

POST-BRACHYTHERAPY VAGINAL STENOSIS: OCCURRENCES AND REPERCUSSIONS IN WOMEN WITH GYNECOLOGICAL CANCER

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ABSTRACT

Objective: to identify the occurrence of vaginal stenosis after gynecologic brachytherapy and its repercussions from the women's perspective.

Method: a quantitative-qualitative study, with comparative design with longitudinal section, involving 23 women; and with interpretative design involving seven women, supported by the theoretical referential of culture. Both conducted in a radiotherapy oncology service in southern Brazil. Data collection was performed in 2019, being submitted to descriptive statistics and thematic analysis.

Results: it was found that 23 of the participants presented vaginal stenosis at some moment of the evaluation, with grade 1 being the most incident. Of the repercussions, suffering during sexual practice and lack of understanding by the partner were identified.

Conclusion: vaginal stenosis has repercussions beyond the woman's physiology, involving physical and emotional aspects. Thus, this research provides subsidies for decision making by nurses, health professionals, and managers to intervene in the repercussions of vaginal stenosis after gynecological radiotherapy.

DESCRIPTORS: Brachytherapy; Genital Neoplasms, Female; Constriction, Pathologic; Pain; Nursing.

ESTENOSIS DESPUÉS DE LA BRAQUITERAPIA VAGINAL: OCURRENCIAS Y REPERCUSIONES EN LAS MUJERES CON CÁNCER GINECOLÓGICO

RESUMEN:

Objetivo: identificar la ocurrencia de la estenosis vaginal post-braquiterapia ginecológica y sus repercusiones en la perspectiva de las mujeres. **Método:** estudio cuanti-cualitativo, con diseño comparativo con corte longitudinal, envolviendo a 23 mujeres; y con diseño interpretativo envolviendo a siete mujeres, sustentado en el referente teórico de la cultura. Ambos realizados en un servicio de oncología radioterápica del sur de Brasil. La recogida de datos se realizó en 2019, siendo sometida a estadística descriptiva y análisis temático. **Resultados:** se encontró que 23 de las participantes presentaron estenosis vaginal en algún momento de la evaluación, siendo el grado 1 el más incidente. De las repercusiones, se identificaron el sufrimiento durante la práctica sexual y la falta de comprensión por parte de la pareja. **Conclusión:** la estenosis vaginal tiene repercusiones más allá de la fisiología de la mujer, implicando aspectos físicos y emocionales. Por lo tanto, esta investigación aporta ayudas para la toma de decisiones por parte de las enfermeras, los profesionales sanitarios y los gestores para intervenir en las repercusiones de la estenosis vaginal post-braquiterapia ginecológica.

DESCRIPTORES: Braquiterapia; Neoplasias de los Genitales Femeninos; Constricción Patológica; Dolor; Enfermería.

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INTRODUCTION

Female cancer is a public health problem in the world and in Brazil, covering the breasts and genital organs⁽¹⁾. This study addresses gynecological cancers in women treated with brachytherapy, a modality of radiotherapy⁽²⁾. Among the gynecological cancers, cervical cancer stands out with 16,710 new cases (crude rate 16.35%), representing 29.7% of the total number of cancer cases in Brazil; followed by ovarian cancer with 6,650 new cases (6.18%), uterine body with 6,540 new cases (6.07%), vulva with 1,748 new cases (1.6%) and vagina with 543 new cases (0.51%)^(1,3).

Brachytherapy consists of direct dissipation of radiation, close to or in contact with the tumor, with the objective of eliminating and treating the cancer⁽⁴⁾. Such therapy has deleterious effects and vaginal stenosis is one of the most common⁽⁵⁾.

Despite being empirically and recurrently identified in clinical practice, the identification of standardized data on the incidence of stenosis remains a gap in scientific production, professional records and information systems⁽⁶⁾. Therefore, it is believed that its occurrence is underreported. Therefore, it is relevant to know the occurrence and experiences of women with vaginal stenosis undergoing brachytherapy, considering that they may have negative experiences with this pathological alteration. These elements can affect the social world, especially in marital relationships and female sexuality⁽⁷⁾.

Identifying the cases of vaginal stenosis and its repercussions contributes to the prevention of this occurrence, which is strongly influenced by the deficits of information and professional attention and by the low level of education of women⁽⁸⁾.

