South Health and Policy. 2026; 5:380
doi: 10.56294/shp2026380

ORIGINAL

Educational strategy to elevate knowledge has more than enough syndrome of the vaginal flow in pregnant

Estrategia educativa para elevar conocimientos sobre síndrome del flujo vaginal en embarazadas

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Cite as: Batista Villar T, Breto García L, Díaz Díaz C, Girao Silva Y, Gámez García I. Educational strategy to elevate knowledge has more than enough syndrome of the vaginal flow in pregnant. South Health and Policy. 2026; 5:380. https://doi.org/10.56294/shp2026380

Submitted: 23-02-2025 **Revised** 28-05-2025 **Accepted:** 02-06-2026 **Published:** 03-06-2026

Editor: Dr. Telmo Raúl Aveiro-Róbalo

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ABSTRACT

Introduction: vaginal discharge syndrome is relevant in pregnant women because it increases the risk of obstetric complications, as it promotes the development of ascending infections in the vaginal canal, uterus, and appendages, which increase the risk of complications and perinatal mortality, raising healthcare costs.
Objective: to evaluate an educational intervention strategy on vaginal discharge syndrome in pregnant women in the Villa 2 health area, belonging to the 5 de Septiembre Polyclinic, Consolación del Sur, from January 2023 to December 2024.
Method: an observational, analytical, and longitudinal intervention study was conducted with a universe of 35 pregnant women, selecting 27 pregnant women by non-probabilistic sampling. The research was carried out in three stages: a diagnostic stage, in which the intervention strategy was designed; then applied and evaluated. Statistical methods were used, given in absolute frequency and percentage value as units of measurement, with the McNemar test used for inferential statistics. A difference was considered significant when the p-value was ≤ 0,05.
Results: overall, the sample was characterized by 62,9 % of pregnant women aged between 21 and 35 years and 51,8 % of pregnant women with a secondary school education. The level of knowledge about the symptoms of vaginal discharge syndrome in pregnant women, as well as the risk factors and complications of the vaginal condition, was significantly modified by the educational intervention.
Conclusions: the educational intervention was effective, as it succeeded in raising the level of knowledge about vaginal discharge syndrome among the pregnant women included in the study.

Keywords: Educational Intervention; Pregnant Women; Vaginal Discharge Syndrome.

RESUMEN

Introducción: en las embarazadas el síndrome de flujo vaginal es relevante debido a que aumenta el riesgo de complicaciones obstétricas pues favorece el desarrollo de infecciones ascendentes en el canal vaginal, el útero y los anexos, que incrementan el riesgo de complicaciones y la mortalidad perinatal, elevando los costos de la atención en salud.
Objetivo: evaluar una estrategia de intervención educativa sobre el síndrome de flujo vaginal en embarazada de área de salud Villa 2, perteneciente al Policlínico 5 de Septiembre, Consolación del Sur en el periodo de enero del 2023 a diciembre del 2024.

Método: se realizó un estudio observacional, analítico, y longitudinal, de tipo intervención, universo constituido por 35 embarazadas, seleccionando por muestreo no probabilístico 27 embarazadas, la investigación se desarrolló en tres etapas, una diagnóstica, se diseña la estrategia de intervención, luego se aplica y evalúa, se emplearon métodos estadísticos dados en frecuencia absoluta y el valor porcentual como unidades de medida, la estadística inferencial la prueba de McNemar, se tomó como una diferencia significativa cuando el valor de p resultó ≤ 0,05.
Resultados: de forma general la muestra estuvo caracterizada por tener un 62,9 % de gestantes con edades entre 21 y 35 años y un 51,8 % de embarazadas con nivel escolar secundario. El nivel de conocimientos sobre la sintomatología del síndrome de flujo vaginal en la gestante, así como los factores de riesgo y las complicaciones de la afección vaginal, logró modificarse con la intervención educativa de forma significativa.
Conclusiones: la intervención educativa realizada fue eficaz, ya que logró elevar el nivel de conocimientos sobre el síndrome de flujo vaginal, en las gestantes incluidas en el estudio.

Palabras clave: Intervención Educativa; Embarazadas; Síndrome de Flujo Vaginal.

