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Analysis of the Effect of Comprehensive Sexual Health Education on Improving Women's Health Knowledge and Reducing the Incidence of Gynecological Diseases

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Abstract: *Objective:* To explore the actual effect of comprehensive sexual health education on improving women's health knowledge and reducing the incidence of gynecological diseases. *Methods:* 200 women of childbearing age who participated in health management in the community from March 2022 to August 2023 were selected and randomly divided into an oral education group (conventional oral education) and a comprehensive education group (comprehensive sexual health education), with 100 cases each. The comprehensive education group implemented health education for 5 months through concentrated lectures, graphic manuals, interactive Q&A, and regular follow-up visits. The scores of health care knowledge mastery (0–100 point scale), health behavior standard rate, and cumulative incidence of gynecological diseases were compared between the two groups before and after the intervention. *Results:* There was no difference in the knowledge scores between the two groups before the intervention (oral education group 63.45 ± 6.21 vs comprehensive education group 62.89 ± 6.05, $p > 0.05$). After intervention, the comprehensive education group improved to (82.37 ± 7.14), which was significantly higher than the oral education group (68.92 ± 7.33) ($p < 0.05$). The standard rate of healthy behaviors (regular gynecological examinations, correct hygiene habits, and standardized contraceptive measures) in the comprehensive education group reached 76.00% (76/100), which was significantly higher than the 51.00% (51/100) in the oral education group ($p < 0.05$). In terms of disease incidence, the comprehensive education group had lower vaginitis (11.00%), cervicitis (8.00%), and pelvic inflammatory disease (4.00%) than the oral education group (23.00%, 17.00%, and 12.00%, respectively) ($p < 0.05$). *Conclusion:* Comprehensive sexual health education can significantly improve women's health knowledge, effectively reduce the incidence of common gynecological diseases by strengthening healthy behavioral norms, and is suitable for the promotion of primary health services.

Keywords: Comprehensive sexual health education; Women's health knowledge level; Incidence of gynecological diseases; Effectiveness

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1. Introduction

Women's health is an important foundation for national health and a key indicator to measure the progress of social

civilization. With changes in lifestyle and adjustments to fertility policies, the health challenges faced by women of childbearing age have become increasingly complex. This is reflected in the entire process from adolescent health care to pregnancy and childbirth management, from gynecological inflammation prevention and control to reproductive health maintenance. Women's health needs throughout their life cycle have therefore become diversified. The incidence of common gynecological diseases among women of childbearing age in my country has been at a high level for a long time. This not only affects women's quality of life, but may also increase long-term risks such as infertility and tumors [1]. Against this background, how to improve women's self-care capabilities through effective health intervention has become an important issue that needs to be solved by primary health services. Health education, as the core means of primary prevention of diseases, is recognized as one of the most cost-effective strategies to improve women's health outcomes. Traditional health education is mostly based on a single form of oral education. Although it can convey basic information, there are problems such as fragmented content, insufficient interactivity, and poor sustainability. These problems lead to low knowledge retention rates and limited behavior change effects [2]. In recent years, a comprehensive health education model has gradually emerged, which uses a variety of methods to promote the formation and maintenance of healthy behaviors more effectively. Based on this, this study took women of childbearing age in the community as the subjects, compared the intervention effects of conventional oral education and comprehensive sexual health education models, and observed their effects.

2. Materials and methods

2.1. General information

200 women of childbearing age who participated in health management in the community from March 2022 to August 2023 were selected and divided into an oral education group and a comprehensive education group with 100 cases each according to the random number table method. The age range of the oral preaching group is 23–48 years old, with an average age of (31.25 ± 5.17) years, BMI (22.13 ± 2.85) kg/m^2, and 72.00% of the people are married; comprehensive preaching The age of the group was 22–49 years old, with an average age of (30.89 ± 5.34) years, BMI (22.45 ± 3.02) kg/m^2, and the proportion of married people was 75.00%. The baseline data of the two groups were balanced and comparable.

2.1.1. Inclusion criteria

(1) Resident women of childbearing age in the community aged 20–50;
(2) Not receiving systematic gynecological health education in the past year;
(3) Voluntarily signing an informed consent form

2.1.2. Exclusion criteria

(1) Combined with malignant tumors or immune system diseases;
(2) Previous mental illness or cognitive impairment;
(3) Planning to move or go out for a long time during the intervention period.

