EDUCATIONAL TECHNOLOGY BASED ON NOLA PENDER: PROMOTING ADOLESCENT HEALTH
TECNOLOGIA EDUCACIONAL BASEADA EM NOLA PENDER: PROMOÇÃO DA SAÚDE DO ADOLESCENTE
TECNOLOGÍA EDUCACIONAL BASADA EN NOLA PENDER: PROMOCIÓN DE LA SALUD DEL ADOLESCENTE

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ABSTRACT

Objective: to present an educational technology in Nursing, directed at adolescents, about vaccination against HPV, based on the Nola Pender health promotion model. **Method:** qualitative, descriptive study of the experience report about the creation and application of an educational technology composed of two teaching strategies on the Human Papillomavirus vaccine. The research was carried out in municipal schools, linked to the Family Health Strategy, with adolescents from nine to 13 years old. The sample consisted of 157 adolescents. **Results:** Nursing interventions based on scientific and theoretical knowledge are effective in relation to traditional activities that are transferred vertically and without interaction. **Conclusion:** the use of educational technologies promoted a positive impact on the acquisition/appropriation of knowledge by the adolescents studied and indicates the need to invest in effective educational technologies that emphasize the autonomy of the adolescent in the decision making process. **Descriptors:** Adolescent; Nursing; Health Education; Educational Technology; Papillomaviridae; Vaccination.

RESUMO

Objetivo: apresentar uma tecnologia educativa em Enfermagem, voltada para adolescentes, acerca da vacinação contra o HPV, baseada no modelo de promoção da saúde de Nola Pender. **Método:** estudo qualitativo, descritivo, do tipo relato de experiência, acerca da criação e aplicação de uma tecnologia educacional composta por duas estratégias de ensino sobre a vacina contra o Papilomavírus Humano. A pesquisa foi realizada em escolas municipais, vinculadas à Estratégia de Saúde da Família, com adolescentes dos nove aos 13 anos. A amostra foi constituída por 157 adolescentes. **Resultados:** intervenções de Enfermagem baseadas em conhecimento científico e teórico demonstram-se efetivas em relação às atividades tradicionais repassadas de forma vertical e sem interação. **Conclusão:** o uso de tecnologias educacionais promoveu impacto positivo na aquisição/apropriação de conhecimento pelos adolescentes estudados e sinaliza a necessidade de se investir em tecnologias educacionais eficazes que primem pela autonomia do adolescente no processo de tomada de decisão. **Descritores:** Adolescentes; Enfermagem; Educação em Saúde; Tecnologia Educacional; Papillomaviridae; Vacinação.

RESUMEN

Objetivo: presentar una tecnología educativa en enfermería dirigida a adolescentes acerca de la vacunación contra el VPH basada en el modelo de promoción de la salud de Nola Pender. **Método:** estudio cualitativo, descriptivo, del tipo relato de experiencia acerca de la creación y aplicación de una tecnología educativa compuesta por dos estrategias de enseñanza acerca de la vacuna contra el Papilomavirus Humano. La investigación fue realizada en escuelas municipales vinculadas a la Estrategia de Salud de la Familia con adolescentes de 9 a 13 años. La muestra fue constituída por 157 adolescentes. **Resultados:** intervenciones de enfermería basadas en conocimiento científico y teórico se demuestran efectivas en relación a las actividades tradicionales repassadas de forma vertical y sin interacción. **Conclusión:** el uso de tecnologías educativas promovió un impacto positivo en la adquisición/apropiación de conocimiento por los adolescentes estudiados y señalan la necesidad de invertir en tecnologías educativas eficaces que priman por la autonomía del adolescente en el proceso de toma de decisión. **Descritores:** Adolescente; Enfermería; Educación em Salud; Tecnología Educacional; Papillomaviridae; Vacunación.

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INTRODUCTION

The Human Papillomavirus (HPV) vaccine is a primary prevention tool that can be considered an important device to reduce the incidence of cervical cancer.¹ In Brazil, vaccination against Human Papillomavirus was made available by the Brazilian National Health System in March of 2014, with initial target audience of female adolescents. The vaccination campaign was carried out in schools by primary care nurses, however, without educational activities related to the topic.

