



Original Article

## Vulvovaginitis in Girls: Clinico-Psychological Aspect

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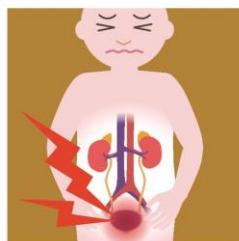
Vulvovaginitis.

### ABSTRACT

Women, particularly healthy women, need medical attention in order to carry out their sexual and reproductive functions safely and effectively. There has been a massive expansion of health technology and health systems in the second half of this century to provide women with many aspects of reproductive health care. There are numerous problems related to the impairment of women's reproductive health during the infancy or teenage years. The great importance among gynecological pathologies assigns to vulvovaginitis. It is the most frequent reason for visits to children's gynecologists. The development of the disease is promoted by anatomophysiological features of a girl's genital tracts before puberty, bacterial and viral agents, the neglect of personal hygiene rules, helminthic invasion, allergic disorders, endocrine pathology. During the course of medical-preventive and rehabilitation actions for vulvovaginitis in girls, a special approach requires psychological support, which is built on the root causes of their problems, and various health-related aspects, since in no other field is the relationship between psychology and physiology as close as in the field of sexuality and the reproductive health. Thus, the studying of clinical-psychological features of vulvovaginitis remains relevant since it helps to prevent critical consequences during the formation of the reproductive system.

### GRAPHICAL ABSTRACT

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## Introduction

In terms of function, dysfunction, and disease, the reproductive system is critical to women's health. In contrast to men, this is not the case. Females bear a disproportionate burden of disease due to their reproductive role and reproductive system, as well as how the culture treats or mistreats them due to their gender. Though more men die as a result of their "vices," women also suffer as a result of their biologically mandated physiological responsibility to ensure the species' survival, as well as the duties that go along with it [1–3]. In the structure of gynecological pathology, the leading positions are occupied by vulvovaginitis in girls before puberty, which is predisposed to individual anatomical features: The absence of posterior adhesions, the low location of the external opening of the urethra, synechia [4,5].

One of the risk factors in the development of vulvovaginitis in children is infection with causative agents and sexually transmitted infections (STI) [6,7]. Nowadays, the incidence of STIs in the population of children, including in the age group from 0 to 17 years and 11 months, remains at a fairly high level. The physiological features of the girls' body during the so-called hormonal rest contribute to the adhesion and colonization of infectious agents on the mucous membrane of the vulva and vagina [8–10]. Taking into account the failure of the mechanisms of colonization resistance and the physiological features of the vulva and vagina in girls, in contrast to adult women, non-specific vulvovaginitis is more often observed, in which large numbers of conditionally pathogenic microorganisms are detected.

It is worth noting that one of the main indicators of girls' reproductive health is the prevalence of gynecological diseases, the study of which will allow us to more effectively solve the problem of vulvovaginitis and plan measures to improve the health of children, preventing the impairment of reproductive function in the future [11–13].

In gynecological practice, the psychological approach to patients is especially important.

However, it is in this area that psychological assistance is not sufficiently included in the complex of preventive, curative, and rehabilitative measures.

The functioning of the reproductive system is determined by the interaction of physiological, mental, and behavioral components [14–17]. A particularly close link can be traced between the physiological and mental components at all stages of reproductive function. Thus, the implementation of the reproductive function should be considered from the standpoint of the modern system approach and the theory of functional systems, which allows us to justify its structure, functions, mechanisms of implementation, as well as to identify clinical and psychological factors of reproductive health disorders, to determine the directions of medical and psychological care.

This research aimed at investigating clinical-psychological characteristics of vulvovaginitis as the most common disease in the structure of gynecological pathology of adolescent girls in the Republic of Mordovia.

## Material and methods

We conducted a retrospective analysis of surveys of adolescent girls of the Republican Center for the Protection of Reproductive Health of Girls of the Ministry of Health of the Republic of Mordovia for the period from 2018 to 2020, with various nosological forms of gynecological diseases [18–21]. According to official statistics, the total number of girls living in the territory of the Republic of Mordovia from 0 years to 17 years 11 months, over the past three years, unfortunately, has decreased from 65.3 to 64.8 thousand, but the share of adolescents has increased slightly (from 15.4 to 15.9%).

Every year in the Republic of Mordovia, within the framework of professional examinations, on the basis of the order №514 of 10.08.2017 "On the procedure for conducting preventive medical examinations of minors," 20-21 thousand girls were examined. We used the data of preventive examinations in each age group, as well as

analyzed the results of the survey of girls on the appeal.