INTRODUCTION

Vaginal discharge syndrome is a serious public health problem worldwide, which damages the reproductive system of women.[1] It is an infectious process of the vagina characterized by one or more symptoms, specifically leucorrhea.[2] Other authors define it as the set of signs and symptoms produced by an infectious process that generates an imbalance in the vaginal ecosystem; it is characterized by vulvar itching, burning, dysuria, dyspareunia and/or vaginal fecundity that depend on the etiological agent.[3]

Abnormal vaginal discharge is also characteristic of this syndrome. It is often a challenge to distinguish between abnormal and normal discharge, both from the perspective of the patient and the health professional; the difference is that normal physiological variations occur due to biological or hormonal changes.[4]

This syndrome is the reason why women of reproductive age visit the health care facility most frequently. Most women have had a vaginal infection at least once in their lives, both those who are not sexually active and those who are sexually active.[5]

In women seeking medical care, about 11-38,4 % are associated with symptoms related to vaginal discharge syndrome (vaginitis), with bacterial vaginosis, vulvovaginal candidiasis, and Trichomonas vaginalis infection being the most common infections causing this syndrome.[4] About 50 % of these infections go unnoticed by women and are only diagnosed during gynecological examination.[1]Cervico-vaginal infections are reported with an annual incidence ranging from 7 % to 20 %.[6]

As a public health problem, this pathology is of great importance worldwide, since it occurs in approximately 35 % of sexually active women and in 15-20 % of pregnant women. The prevalence varies considerably according to the population evaluated, ranging from 34,7 % to 62 %. Worldwide, sub-Saharan Africa has the highest prevalence.[7] Figures of 14 %-18 % are reported in South Africa; 17 % in Uganda; 20 % in Kenya and Botswana 31 %.[8] In North America, one in three women has vaginal discharge syndrome (vaginosis). In Latin America, Chile reports up to 32 %, while in adolescents in Brazil, prevalences of more than 30 % are reported.[7]

In Cuba, vaginal infections represent a frequent health problem, since 95 % of patients are consulted for vaginal discharge in primary health care services. There are reports indicating that cervicovaginal infections occur with an incidence of 7-20 % per year.[7]

The study of the clinical and epidemiological factors associated with vaginal discharge syndrome is of great importance, since this condition has a significant impact on the quality of life of affected women and can have serious complications.[9]

Therefore, it is essential to identify the risk factors associated with this condition in order to prevent its occurrence and improve its treatment. Several factors predispose to vaginal discharge syndrome such as the number of sexual partners, non-use of condoms, practice of anal sex, age between 27 and 38 years, early onset of sexual intercourse (before 19 years of age). [5]In addition, previous history of sexually transmitted infection, more than three pregnancies, previous abortions, non-use of condoms during sexual intercourse, as well as the presence of urinary tract infection and diabetes mellitus can also be included.[10]The proximity of the woman's lower urogenital tract to the anal region exposes it to contact with microorganisms from the intestine, which favors the appearance of vulvo-vaginal and urinary tract infections. Also intimate hygiene habits predispose to the appearance of this syndrome, which are the frequency of hygiene, the form of hygiene, hand washing before urinating and defecating and hand washing after urinating and defecating; the drying of intimate parts after urinating and the material of the underwear used.[11]

During pregnancy this is a problem that represents one of the main reasons for consultation in health facilities. The functional and hormonal changes that occur during pregnancy increase the risk of infections.

Vaginal infections during pregnancy often remain asymptomatic, so if they are not treated in a timely and comprehensive manner, they can lead to maternal and perinatal complications.[3]

According to statistical data from the Department of Hygiene and Microbiology of the municipality of Consolación del Sur, between March and September 2023, a total of 976 vaginal swabs were performed in pregnant women, of which 542 were positive and 58 showed bacterial growth. This shows that vaginal infections constitute an important health problem in pregnant women in the municipality.