2.2. Method

The oral education team adopts conventional oral education methods, that is, when women receive health consultation or routine examinations at community health management points, medical staff will verbally explain some basic gynecological health care knowledge, key points of prevention of common diseases and other health knowledge based on their actual conditions (for example, emphasizing the importance of daily vulvar cleaning to patients with vaginitis, reminding patients with cervicitis to avoid unclean sex, and explaining the need for timely treatment of lower reproductive tract infections to patients with pelvic inflammatory disease). The education lasts for about 5–10 minutes each time, and will not be followed up and reinforced thereafter.

The comprehensive education team implements comprehensive sexual health education. The specific methods are as follows:

(1) Centralized lectures (Organized once a month, 60–90 minutes each time, lectured by the attending gynecologist)
The lecture content is designed according to the characteristics of the gynecological specialty. In the first month, the anatomy and physiology of the female reproductive system will be taught, combined with the pathogenesis of vaginitis, cervicitis, and pelvic inflammatory disease, to explain the relationship between the functions of various organs and the occurrence of diseases; second The first month focuses on the early symptoms and identification methods of common gynecological diseases, such as vulvar itching and abnormal leucorrhea of vaginitis, contact bleeding of cervicitis, lower abdominal pain of pelvic inflammatory disease, etc. Case pictures will also be displayed to help understanding; the third month introduces preventive measures for diseases, including the prevention points of different diseases; the fourth month talks about the importance of standardized treatment and precautions for taking medication according to the doctor's instructions; the fifth month provides comprehensive guidance on healthy behaviors. After the lecture, 15 minutes were allowed for women to ask questions.

(2) Distribute graphic manuals
The content of the manual is compiled according to the key points of the lecture. It includes color anatomy diagrams, disease symptom comparison tables, preventive measures flow charts, etc., such as a diagram of the steps for cleaning the vulva (wash with warm water every day, from front to back, do not take a bath, etc.), a list of sexual hygiene precautions (things Cleaning before and after, fixing sexual partners, etc.), and suggestions for scheduling gynecological examinations (married women should undergo cervical screening once a year, and see a doctor promptly if they have symptoms, etc.). These will be distributed during the first lecture, and manual pages with relevant content will be added to each subsequent lecture to ensure that everyone has a complete manual.

(3) Interactive Q&A
A group interaction will be held after the centralized lecture every month. 100 women will be divided into 10 groups. Each group will be led by a gynecological nurse. Discussion will focus on the lecture content of the month and the key and difficult points in the manual. The nurse will answer the personality questions raised by the women in detail. issues (such as the choice of contraceptive measures for different age groups, health care points for postmenopausal women, etc.), and at the same time guide group members to share their own health experiences. Each group interaction time should be no less than 30 minutes. Nurses should record the questions and focus on answering common questions before the next lecture.

(4) Regular follow-up
During the intervention period, there will be a telephone follow-up every month and a face-to-face follow-up every 2 months. The follow-up will be conducted by gynecological nurses who participate in health education. The follow-up includes asking women about their knowledge of health knowledge and implementation of healthy behaviors (such as whether they clean their vulva as required in the manual, whether they have regular gynecological examinations, etc.), and questions about behaviors that are not standardized. In order to provide individualized guidance, for example, for those who do not have regular examinations, recommend appropriate examination time based on their age and health status and help make appointments; for those with poor hygiene habits, demonstrate the correct cleaning method again; at the same time, record the physical condition of women and remind them to see a doctor promptly if they have abnormal symptoms. Each follow-up is 10–15 minutes, and the follow-up content is recorded in detail and archived.

2.3. Observation indicators

Compare the health care knowledge mastery score (0–100 point scale), health behavior standard rate and cumulative incidence of gynecological diseases between the two groups before and after the intervention.

2.4. Statistical methods

The data were processed with SPSS22.0 software, and x^2 statistics and *t* test were performed. $p < 0.05$ indicated that the difference was significant.

3. Results

3.1. Comparison of health care knowledge mastery scores between the two groups

The comprehensive health care knowledge mastery score of the comprehensive education group was higher than that of the oral education group, $p < 0.05$, see **Table 1**.