In view of this scenario, this study aimed to identify the occurrence of vaginal stenosis after gynecological radiation therapy and its repercussions from the perspective of women.

METHOD

To meet the complexity of the object under study, it was proposed to carry out the investigation with two methodological dimensions, one quantitative and the other qualitative. For the quantitative dimension, the comparative study with a longitudinal cut was used⁽⁹⁾. For the qualitative methodology, the interpretative study was used with the theoretical reference of culture and the concepts that support it to interpret wisely the studied phenomena⁽¹⁰⁾.

The research was conducted in a radiotherapy service reference in oncological treatment in southern Brazil. To sample the participants of the quantitative dimension, we considered the total of 36 women seen in 2018 in the service. According to the T-test for sample calculation, 33 participants would be needed (confidence interval of 95% and sample error rate of 5%).

For the selection of participants, the criteria established were to be over 18 years of age, to declare themselves in good clinical and cognitive conditions, to be a woman, and to be under brachytherapy treatment (in the complete modality or vaginal fundus) for gynecological cancer. Women who had already started treatment and those whose data in the medical records were inconsistent for the collection of quantitative data were excluded.

It is worth noting that in the year 2019, there was a suspension of brachytherapy treatments at two points in time (March to May and November to December) due to administrative issues, which impacted the number of women seen that year, totaling 23

women.

All patients seen that year were selected for inclusion in the quantitative dimension of this research. Among them, women who lived in Chapecó (Brazil) and region (radius of 60 km) were invited to participate in the qualitative data collection. There was such a geographical limitation due to lack of funding for the research team's displacement. It is pondered that for cultural studies, the interview should be conducted in a private and comfortable environment for the participant, and it is routinely indicated the home environment or the one suggested by the interviewee. Seven women participated in the qualitative dimension. It should be noted that there were no refusals.

The participants were approached at the reception desk of the service, being introduced to the objectives of the study, and expressed awareness and agreement to participate. Data collection occurred from January to February and from June to October 2019.

Three instruments were used for data production. Initially, a questionnaire was applied to obtain sociodemographic (age, marital status, education) and clinical (type of neoplasm, presence of metastasis, treatments performed, brachytherapy modality, number of treatment applications) variables. To obtain quantitative data, the Instrument for Assessment and Classification of Vaginal Stenosis in Brachytherapy (IACEVB)⁽¹¹⁻¹²⁾ was used. For qualitative data, an in-depth interview script was used, with the following questions: Has your life changed after vaginal stenosis? If yes, what has changed? Why has it changed? What is it like to live with vaginal stenosis? What are your plans? Other questions were asked when the need was identified by the researchers.

The IACEVB (Instrument for Assessment and Classification of Vaginal Stenosis in Brachytherapy) was used in two moments, at the last application of brachytherapy and at the return with clinical and nursing consultation (mean interval of 35 days between collections)⁽¹¹⁻¹²⁾. The interview to obtain these data took place in a room provided by the health service management, and each interview lasted 30 minutes.

In the qualitative dimension, the in-depth interview technique was used, and the participants opted for the interview in the home environment, considered by them to be safe and comfortable for the exposure of their subjectivities. The seven participants were interviewed after participating in the quantitative data collection, twice each, and the interview lasted from 30 to 40 minutes.

The data captured by the sociodemographic and clinical instrument and the IACEVB (Instrument for Assessment and Classification of Vaginal Stenosis in Brachytherapy) were validated by double entry in a database in Microsoft Excel® software and analyzed with the simple descriptive statistical technique. The evaluation and classification of the vaginal canal, proposed in IACEVB (Instrument for Assessment and Classification of Vaginal Stenosis in Brachytherapy), occurred according to the graduation presented in the instrument itself, which ranges from Grade 0 to Grade 5⁽¹¹⁻¹²⁾. The interviews were later transcribed by the researchers in Microsoft Word® software and analyzed according to the inductive thematic analysis⁽¹³⁾.

The quantitative results were presented in tables, and the qualitative results in the thematic unit "Sexual practice and its social role". These data were integrated at the time of the discussion.

The study was approved by the Ethics Committee for Research with Human Beings, opinion no. 3.593.385. The confidentiality of the participants' data was maintained, and their names were replaced by pseudonyms.