The international literature highlights the importance of the HPV vaccine within the vaccine schedule, however, one of the barriers is the lack of awareness about cervical cancer and the relationship with the Human Papillomavirus.²

In order for vaccine adherence to the human papillomavirus to take place consciously, it is necessary to use educational technology in order to clarify the benefits and adverse effects of the vaccine by supporting health promotion. Educational technologies are defined as a systematic set of scientific knowledge that enables the planning, execution, control and follow-up of the educational process.³

Among the Nursing models and theories that can be applied to develop nursing education technology, the Pender Health Promotion Model, which provides a simple and clear structure, allows for the planning, intervention and evaluation of actions of Nursing.⁴

The application of educational processes, dynamic and interactive, is highlighted among the programmatic actions directed to the promotion of adolescent health, being the strategies lúdicas and dialogic well accepted and appreciated among the young.⁵

Among the educational processes, we highlight the Educational Technologies that have, as one of the strategies, the theater, which goes beyond the informative and technical character of conventional health education, considering the individual as an active subject in the construction of their relationships, interpretations and composition of meanings, in interaction with the world and with other people.⁶

This research brings propositions of health education strategies about vaccination against HPV, based on the creation and use of educational technologies aimed at valuing the knowledge of the adolescent, based on the model of health education.

Thus, this research aims at the production and use of nursing education technology, systematized by scientific knowledge necessary to clarify doubts, myths and benefits about vaccination against HPV, based on interactive educational strategies to be applied by health professionals and/or educators in order to obtain conscious adherence to vaccination and consequent reduction in the near future of cervical cancer.

OBJECTIVE

- To present an educational technology in Nursing directed toward adolescents, about vaccination against HPV, based on the health promotion model by Nola Pender.

METHOD

A qualitative, descriptive study of the type of experience reported on the creation and application of an educational technology on the HPV vaccine. The research was carried out in municipal schools linked to the Family Health Strategy of the city of Juazeiro do Norte, from the Health Program at School, from June to December 2015.

The study was carried out in elementary schools I and/or II, linked to the health program in the urban school, with 100 to 200 students aged nine to 13 years. The choice was given, primarily, by elementary education II, because it had a larger number of adolescents in the age group surveyed, totaling four schools.

The following inclusion criteria were followed: a) prior authorization of the person in charge; b) the adolescent accept to participate of the educational technology of Nursing from the beginning to the end; c) have cognitive ability. We excluded the adolescents who did not attend the presentation of the nursing education technology. 157 female adolescents participated in the educational technology.

An educational technology of Nursing was elaborated, composed of two strategies of systematization of scientific knowledge: 1) Theatrical part addressing the main issues that involve the vaccination against HPV and 2) Application of the dynamics revealing mysteries and clarifying doubts. Statements about vaccination based on the process of adolescence, vaccine information, adverse effects, and comments found on social networks were given for adolescent groups to evaluate whether they are considered as truth or myth.

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Nursing educational technology, proposed for adolescents, was based on the Pender

Health Promotion model 7, as shown in the flow chart below.

Figure 1. Health promotion model, aimed at the vaccination of adolescents against Human Papillomavirus, adapted to the theory of Nola Pender⁷.

The project was sent to the Research Ethics Committee of the Regional University of Cariri, obtaining favorable opinion number 953.802/2015.

RESULTS

The play and the dynamics were written by the researcher in Nola Pender's theory appropriate to her professional experience and in the context of the Brazilian Northeast.

The play was composed of two scenarios, a narrator and four characters, these three adolescents and the mother of one. It began with scenario I, in the house of one of the adolescents, where the narrator begins telling the story of the approach of an 11-year-old teenagers and her mother, who works as a domestic in a family home. In this context, mother and daughter talk about adolescence and body changes during this phase, thus referring to the personal factors present in the theoretical model of health promotion. Still in this scenario, the mother, when listening to information on HPV vaccination on the television, demands that an 11-year-old daughter seek the "Health Post" of her neighborhood to receive the vaccine, but she refuses, for the importance of vaccination against HPV.

In scenario II, the narrator talks about the teenager's concern about vaccination against HPV. At this moment of the play, composed of three teenage characters, the audience is encouraged to understand a little about the following subjects: 1) Cancer of the cervix (one of the adolescents, having received prior information from a health professional, anguish, explains that the HPV vaccine serves to protect against cervical cancer and talks about the susceptibility to the disease as the genetic issue, change of sexual partners, and is a common disease among women in Brazil and in the world) and the main factor related to the disease is 2) Human Papillomavirus (sexually transmitted) and 3) the vaccine/vaccination, which serves to protect against some types of HPV more common as causes of cervical cancer.