In pregnant women, vaginal discharge syndrome is relevant because it increases the risk of obstetric complications such as premature rupture of membranes, spontaneous abortion, low birth weight, chorioamnionitis (infection of the amniotic fluid), among others, and favors the development of ascending infections in the vaginal canal, uterus and adnexa, which increase the risk of preterm delivery by up to 60 % and consequently, complications and perinatal mortality, increasing health care costs.[7] They have also been associated with postpartum endometritis and pelvic inflammatory disease or low fetal weight.[12,13]

After birth it has been associated with low Apgar scores, neonatal respiratory distress syndrome, newborn intensive care hospitalizations, as well as neonatal death.[14] That is why the preventive approach is determinant in the reduction of registered cases, being key the identification of the most frequent risk factors.[15]

In this population group, health education is essential both in preventing the onset of the syndrome and as a complement to pharmacological treatment once they are suffering from it, since several studies have linked patients' greater knowledge of their diseases with better therapeutic compliance and a significant improvement in their state of health as assessed by different biological parameters.[7]

Thus, any action that promotes the increase of pregnant women's knowledge about this syndrome contributes to modify risk behaviors.[13] Hence, in recent times, multiple educational intervention studies have been designed on this subject both in pregnant patients and in women in the fertile period of their lives. In these interventions, it was determined that the initial level of knowledge of the participants was medium or low with respect to the different causes of vaginal discharge syndrome,[16] which led to inadequate behaviors in high percentages of the patients included in the sample.[17]

Vaginal discharge syndrome, frequently associated with vaginal infections, sexually transmitted or not, is a common condition in women, identified as one of the main causes of primary health care consultation in women of childbearing age. This syndrome is described as a serious public health problem worldwide, which damages the reproductive system of women. In pregnant women, it is particularly relevant due to its high frequency and the complications it usually causes for the mother and the fetus.

Primary health care is the first contact, in the search for help, for pregnant patients, where there is a constant struggle to achieve a successful pregnancy. Health professionals have the main task of contributing to this end, through actions of health promotion and disease prevention, resulting of great importance the educational work in order to raise the level of knowledge, which have shown a positive impact on changes in habits and lifestyles of patients. This is the reason for conducting this research, with the objective of evaluating an educational intervention strategy on vaginal discharge syndrome in pregnant women in the Villa 2 health area of the Polyclinic September 5, in the period from January 2023 to December 2024.

METHOD

An observational, analytical, and longitudinal study was conducted. Educational intervention type.

Universe

The universe was represented by 35 pregnant women, belonging to the Villa 2 health area of the September 5" Polyclinic of the Consolacion del Sur municipality, during the study period.

Sample

Selected by non-probabilistic sampling, it was represented by 27 pregnant women who accepted to participate in the study.

Exclusion criteria

Pregnant women who for some reason could not participate in more than 60 percent of the activities.

Methods for obtaining information

Diagnostic stage: this was carried out through a survey model that contained the variables under study, designed based on the literature review and in accordance with the research objectives.

Intervention design stage: an analysis of the initial results of the diagnosis was carried out and the educational program was designed.

Application and evaluation of the educational strategy: the same initial survey was applied, days after the end of the intervention, to measure the results of the intervention, based on the changes in the level of

knowledge of the pregnant women on the subject.

For the statistical analysis of this information, the final results were processed and presented in distribution tables with absolute frequency and percentage value as units of measurement, for better understanding. For inferential statistics the McNemar test was applied, in all cases it was taken as a significant difference when the p value resulted ≤ 0,05.

RESULTS

Table 1. Level of knowledge about vaginal discharge syndrome of pregnant women according to age

Level of knowledge about vaginal discharge syndrome in pregnant women.	Age (years)											
	≤20		21-35		>35		≤20		21-35		>35	
	Before						After					
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Adequate	2	7,4	9	33,3	0	0,0	5	18,5	16	59,3	3	11,1
Inadequate	4	14,8	8	29,6	4	14,8	1	3,7	1	3,7	1	3,7
Total	6	22,2	17	62,9	4	14,8	6	22,2	17	62,9	4	14,8

Table 1 shows a predominance of pregnant women between 21 and 35 years of age (62,9 %). When observing the change in the level of knowledge taking into account age, it was found that the level of knowledge about vaginal discharge syndrome increased in all age groups.

Table 2. Distribution according to school level and level of knowledge about vaginal discharge syndrome in pregnant women

Level of knowledge about vaginal discharge syndrome in pregnant women	School level											
	High school		Pre-university		University		High school		Pre-university		University	
	Before						After					
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Adequate	3	11,1	4	14,8	4	14,8	11	40,7	7	25,9	6	22,2
Inadequate	11	40,7	3	11,1	2	7,4	3	11,1	0	0,0	0	0,0
Total	14	51,8	7	25,9	6	22,2	14	51,8	7	25,9	6	22,2

In the sample studied, pregnant women with a high school level (51,8 %) predominated, followed by pregnant women with a preuniversity degree (25,9 %). With the implementation of the educational intervention, all pregnant women with a school level higher than 12th grade reached an adequate level of knowledge on the subject, although it is important to point out that only 3 pregnant women out of all the participants did not reach an adequate level of knowledge.