RESULTS

The age range in highlight was 30 to 39 years, with seven participants (30.43%), followed by 50 to 59 years, with six women (26.09%), with a minimum age of 29 years and a maximum of 80 years. Ten were married (43.48%), seven had incomplete elementary school education (30.43%), and seven had incomplete high school education (30.43%). The totality of the data is presented in Table 1.

Table 1 - Sociodemographic characterization of women undergoing brachytherapy. Chapecó, SC, Brazil, 2020

Variables	Frequency n (%)
Age group	
20 to 29 years old	2 (8,70)
30 to 39 years old	7 (30,43)
40 to 49 years old	3 (13,04)
50 to 59 years old	6 (26,09)
60 to 69 years old	3 (13,04)
70 to 79 years old	1 (4,35)
80 to 89 years old	1 (4,35)
Total	23 (100)
Marital Status	
Married	10 (43,48)
Divorced	4 (17,39)
Stable Union	4 (17,39)
Widow	2 (8,70)
Single	3 (13,04)
Total	23 (100)
Level of education	
Illiterate	1 (4,35)
Elementary school incomplete	7 (30,43)
Elementary school complete	3 (13,04)
High School Incomplete	1 (4,35)
High School Complete	7 (30,43)
Technical Education Complete	1 (4,35)
Higher Education Complete	3 (13,04)
Total	23 (100)

Source: Authors (2020)

Regarding the clinical data (Table 2), two types of neoplasms were identified: cervix, 18 cases (78.26%), and endometrium, five cases (21.74%). Among the participants, 20 (86.96%) had no distant metastasis. Regarding previous treatments, 20 women (44.44%)

were treated with teletherapy, and 16 with chemotherapy (35.56%). Hysterectomy was performed by nine of the participants (20%). Consequently, 14 (60.87%) underwent complete gynecological brachytherapy, performed mostly in four applications (91.30%).

Table 2 - Clinical characterization of women undergoing brachytherapy. Chapecó, SC, Brazil, 2020

Variables	Frequency n (%)
Type of gynecological cancer	
Cervix	18 (78,26)
Endometrium	5 (21,74)
Total	23 (100)
Distant metastasis	
Yes	3 (13,04)
No	20 (86,96)
Total	23 (100)
Treatments performed	
Teletherapy	20 (44,44)
Chemotherapy	16 (35,56)
Surgery (hysterectomy)	9 (20)
Total	45 (100)
Type of brachytherapy	
Complete	14 (60,86)
Vaginal depth	9 (39,13)
Total	23 (100)
Number of applications	
Two	1 (4,35)
Three	1 (4,35)
Four	21 (91,30)
Total	23 (100)

Source: Authors (2020)

Regarding the classification of vaginal stenosis, higher percentages were found in both evaluations in grade 1, 20 (86.96%) and 12 (52.17%), respectively, being significantly higher in the first evaluation. In the second evaluation, there was an increase of cases in grade 2, which went from two (8.7%) to eight (34.78%) of the participants, in a short period of evaluation between them, of 35 days on average.

Table 3 - Classification of vaginal stenosis. Chapecó, SC, Brazil, 2020

Variables	First evaluation n (%)	Second assessment n (%)
Classification of vaginal stenosis		
Grade 0	1 (4,35)	2 (8,70)
Grade 1	20 (86,96)	12 (52,17)
Grade 2	2 (8,70)	8 (34,78)
Grade 3	0 (0)	1 (4,35)
Grade 4	0 (0)	0 (0)
Grade 5	0 (0)	0 (0)

Source: Authors (2020)

Sexual practice and its social role

This category results from the inductive thematic analysis and groups the reports of the seven women interviewed in depth for the qualitative dimension. The communications reveal the absence of pleasure during sexual intercourse after brachytherapy, which can be painful and cause suffering. The speeches presented below were used because they best reveal the experiences shared by all the participants.

