31)	Institution Private (n=20)	p-value	≤ 10 years (n=24)	> 10 years (n=27)	p-value
Hepatitis B Vaccine									
Does not use	9.80	5.88	0.684	11.76	3.92	0.370	7.84	7.84	0.856
Uses	58.82	25.49		49.02	35.29		39.22	45.10	
HPV vaccine									
Does not use	7.84	1.96	0.564	7.84	1.96	0.354	3.92	5.88	0.739
Uses	60.78	29.41		52.94	37.25		43.14	47.06	
Acyclovir 200mg comp									
Does not use	54.90	13.73	**0.010**	41.18	27.45	0.865	23.53	45.10	**0.007**
Uses	13.73	17.65		19.61	11.76		23.53	7.84	
Metronidazole 2% cream									
Does not use	7.84	0	0.159	7.84	0	0.094	0	7.84	0.050
Uses	60.78	31.37		52.94	39.22		47.06	45.10	
Metronidazole 250mg									
Does not use	7.84	3.92	0.912	9.80	1.96	0.228	3.92	7.84	0.473
Uses	60.78	27.45		50.98	37.25		43.14	45.10	
Clindamycin									
Does not use	66,67	19.61	**0.001**	56.86	29.41	0.060	37.25	49.02	
Uses	1.96	11.76		3.92	9.80		9.80	3.92	0.164
Fluconazole 150mg									
Does not use	13.73	3.92	0.514	13.73	3.92	0.250	3.92	13.73	0.100
Uses	54.90	27.45		47.06	35.29		43.14	39.22	
Ceftriaxone 500mg IM									
Does not use	62.74	19.61	**0.012**	54.90	27.45	0.063	33,33	49.02	**0.042**
Uses	5.88	11.76		5.88	11.76		13.73	3.92	
Azithromycin 500mg									
Does not use	15.69	1.96	0.149	11.76	5.88	0.690	7.84	9.80	0.863
Uses	52.94	29.41		49.02	33,33		39.22	43.14	
Doxycycline 100mg									
Does not use	64.71	11.76	**0.000**	47.06	29.41	0.842	27.45	49.02	**0.004**
Uses	11.76	19.61		13.73	9.80		19.61	3.92	
Imiquimod 50mg cream									
Does not use	68.63	29.41	0.135	58.82	39.22	0.417	45.10	52.94	0.284
Uses	0	1.96		1.96	0		1.96	0	
Podophyllotoxin 1.5g cream									
Does not use	68.63	29.41	0.135	58.82	39.22	0.417	45.10	52.94	0.284
Uses	0	1.96		1.96	0		1.96	0	
Podophyllin 10%-25% solution									
Does not use	66,67	29.41	0.562	58.82	37.25	0.750	45.10	50.98	0.932
Uses	1.96	1.96		1.96	1.96		1.96	1.96	
Trichloroacetic acid 80% to 90%									
Does not use	64.71	27.45	0.403	58.82	33,33	0.127	41.18	50.98	0.244
Uses	27.45	3.92		1.96	5.88		5.88	1.96	

Source: Survey Data, 2023.

DISCUSSION

Based on the analysis, certain conducts of professionals regarding health education and empirical, clinical or laboratory basis for directing treatments or interventions are directly influenced by the type of professional training. This denotes the importance of discussing, approaching and applying in practice the issues related to STIs, their management for treatment,

prevention and early detection, even during undergraduate studies. However, there is a deficit in the scope of the subject in undergraduate studies, which directly reflects on the professional approach to health care.[9]

Although there is a considerable proportion of professionals with postgraduate degrees, there is a lack of comprehensive coverage of the content inherent to professional practice, on sexual health and sexuality. A similar scenario is found in the frequency of professional training offered by the services where they work. In addition to technical-scientific knowledge about STI/HIV, necessary for adequate management in PHC, behavioral analysis and targeting of health education are essential for proper counseling of users, especially those included in vulnerable and priority populations, which constitutes the behavioral intervention of combined prevention.

In this context, a study that investigated the practice of STI/HIV/AIDS counseling carried out by PHC professionals in Montes Claros, Minas Gerais, demonstrated that 74.3% of the professionals investigated analyzed their conduct regarding counseling, assessment and identification of risk behavior, inadequate when compared to the standard indicated by the Ministry of Health.[10]

Therefore, for the conduct to become appropriate, regardless of the category, the professional must acquire tools that help him/her improve care. Thus, health technologies are an important resource by enabling effective communication between the professional and the user, in addition to providing a basis for more comprehensive practices, given the needs and characteristics of PHC users.[11]

In the analysis of the resources used for health education in STI consultations, professionals with more than 10 years of training demonstrated that they use soft-hard technologies, such as folders and information leaflets, and manuals/protocols, to a greater extent than those with less than 10 years of training. Such resources constitute an important aid in establishing effective bonds and communication between professionals and users, in addition to supporting timely health care.[12]