Table 3. Level of knowledge about symptoms of vaginal discharge syndrome in pregnant women before and after the intervention

Result	Level of knowledge about risk factors for vaginal discharge syndrome in pregnant women		McNemar's test (p)
	Before	After	
Adequate	9	25	0,000*
Inadequate	18	2	

Table 3 shows that of the 27 patients studied, 8 had an adequate level of knowledge about the symptomatology of vaginal discharge syndrome, increasing this number after the intervention to 22 patients. After applying McNemar's statistical test, it was possible to confirm that this increase was statistically significant with 95 % certainty.

Table 4. Level of knowledge of risk factors for vaginal discharge syndrome in pregnant women before and after the intervention

Result	Level of knowledge about symptomatology of vaginal discharge syndrome in pregnant women		McNemar's test (p)
	Before	After	
Adequate	8	22	0,000*
Inadequate	19	5	

Of the total number of patients studied, 9 had an adequate level of knowledge about the risk factors of vaginal discharge syndrome in pregnant women, increasing this number after the intervention to 25 patients. After applying McNemar's statistical test, it was found that this increase was statistically significant with a p <0,05.

Table 5. Level of knowledge about complications of vaginal discharge syndrome in pregnant women before and after the intervention

Result	Level of knowledge about Complications of vaginal discharge syndrome in pregnant women		McNemar's test (p)
	Before	After	
Adequate	6	22	0,000*
Inadequate	21	5	

Of the total number of **pregnant women** studied, 6 had an adequate level of knowledge about the complications of vaginal discharge syndrome, and this number increased after the intervention to 22 patients. After applying McNemar's statistical test, it was found that this increase was statistically significant with a p <0,05.

DISCUSSION

Vaginal infections are one of the most frequent reasons for prenatal visits and are responsible for an important percentage of maternal morbidity and perinatal morbidity and mortality. Pregnant women easily develop vaginal infections due to functional and hormonal changes.[18]

The main causes of abnormal vaginal discharge include the presence of bacterial vaginitis, trichomona vaginalis or yeast infection, among others. Most vaginal discharge is not caused by sexually transmitted infections but by reproductive tract infections caused by the overgrowth of organisms found in the vagina and generate the so-called bacterial vaginosis. Within the syndromic management of vaginal discharge, counseling to help the patient to make the necessary changes in her attitudes and behavior to reduce the risk factors and prevent its appearance is of extraordinary relevance.[19] Fundamentals on which this research was based, in pregnant women.

Among the pregnant women who participated in this educational intervention, pregnant women between 21 and 35 years of age predominated, and the overall level of knowledge increased in all groups after the intervention.

Viera and collaborators,[7] as well as Tonconi,[12] in interventions carried out in pregnant women with vaginal infection obtained a predominance of pregnant women between 25 and 29 years of age, similar to the present study, in which the level of knowledge about the treated topic increased with the intervention. Another study with characteristics similar to those of the present study had a greater number of pregnant women between 30 and 49 years of age,[17] which is related to the tendency in many countries to reproduce at increasingly older ages. A study carried out in Mayari showed a predominance of pregnant women between 15 and 19 years of age.[20]

The greater number of pregnant women with secondary education in the study could be related to the fact that this is a predominantly rural area, where there is a greater tendency among women to marry at an early age and not to continue studying.

The existence of bacterial vaginosis has been related to illiteracy, poor hygiene conditions and low socioeconomic status.[21] Therefore, it is important to instruct on the subject with emphasis on pregnant women with lower educational level, guaranteeing the same level of educational work for all.