Table 1. Comparison of health care knowledge mastery scores between the two groups ($\bar{x} \pm s$, points)

Group	Before intervention	After intervention
Oral preaching group (n = 100)	63.45 ± 6.21	68.92 ± 7.33
Comprehensive mission team (n = 100)	62.89 ± 6.05	82.37 ± 7.14
t	0.646	13.144
p	0.519	0.000

3.2. Comparison of health behavior standard rates

The comprehensive mission group was higher, $p < 0.05$. As shown in **Table 2**.

Table 2. Comparison of healthy behavior norm rates between the two groups [n (%)]

Group	Total number of cases	Number of healthy behavior norms	Health behavior standard rate
Oral preaching group (n = 100)	100	51	51.00%
Comprehensive mission team (n = 100)	100	76	76.00%
χ^2			13.483
p			0.000

3.3. Comparison of disease incidence rates between the two groups

The comprehensive mission group was even lower, $p < 0.05$. As shown in **Table 3**.

Table 3. Comparison of incidence rates between the two groups [n (%)]

Groups	Vaginal	Cervicitis	Pelvic inflammatory disease
Oral preaching group (n = 100)	23(23.00%)	17(17.00%)	12(12.00%)
Comprehensive mission team (n = 100)	11(11.00%)	7(7.00%)	4(4.00%)
χ^2	5.103	4.735	4.348
p	0.024	0.030	0.037

4. Discussion

In recent years, with the continuous improvement of the primary health service system, women's health care has gradually

become an important part of community health management. Women of childbearing age are a group with a high incidence of gynecological diseases. Their mastery of health care knowledge and the standardization of health behaviors directly affect the risk of gynecological diseases. The conventional health education model has no obvious effect in improving women's health awareness and reducing the incidence of diseases. Comprehensive sexual health education has gradually attracted attention because of its multi-faceted and systematic intervention characteristics.

Judging from the improvement in health care knowledge mastery scores, the scores of the comprehensive education group after the intervention were significantly higher than those of the oral education group. This is directly related to the benefits of comprehensive health education in the depth and breadth of knowledge transmission. Conventional oral education is mostly fragmented information transmission. Medical staff only give brief explanations during women's consultation or examination. The content is limited to immediate issues and lacks Systematization and coherence, and the centralized lectures of the comprehensive education team have formed a complete knowledge system through staged and progressive content design, from the anatomy and physiological basis of the reproductive system to the pathogenesis of the disease, symptom identification, preventive measures and treatment principles. This systematic knowledge transmission method is in line with cognitive laws and can help women build a clear knowledge framework without It is to memorize scattered information in isolation, thereby providing a theoretical basis for subsequent preventive actions [3,4]. At the same time, the distribution of graphic manuals makes up for the shortcomings of oral explanations. Visual elements such as anatomical diagrams and symptom comparison tables in the manual can strengthen the memory effect, allowing women to refer to it at any time after class to consolidate the key points of knowledge. The interactive Q&A session uses targeted Personalized answers to questions eliminate blind spots in knowledge understanding, such as the choice of contraceptive measures for different age groups, which directly respond to women's confusion in real life and further deepen their understanding of the application of knowledge. These measures work together to shift women's mastery of health care knowledge from superficial cognition to deep understanding in the comprehensive education group, which is ultimately reflected in a significant improvement in scores.