In addition to manuals and protocols, other types of health technologies, such as mHealth, are also tools that can help diagnose and manage STIs. Applications and digital media can assist professionals and users in both health education and self-management of infections such as HIV. A systematic review that analyzed how the use of applications influences STI prevention identified and listed a range of applications aimed at vulnerable populations, mainly PLHIV, which allow, among other functions,

reminders for appointments, access to forums with users and professionals, and tips for reducing the risk of contracting HIV.[13]

Furthermore, in addition to electronic equipment and digital technologies, clinical examinations and counseling based on scientific evidence also constitute health technology, which when not applied can reduce the chances of early detection and timely treatment of STIs. A study carried out in 2016 with nurses and doctors from PHC in Campina Grande-PB identified that 34.4% of nurses did not perform male genital examinations, while all performed female genital examinations.[14]

The same study identified a strong association between professional category and the performance of female and male genital examinations ($p<0.01$). This scenario shows that there was little or no change in the approach of professionals in the aforementioned city regarding diagnostic and detection strategies, which may influence the under diagnosis of STIs. Given the growing epidemiological profile of these diseases, it is essential that detection and appropriate treatment are effective and combined with proper reporting, to enable the modification and development of actions necessary to control STIs.[15]

Regarding diagnostic tests, such as molecular biology testing for chlamydia and gonococcus, fresh examination of vaginal contents and vaginal pH testing, the analysis showed that few professionals perform or request them, even though they consist of methods contained in the Ministry of Health protocols, which aim to ensure that STI care is cohesive.[6]

This scenario exposes the resistance or difficulty of professionals in adopting the use of technologies of any nature, which can be associated with deficiencies in training and continuing education in health. There are, therefore, challenges in implementing new forms and practices of providing health, as the sector is still influenced by traditional and conservative models.[12]

The low adherence of transsexuals and transvestites is noteworthy, where only 9.80% of professionals identified the monthly frequency of sexual health consultations in the health units studied, for this type of public. According to Malheiros, Mathias and Serqueira (2022)[17], there are three barriers that corroborate this problem, they are: the stigma on the part of professionals, highlighting their prejudice towards this population; the structural barrier, since they do not feel comfortable, due, for example, to the lack of a specific bathroom for them. The third obstacle concerns the lack of professional preparation/training to meet the specificities of this public.

Regarding the treatment of STIs, the antimicrobial Doxycycline (100 mg) is one

of the available options. However, it was observed that among the therapeutic options, this medication is rarely chosen by PHC professionals in Campina Grande-PB, especially by nurses. In this perspective, in a study carried out in the Basic Health Units of Ponte Nova-MG, the same scenario was observed.[18] In view of this, it is worth highlighting that the occurrence of this resistance by nurses may be the result of the following biases: insecurity, overload of multifunctions in the workplace, feeling of invasion of another professional category, and also, little professional training.[19]

Regarding laboratory tests, molecular biology testing is one of the most effective for detecting STIs, especially with regard to chlamydia and gonococcus. However, low usability of this diagnostic option was analyzed, both in nursing and medical practice.[20]

Health technologies in the management of STIs are an important resource for care practice, regardless of the profession, and need to be continually addressed. Although there is still resistance to their use in practice, it was possible to identify that nurses, especially those with more time since graduation, usually use technologies that facilitate the bond and continuity of care, but to a lesser extent, those that aid in diagnosis and that constitute less traditional models.

FINAL CONSIDERATIONS

The assessment of the use of health technologies by PHC professionals reveals a significant difference between nurses and physicians, especially in the resources used, such as folders and manuals/protocols. However, there is agreement in the lack of availability of genital models of both sexes, which can facilitate health education, as well as digital media and applications, which are established as tools capable of assisting in the diagnosis of STIs and improving communication and continuity of care with the user.

Although there are new tools or support exams available, capable of offering early diagnosis and timely treatment for STIs, it was possible to note the lack of training and/or availability of the necessary supplies to carry out the exams, which constitutes an obstacle to sexual health consultations that are more assertive regarding the detection of STIs, since there is a predominance of the use of older exams, such as the Pap smear.

Therefore, the use of technologies, depending on their nature, is associated with the professional category, the nature of the educational institution and also the time of training, especially the use of medication for treatment and diagnostic tests. Thus, the content covered during the undergraduate course and practical experience can be

configured as influencing factors for the panorama found.

Although the assessment of these characteristics is important and the sample of professionals participating in the research is significant, it is difficult to measure whether the characteristics presented are also influenced by the flow and subsidies provided to these professionals. Furthermore, due to the refusal of many professionals, the sample did not show proportionality in the professional category variable. Therefore, it is proposed that other factors that may influence conduct be assessed, as well as using a methodological strategy that broadens participation.

The study allowed the identification of health actions in the FHS regarding STIs and allowed the quantification of the main differences in approach among PHC professionals. It is expected that the aspects addressed will support strategic actions in training and qualification, both in the sphere of education and management, so that there is improvement and evolution in the care and control of STIs.

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