International studies based on interventions on sexually transmitted infections in women coincide with the educational level and the positive results of the intervention, raising the level of knowledge.[16,17] Other Cuban studies refer to a greater number of pregnant women with a higher educational level than those in this research.[7]

It is suggested that the level of schooling constitutes a factor of vital importance in the acquisition of knowledge about the appearance of genital infection; the higher the level of schooling, the greater the knowledge about the different ways of acquiring and preventing them, as well as the possible complications they can have on the state of health. In correspondence with the above, it is necessary to point out that, although only 3 pregnant women out of all the participants did not reach an adequate level of knowledge, these corresponded to those with the lowest level of schooling.

Most studies on vaginal discharge focus on the reproductive stage of women, but it should be taken into account that there are variations related to age and physiological conditions such as pregnancy. According to the literature, it is also known that pregnancy conditions this type of infections due to the modifications it produces in the woman's organism, both in the urinary tract and immunologically. These bring with them

complications for the mother and the fetus.[22]

Hence the importance of this educational intervention, in which it was demonstrated that the level of knowledge about the different topics was insufficient before the intervention, increasing significantly after the intervention, the level of knowledge about risk factors of vaginal discharge syndrome, its symptoms and complications in pregnant women.

Orihuela,[22] states that there are multiple risk factors for women to contract this syndrome that affects the ecosystem of their genitals, these may be the products they use for hygiene, self-medicated antibiotics, diabetes, inadequate sexual practices and hygiene of the anus and genitals. This shows that hygiene habits do have a significant influence on the vaginal discharge syndrome in the pregnant women studied, who were also found to have a low level of knowledge about these risk factors.

Chauca,[23] also points out poor hygienic habits as an important risk factor that could be modified with educational work. Other authors also identified a low level of knowledge about this risk factor in the appearance of vaginal discharge,[24,25] which leads them to adopt a behavior of acceptance and indifference to this condition.[26]

Aparicio and collaborators,[27] report that 95 % of the population studied by them had a medium knowledge, followed by 5 % who have a high knowledge about vaginal infections, in addition it was observed that 28,3 % had a low knowledge about the predisposing factors for this disease.

In the intervention carried out by Suárez,[20] the topic on the symptomatology of vaginal discharge syndrome was the best mastered, but there was a lack of knowledge about the risk factors and the complications that vaginal discharge syndrome can produce during gestation, which were positively modified after the educational program was developed.

Regarding the complications of vaginal discharge syndrome in pregnant women, review studies concluded that the risk of unfavorable obstetric complications such as: abortion, low birth weight, preterm birth, premature rupture of membranes, chorioamnionitis, amnionitis, threat of preterm delivery and postpartum infections is much higher in pregnant women with bacterial vaginosis.[28,29] This reinforces the importance of this intervention.

Preterm delivery is one of the most feared complications in the development of a pregnancy due to the immaturity of the neonate, which increases neonatal mortality. A meta-analysis study based on a review of 50 articles on the risk factors associated with preterm delivery identified an important casuistry of bacterial vaginosis, and recommended the relevance of detecting and treating asymptomatic bacteriuria in prenatal check-ups, since this can contribute to reducing the incidence of preterm delivery, especially when there is a history of preterm delivery.[30]

Carhuamaca,[19] found a statistical relationship between preterm delivery and bacterial vaginosis in a review. Figueroa,[31] also agrees with the previous approach.

Cardenas and Lira, with the implementation of an educational program to improve attitudes towards vaginal discharge syndrome, concluded that attitudes towards this syndrome improved significantly with the intervention.[17]

Educational interventions on sexually transmitted infections in different age groups and heterogeneous population areas have shown effectiveness with a significant increase in the level of knowledge about the topics taught.[32,33]

Alava,[34] reports that educational interventions on this topic carried out by health personnel allow changing habits in pregnant women that prevent maternal and neonatal complications associated with vaginal discharge syndrome.

The intervention carried out proved to be effective in raising the level of knowledge of pregnant women about vaginal discharge syndrome. It is necessary to continue carrying out studies of this type, not only in pregnant women but also in women in general, especially those of childbearing age, in order to prevent the appearance of diseases associated with vaginal discharge and its complications.

CONCLUSIONS

In general, the sample was characterized by a predominance of pregnant women between 21 and 35 years of age and a predominance of pregnant women with secondary school level. The level of knowledge about the symptomatology of vaginal discharge syndrome in pregnant women, as well as the risk factors and complications of the vaginal condition, was significantly modified positively by the educational intervention.

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FUNDING

The authors did not receive funding for the development of the present research.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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