The examination included an assessment of the skin and visible mucous membranes, upper and lower extremities, organs of the genitourinary system, anorectal region, and oropharynx [22,23]. Towards to determination of the state of the abdominal cavity and pelvic organs, palpation of the anterior abdominal wall and recto-abdominal/bimanual examination and hardware methods of investigation were performed. During the examination of the organs of the genitourinary system, special attention was paid to the state of the mucous membrane of the vestibule of the vagina, the hymen, the presence and nature of vaginal secretions, the state of the anorectal region, the state of the external opening

of the urethra and the paraurethral glands were determined.

### Result and Dissection

In the Republic of Mordovia, out of 20,622 people, which was 95.9% and examined during preventative maintenance in 2020, 2,263 cases of gynecological diseases and sexual development disorders were detected – 36.9 % of the total gynecological morbidity according to the data of preventive examinations of girls of decreed ages and data on the results of the survey of girls on the appeal in the Republic of Mordovia.

The structure of detected gynecological diseases and disorders of sexual development during preventive examinations in 2020 is given in Table 1.

**Table 1:** The structure of detected gynecological diseases and disorders of sexual development during preventive examinations in 2020

Nosology	Age						TOTAL
	Three y.o.	Six y.o.	14 y.o.	15 y.o.	16 y.o.	17 y.o.	
Delayed sexual development	X	x	21	3	x	x	24
Advanced sexual development	45	22	x	x	x	x	67
Premature telarche	12	23	x	x	x	x	35
Menstrual disorders: amenorrhea/oligomenorrhea/excessive, frequent and irregular uterine bleeding	X	x	126	71	111	90	398
Dysmenorrhea	X	x	17	12	16	3	48
Syndrome of premenstrual tension	X	x	7	16	29	x	52
Non-inflammatory diseases of the ovary, fallopian tube and broad ligament of the uterus: follicular cyst or corpus luteum according to ultrasound	X	x	13	24	33	21	91
Congenital malformations of the female genital organs (vagina)	X	x	x	1	2	1	4
Gender uncertainty and pseudohermaphroditism	X	x	x	x	x	x	x
Inflammatory diseases of the vulva and vagina	315	259	161	54	77	98	964
Leukoplakia of vulva	1	4	x	x	x	x	5
Synechia vulvae (congenital fusion of the labia minora)	125	56	x	x	x	x	181
Anogenital Warts	X	x	x	x	x	1	1
Malignant neoplasms of vulva and vagina	X	x	x	x	x	x	x
Diseases of lacteal gland	X	x	7	101	114	103	325
Pregnancy, childbirth and the postpartum period	X	x	x	x	1	10	11
Cervical ectropion	X	x	x	9	21	27	57
<b>Total of detected diseases</b>	498	364	352	291	404	354	2 263

In the structure of identified gynecological diseases and disorders of sexual development

during preventive examinations, the leading positions are occupied by:

*Inflammatory diseases of the vulva and vagina*  
2020r -n=964 - 42,6 % (2019r- n =846-32,9 % ;  
2018r- n =854-38,5 %.)

*Menstrual disorders:*  
amenorrhea/oligomenorrhea/excessive, frequent  
and irregular uterine bleeding

2020r- n=398 - 17,6 % (2019r- n =623-24,3 % ;  
2018r- n =724-32,6 % .)

*Synechia vulvae (congenital fusion of the labia  
minora)*

2020r -n=181 - 8,0 % (2019r- n =205-8,0 % ;  
2018r- n=114-5,1 %.)

We identified that vulvovaginitis is the most  
common among other gynecological diseases in  
2020. Based on this, we examined the dynamics  
of inflammatory diseases of the vulva and vagina  
in more detail over the past 3 years (Table 2).

**Table 2:** Inflammatory diseases of the vulva and vagina identified during preventive examinations in 2018-2020

Year	Age						TOTAL
	3 y.o.	6 y.o.	14 y.o.	15 y.o.	16 y.o.	17 y.o.	
2020	315	259	161	54	77	98	964
2019	301	221	129	60	70	65	846
2018	233	315	101	72	70	63	854

Analyzing the data of preventive examinations for  
2018-2020, the frequency of vulvovaginitis in the  
age period from 0-4 years 11 months 29 days is  
clearly traced, due to the low content of estrogens  
(physiological hypoestrogenism), the thin vaginal  
mucosa due to which is easily injured and the  
entrance gate for bacterial and viral infection is  
formed [24–26].

The structure of gynecological pathology  
according to the data of the referral rate was  
slightly different from that revealed by the results  
of preventive examinations.