In the staging, the benefits and adverse effects of HPV vaccination were explained to encourage the adolescent to be able to decide later for or against vaccination, based on the knowledge she acquired in the educational intervention.

After the play, the adolescents were invited to participate in the second part of the educational technology of Nursing created, the dynamic "truth or myth", in order to stimulate their active participation and

increase the knowledge regarding the factors addressed in the play.

In this dynamic, groups of five to six adolescents were formed and the cards were submitted with statements to be discussed among themselves, so that adolescents could present their point of view on the subject. The themes were subdivided with the following statements:

1) Adolescence: "Every teenager is rebellious"; "The person changes the appearance, the body and the behavior", "The menstruation is a bleeding that comes every month; in the beginning it is deregulated, that is, it can come messed up, without a certain day, but then it normalizes "," All girls feel colic every month when menstruation comes."

2) Cancer: "Cancer is a disease that strikes several people every day and kills thousands"; "Cancer is defined as the set of several diseases that have, in common, the disordered growth of cells and may be malignant or benign cellular changes that can lead to the death of people."

3) Cervical cancer: "Also called cervical cancer, cervical cancer is caused by persistent infection of some types of Human Papillomavirus"; "The diagnosis of cancer of the cervix is by the preventive examination called papanicolau. Factors such as the early onset of sexual activity, several different sexual partners, smoking and poor intimate hygiene may facilitate infection. "

4) Human Papillomavirus: "HPV means Human Papillomavirus and can cause cervical cancer"; "Condoms or condoms help prevent the spread of sexually transmitted diseases and HPV"; "If you got the HPV virus, after you go through treatment, you can get the virus again"; "The HPV virus can be transmitted through objects, using a toilet and swimming pool, or sharing towels and underwear"; "HPV virus transmission is by direct contact with infected skin"; "HPV is a virus that gets caught in the air"; "HPV means high standard of vaccine"; "Human papillomavirus (HPV) can be asymptomatic (without symptoms) or cause the appearance of warts on the skin and mucous membranes. It can form a malignant (bad) tumor like cancer of the cervix and the penis. "

5) Human Papillomavirus Vaccine: "The HPV vaccine is used in women aged nine to 25 years, but the Ministry of Health advocated from nine to 13 years"; "The HPV vaccine can make a person blind"; "The HPV vaccine protects against all types of cancer"; "The vaccine against HPV protects against cancer of the uterine cervix"; "With just one dose of the HPV vaccine, I'm free to have cervical cancer";

"The HPV vaccine protects against all sexually transmitted diseases such as AIDS and syphilis."

6) Human Papillomavirus Vaccination: "Vaccination against HPV will replace Pap Smear (screening test)"; "Teens can take the HPV vaccine without parental consent"; "The most observed vaccine reactions include pain, swelling and redness at the site of injection, and mild to moderate intensity headache"; "The vaccine is safe, does not lead to reactions or serious complications"; "Health professionals are the best people to provide information about the vaccine, what it is for and what the adverse effects are, ie reactions that the vaccine can cause in people."

7) Autonomy: "A person with autonomy is one who makes their own decisions"; "Autonomy is afraid of height"; "I can decide what is best for me, but for me to decide, I need to know to make the right choice"; "My parents should always tell me which decisions I should make"; "It is important to receive information about the vaccine so that I can decide whether to take it or not. This information includes the benefits and adverse effects."

It was remarkable, during the dynamics, that, even after the presentation of the play, the adolescents still presented doubts regarding the themes presented. Despite the news about vaccination in the television media, informative posters of the Ministry of Health and the network of information on the subject on the Internet, many adolescents are unaware of the real benefits and adverse effects of vaccination, highlighting the need for health professionals to work , more often on the subject, since they are the best people to provide reliable information about HPV vaccination.

The educational technology attracted the attention of the adolescents, because it was an educational activity that allowed the active participation of the subjects involved, facilitated by the health professionals in the schools. It is added that the vaccine against Human Papillomavirus was recently implanted in the Brazilian Unified Health System and, therefore, needs clarification.