The difference in healthy behavior norm rates essentially reflects the driving effect of health education on behavior change. The oral education group has a lower health behavior norm rate, mainly because conventional oral education only conveys knowledge information and lacks guidance and reinforcement of behavioral practices. However, the comprehensive health education of the comprehensive education group achieves an effective transformation from knowledge to behavior through the intervention of multiple links. The focus on health in the lectures. Specific guidance on healthy behaviors (such as the correct steps for vulva cleaning, the timing of gynecological examinations) clarifies the operational standards of behavior so that women know "how to do it". The flow charts and lists in the graphic manual transform abstract behavioral requirements into executable steps, such as the list of sexual hygiene precautions, which provide women with specific action guidelines. The experience sharing of team members in the interactive Q&A session, through the peer demonstration effect, the feasibility and persuasiveness of behavioral practice are enhanced. For example, women who have developed the habit of regular examinations share their experiences, which can reduce other women's resistance to examinations. Regular follow-up corrects irregular behaviors through continuous supervision and individualized guidance. For example, re-demonstration of those with poor hygiene habits ensures the accuracy of behavioral execution. From the perspective of disease characteristics, gynecology. The occurrence of diseases is closely related to behavioral habits [5,6]. The prevention of vaginitis relies on standardized vulva cleaning and sexual hygiene. The prevention and control of cervicitis require avoiding unclean sex and regular cervical screening. The prevention of pelvic inflammatory disease emphasizes timely treatment of lower reproductive tract infections. Health education targets the behavioral triggers of these diseases and carries out precise behavioral intervention, which significantly improves the rate of healthy behavior standardization.

The reduction in the cumulative incidence of gynecological diseases is the result of the joint action of comprehensive health education in knowledge transfer and behavioral intervention, and is highly consistent with the pathogenesis of different diseases. The occurrence of vaginitis is mostly related to vaginal microecological imbalance. The comprehensive

education team has used health education to help women master the correct methods of cleaning the vulva (such as avoiding excessive flushing and using warm water to wash). It reduces the destruction of vaginal flora caused by human factors; at the same time, the emphasis on sexual hygiene (such as cleaning before and after) reduces the risk of pathogen invasion, thereby reducing the incidence of vaginitis. The main causative factors of cervicitis include pathogen infection (such as HPV, chlamydia) and cervical damage. The health education of the comprehensive education team strengthens the understanding of the hazards of unclean sex and promotes. Encourage women to take measures such as having a fixed sexual partner and using condoms, which reduces the chance of pathogen transmission. At the same time, the promotion of regular cervical screening allows early detection and treatment of early cervical lesions, reducing the risk of progression of cervicitis. Therefore, the incidence of cervicitis in the comprehensive education group is significantly lower than that in the oral education group. The incidence of pelvic inflammatory disease is mostly caused by the upward spread of lower genital tract infections. Through education, the education team makes women realize the importance of timely treatment of lower genital tract infections such as vaginitis and cervicitis in preventing pelvic inflammatory disease, prompting them to seek medical treatment promptly when symptoms occur, blocking the upward path of infection; in addition, the explanation of the key points of care after uterine operations (such as abortion) reduces the possibility of postoperative infection, thereby reducing the incidence of pelvic inflammatory disease [7,8].

The benefits of comprehensive sexual health education are also reflected in its systematicness and pertinence in the prevention of gynecological diseases. Conventional oral education is difficult to cover the entire chain of disease prevention due to lack of planning. However, the intervention measures of the comprehensive education group form a closed loop of “knowledge transfer-behavior guidance-continuous supervision”. The centralized lectures ensure the systematicity of knowledge, and the graphic manual provides It provides continuity of behavioral reference; interactive Q&A solves the cognitive bias caused by individual differences, and regular follow-up ensures the consistency of behavioral execution. This multi-faceted intervention model can implement comprehensive prevention strategies based on the complexity of gynecological diseases (such as multiple pathogenic factors and correlations between diseases), so that women can fully implement preventive measures. In addition, comprehensive health education’s targeted intervention in different diseases avoids generalized health guidance and improves prevention efficiency. The maintenance of bacterial flora balance for vaginitis, screening and infection control of cervicitis, and blocking of ascending infection of pelvic inflammatory disease are all designed based on the unique pathogenesis of each disease. This kind of precise intervention can effectively reduce the risk of specific diseases compared with the general guidance of conventional oral education. This is also an important reason why the incidence rate of various diseases in the comprehensive education group is lower than that of the oral education group [9,10].

To sum up, comprehensive sexual health education has significantly improved women’s health care knowledge, standardized health behaviors, and reduced the incidence of common gynecological diseases through systematic knowledge transfer, precise behavioral intervention, and systematic prevention strategies based on the characteristics of gynecological diseases. The advantage is that it can combine the characteristics of the disease to achieve the transformation from cognition to behavior, and form a sustained preventive effect through multi-link intervention, providing an effective practice model for grassroots women’s health care work.

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Disclosure statement

The author declares no conflict of interest.

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