**Table 3:** The structure of detected gynecological diseases and disorders of sexual development by the  
appealability in 2020

Nosology	Age						TOTAL
	0-4 y.o.	5-9 y.o.	10- 14 y.o.	15 y.o.	16 y.o.	17 y.o.	
Delayed sexual development	0	19	98	52	x	x	169
Advanced sexual development	3	37	x	x	x	x	40
Premature telarche	129	17	x	x	x	x	146
Menstrual disorders: amenorrhea/oligomenorrhea/excessive, frequent and irregular uterine bleeding	x	9	385	225	221	215	1055
Dysmenorrhea	x	x	70	64	55	44	233
Syndrome of premenstrual tension	x	x	5	19	11	9	44
Non-inflammatory diseases of the ovary, fallopian tube and broad ligament of the uterus: follicular cyst or corpus luteum according to ultrasound	5	6	92	43	39	35	220
Congenital malformations of the female genital organs (vagina)	x	x	6	1	1	x	8
Gender uncertainty and pseudohermaphroditism	x	x	x	x	x	x	x
Inflammatory diseases of the vulva and vagina	483	465	320	129	113	70	1580
Leukoplakia of vulva	5	12	6	x	x	x	23
Synechia vulvae (congenital fusion of the labia minora)	57	146	2	x	x	x	205
Anogenital Warts	2	3	2	1	1	4	13

Nosology	Age						TOTAL
	0-4 y.o.	5-9 y.o.	10-14 y.o.	15 y.o.	16 y.o.	17 y.o.	
Malignant neoplasms of vulva and vagina	x	x	x	x	x	x	x
Diseases of lacteal gland	x	3	30	9	7	7	56
Pregnancy, childbirth and the postpartum period	x	x	x	x	x	11	11
Cervical ectropion	x	x	x	2	20	23	45
Trauma of the genitals	8	8	x	x	x	x	16
Others	1	1	3	2	2	2	11
<b>Total of detected diseases</b>	<b>843</b>	<b>876</b>	<b>944</b>	<b>472</b>	<b>395</b>	<b>345</b>	<b>3875</b>

In the structure of identified gynecological diseases and disorders of sexual development, the leading positions are occupied by (Table 4):

*Inflammatory diseases of the vulva and vagina*

2020r -n=1580 - 40,8 % (2019r- n =1371-30,6 %; 2018r- n =1740-40,6 %)

*Menstrual*

amenorrhea/oligomenorrhea/excessive, frequent and irregular uterine bleeding

2020r- n=1055 - 27,2 % (2019r- n =1630-36,3 %; 2018r- n =1486-34,6 %.

*Dysmenorrhea*

2020r -n=233 - 6,0 % (2019r- n =83-1,9 %; 2018r- n =85-2,0 %.)

*disorders:*

**Table 4:** Inflammatory diseases of the vulva and vagina identified during preventive examinations in 2018-2020

Year	Age				TOTAL
	I (0-4 y.o.)	II (5-9 y.o.)	III (10-14 y.o.)	IV (15-17y.o.)	
2020	483	465	320	312	1580
2019	589	432	151	199	1371
2018	781	520	174	235	1740

In the structure of the revealed gynecological diseases and disorders of sexual development in terms of circulation, inflammatory diseases of the vulva and vagina are:

2020r -n=1580 - 40,8 % (2019r- n =1371-30,6 %; 2018r- n =1740-40,6 %)

In this regard, an important role is given to a thorough analysis of the clinical condition of the child; a full-fledged laboratory examination will reveal the true cause of the inflammatory process in the urogenital tract of the child, the fight against infectious diseases, which is extremely important for the prevention of reproductive disorders in the girl in the future.

A variety of corporal manifestations reflect the presence of certain failures in the reproductive system, and act as diagnostic criteria for painful disorders. At the same time, the body itself is a target for psychological influence in the process of providing medical and psychological assistance to patients with diseases of the reproductive system.

Psychological support of the treatment process in gynecological practice should be included in a comprehensive program, the focus of which should be the personality of the patient as a whole, and not just a separate sick organ or system [27,28, 29, 30].

Achieving positive dynamics in the treatment process, achieving a good result, especially in working with children and adolescents, is impossible without positive interaction with the patient, without building congruent interactions, empathy, without taking into account the peculiarities of the internal picture of the disease. As a result of the collaborative work of a doctor and a medical psychologist, the patient develops an adequate attitude to his disease, which has a positive impact on its course and outcome.

**Conclusion**

According to the results of this research, a high prevalence of vulvovaginitis in girls before puberty was revealed. This is predisposed to

anatomical features, hypoestrogenism (physiological), as a result of which there is no such protective mechanism as physiological desquamation and cytolysis of the surface cells of the vaginal epithelium, due to the influence of sex hormones. Extragenital pathology, frequent colds, and allergic diseases should be accompanied by attention of parents to the toilet of the external genitals

In order to improve the quality of specialized care for girls with diseases of the reproductive system, along with the development and implementation of innovative technologies for the diagnosis and treatment of diseases of the reproductive system, an important aspect is the complex nature of the care provided, including clinical and psychological components: Interdisciplinary interaction of pediatricians, pediatric gynecologists, clinical psychologists.

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#### Authors' contributions

All authors contributed toward data analysis, drafting and revising the paper and agreed to be responsible for all the aspects of this work.

#### Conflict of Interest

We have no conflicts of interest to disclose.

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