DISCUSSION

Nola Pender's theory guided the educational technology of Nursing following the components: evaluation of personal factors; perception of benefits and barriers; interpersonal and situational influences.⁷ Health practices and public policies aim at educational proposals in order to instrumentalize lifestyle changes for the

adoption of healthy habits. This education confers reflexive movement on individuals, resulting in autonomy.⁸

The educational technology in Nursing, worked through the two educational strategies, enabled the interaction and participation of the adolescents to clarify doubts regarding topics from adolescence to decision making regarding vaccination against HPV. The truth or myth strategy was able to signal the misconceptions related to the HPV vaccine, identifying the low level of knowledge of the adolescents in relation to the subject.

These findings are also reported in the international literature, which points out that knowledge about the Human Papillomavirus and the vaccine is considered low and there are ambiguities that need to be clarified.⁹⁻¹²

National publications highlight the lack of knowledge on the subject among adolescents who have shown that they do not know the relationship between HPV and cervical cancer, with limited knowledge about transmission, development of HPV-related diseases and prevention^{13,14}

Educational interventions are important to raise awareness about the subject and there is a need for a health education campaign on HPV infection, cervical cancer and vaccination among the population.¹⁵

HPV education should be expanded so that adolescents and young adults are able to make decisions about their health behavior, including the choice to receive immunization.

Educational intervention is an important tool to encourage the autonomy of adolescents. The participation of children and adolescents in research must be succeeded by educational intervention, since, in this age group, they do not recognize the right to decide for themselves.⁶

Educational actions should be planned and performed by qualified and competent health professionals, involving the participation of people in the effective control of cervical cancer and genital HPV infections.¹⁷

The importance of nurses as educators is emphasized, and their practice is imbued with health promotion, encouraging the construction of a critical-reflexive awareness among adolescents.¹⁸

Schools were also highlighted as potential sites for vaccination against Human Papillomavirus, however, after applying the educational process of the students on the subject.¹⁹

CONCLUSION

The use of educational technology (Theater and Truth Dynamics or Myth) as an instrument of health education seems to have promoted a positive impact on the group of adolescents studied, since it fostered active participation, enabled the clarification of doubts, the approach to the theme and the real appropriation of knowledge. At the same time, it was opportune to map misconceptions about adolescents related to HPV vaccination and to cure them.

From educational interventions planned and systematized by health professionals, it is possible to favor the choice of a conscious way about vaccination. Therefore, the findings of this study indicate and reinforce the need to invest in effective educational technologies that emphasize the autonomy of adolescents in the decision-making process.

It is added that the use of Nola Pender's Nursing theory, to subsidize Nursing technology, contributes to the strengthening of Nursing as a science.

It is recommended that the practice of health education for the target audience and family members integrate the work process of the Family Health Strategy teams, since the Human Papillomavirus vaccine is surrounded by doubts and needs clarification about the benefits and adverse effects among the population.

REFERENCES

1. Kahn JA, Bernstein DI. HPV vaccination: too soon for 2 doses? JAMA. 2013 May; 309(17):1832-4. Doi: 10.1001/jama.2013.4147.
2. Mwaka AD, Wabinga HR, Mayanja-Kizza H. Mind the gaps: a qualitative study of perceptions of healthcare professionals on challenges and proposed remedies for cervical cancer help-seeking in post conflict northern Uganda. BMC Fam Pract. 2013 Dec;14(193):1-14. Doi: 10.1186/1471-2296-14-193.
3. Nietzsche EA, Backes VMS, Colomé CLM, Ceratti RN, Ferraz F. Tecnologias educacionais, assistenciais e gerenciais: uma reflexão a partir da concepção dos docentes de enfermagem. Rev Latino-Am Enfermagem. 2005 may/june; 13(3):344-53. Doi:10.1590/S0104-11692005000300009
4. Victor JF, Lopes MVO, Ximenes LB. Análise do diagrama do modelo de promoção da saúde de Nola J. Pender. Acta Paul Enferm. 2005 July/Sept;18(3):235-40. Doi:10.1590/S0103-21002005000300002

5. Lacerda ABM, Soares VMN, Goncalves CGO, Lopes FC, Testoni R. Oficinas educativas como estratégia de promoção da saúde auditiva do adolescente: estudo exploratório. *Audiol Commun Res*. 2013 Apr/June;18(2):85-92. Doi: 10.1590/S2317-64312013000200006
6. Gazzinelli MF, Souza V, Araújo LHL, Costa RM, Soares AN, Maia CPC. Teatro na educação de crianças e adolescentes participantes de ensaio clínico. *Rev Saúde Pública*. 2012 Dec;46(6): 999-1006. Doi: 10.1590/S0034-89102012000600009
7. Pender NJ, Murdaugh CL. *Health. Promotion in nursing practice*. 5th ed. New York: Pearson; 2014.
8. Santos I, Soares CS, Berardinelli LMM. Promovendo o autocuidado de clientes com obesidade e coronariopatia: aplicação do diagrama de pender. *Rev Enferm UERJ* [Internet]. 2013 July/Sept [cited 2015 Jan 13];21(3):301-6. Available from: <http://www.e-publicacoes.uerj.br/index.php/enfermagemuerj/article/view/7457/5400>
9. Grimminger DS, Frerichs L, Bird AEB, Workman K, Dobberpuhl M, Galloway SW. HPV Knowledge, Attitudes, and Beliefs Among Northern Plains American Indian Adolescents, Parents, Young Adults, and Health Professionals. *J Canc Educ*. 2013;28(1):357-66. doi: 10.1007/s13187-013-0468-y.
10. Getricha CM, Broidy LM, Kleymann E, Helitzer DL, Kong AS, Sussman AL. Different models of HPV vaccine decision-making among adolescent girls, parents, and health-care clinicians in New Mexico. *Ethnicity & Health*. 2014;19(1):47-63. doi: 10.1080/13557858.2013.857767.
11. Tavlaris JLB, Garcini L, Sanchez O, Hernandez I, Navarro AM. Focus Group Discussions in Community-Based Participatory Research to Inform the Development of a Human Papillomavirus (HPV) Educational Intervention for Latinas in San Diego. *Cancer Educ*. 2013 dec. 28(4):1-10. doi: 10.1007/s13187-013-0516-7.
12. Marlow LA, Wardle J, Grant N, Waller J. Human papillomavirus (HPV) information needs: a theoretical framework. *J Fam Plann Reprod Health Care*. 2009 Jan;35(1):29-33. doi: 10.1783/147118909787072432.
13. Baruffi LM. Estudo exploratório do conhecimento das adolescentes sobre o papilomavírus humano relacionado ao câncer de colo do útero. *Rev UNILUS* [Internet]. 2015 Apr/June [cited 2017 Sept 29];12(27):5-15. Available from: <http://revista.unilus.edu.br/index.php/ruep/article/view/373/u2015v12n27e373>
14. Costa LA, Goldenberg P. Papilomavírus Humano (HPV) entre jovens: um sinal de alerta. *Saúde Soc*. 2013 Jan/Mar;22(1):249-61. Doi: 10.1590/S0104-12902013000100022
15. Alsaad MA, Shamsuddin K, Fadzil F. Knowledge towards HPV infection and HPV vaccines among syrian mothers. *Asian Pac J Cancer Prev*. 2012;13(3):879-83. PMID: 22631665
16. Blodt S, Holmberg C, Müller-Nordhorn J, Rieckmann N. Human Papillomavirus awareness, knowledge and vaccine acceptance: A survey among 18-25 year old male and female vocational school students in Berlin, Germany. *Eur J Public Health*. 2012 dezembro; 22(6):808-13. Doi: 10.1093/eurpub/ckr188
17. Amaro CO, Pinheiro DN, Pinheiro MCN, Xavier MB, Parente NA. Aspectos educativos do programa de prevenção do câncer do colo do útero, Belém, Pará, Brasil. *Gestão Saúde*. 2013;4(4):1469-82. Doi: <http://dx.doi.org/10.18673/gs.v4i4.22856>
18. Luna IT, Silva KL, Pinheiro PNC, Vieira NFC, Freitas MMC, Dias FLA. Ações educativas desenvolvidas por enfermeiros brasileiros com adolescentes vulneráveis às DST/Aids. *Cienc Enferm*. 2012 Apr;18(1):43-55. Doi: 10.4067/S0717-95532012000100005
19. Blackman E, Thurman N, Halliday D, Butler R, Francis D, Joseph M, et al. Multicenter study of human papillomavirus and the human papillomavirus vaccine: knowledge and attitudes among people of African descent. *Infect Dis Obstet Gynecol*. 2013 Aug; 2013:1-8. Doi: 10.1155/2013/428582.

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