To have a to have sexual intercourse, in the name of Jesus, what a pain! It hurts from the very beginning. I would give an eight for the intensity of this pain! Right on top, it feels like it hits something, then it hurts [The participant reports feeling pain when the penis seems to touch the cervix during vaginal penetration]. During intercourse it still hurts. I continue sexual intercourse even though I feel pain. I do not have any more pleasure! ...] And the husband asks: 'Why are you like this? Why don't you feel pleasure? Why are you in pain?' And so, I feel guilty sometimes for something that is not my fault, because sometimes the man does not understand! ...] My husband complains, but I tell him it is not my fault, I am undergoing treatment. What can I do? Before I did not feel so much desire and pleasure, but now I do not feel anything, exactly nothing! I feel very embarrassed. It is not because I want to, I went through a big surgery, some strong applications [reference to the brachytherapy sessions], but I think that with time it will pass. I feel awfully bad, it is boring. (Eva)

I do not feel any pleasure. I have a lot of burning! A discomfort that is awfully bad! All this time that I was in treatment, I did not have sexual intercourse, my marriage changed a lot, the behavior inside the house changed! (Monica)

I have not had one for eight years. When I do the exercise, I feel a lot of pain. A grade eight pain, when it is entering the canal [references the insertion of the vaginal dilator, silicone in the shape of a penis, into the vaginal canal during the dilation exercise], because I can still stand it. I am afraid if one day I am with someone, how bad it will be, because with the prosthesis [vaginal dilator] it hurts me a lot, I want to see how it will be in the first sexual intercourse. It hurts too much when I insert it, before it hurt, then the nurse told me that I should have sexual intercourse, but it hurt too much when I had sexual intercourse with my ex-husband. We felt bad, because it hurt, it is not a good, comfortable thing. It was bad, the pain is bad, it is worrying. (Vera)

DISCUSSION

The most incident age range in this study reveals the involvement of younger women, like the most incident age range of women who are diagnosed with cervical cancer (most cases in this study), from 25 to 49 years. However, most women, when diagnosed with the disease, do not require brachytherapy, which is indicated when the disease is in more advanced stages⁽¹⁴⁾. It is also noteworthy that the results of the present study diverge from another study carried out in southern Brazil including women undergoing brachytherapy, which showed a minimum age of 44 years and a maximum of 77 years, with a mean age of 51 years and a more incident age range of 50-59 years. The same investigation showed that most women were married (72%), like the findings of this study⁽⁸⁾.

Researchers who studied the intervention of nurses in sexual rehabilitation after radiotherapy in gynecological cancer present that, among the participants, cervical cancer was the main neoplastic type (18.9%), followed by endometrial and vaginal cancer (respectively 1.5%)⁽¹⁵⁾. The condition described by them is close to the findings of the present investigation, since the interviewees were also diagnosed with cervical and endometrial cancer, differentiating only the cases of vaginal cancer.

In another study carried out with women submitted to brachytherapy as a treatment for cervical cancer, it is noteworthy that most cases occurred in the age group above 50 years (52.6%), which is the second most recurrent age in this investigation⁽¹⁶⁾. These women had vaginal stenosis (42.3%) of different degrees, and most of them had undergone three brachytherapy sessions (46.2%)⁽¹⁶⁾, differing from the findings presented here, with most participants undergoing four brachytherapy sessions (91.3%).

Gastrointestinal and genitourinary toxicities, the main complaints found in both evaluations, are like the findings of other studies, adding dyspareunia and decreased lubrication. In addition, they identified that most women had grade 1 and grade 2 vaginal stenosis, data that corroborate the findings of the present study⁽¹⁷⁻¹⁸⁾. In these studies, the classification of vaginal stenosis grades is not described; they only report grade 0 as the absence of stenosis and grades 1, 2 and 3 as the evolution of vaginal mucosa atrophy.

Other studies^(7,9) that expose grades from 0 to 5 for vaginal stenosis reinforce that, regardless of the degree identified, stenosis has a negative impact on the lives of women undergoing brachytherapy for the treatment of gynecological cancer. It is worth noting that the participants have a social life, that is, during the disease and treatment, they experience other situations that transcend the biological aspect of the disease.

According to the participants' reports, it is possible to interpret that women have a "sexual obligation" to fulfill with their partners, which occurs for cultural reasons. During the illness, these obligations continue, however, the participants realize that their body is no longer able to perform this role, which generates conflicts in the maintenance of their marital relationships.

Women, culturally in the social world, have a greater predisposition for self-care in health, because they are imposed the social role of procreating, nurturing, and always taking care of the family, being constantly placed as inferior to their spouses and having to obey their wills. In a study conducted in North America, which discusses the social role of women, it is observed that the female figure should always resemble as much as possible the religious figures, having to cultivate the preservation of virginity, as well as only have sex to satisfy the spouse⁽¹⁹⁾.

Culturally, the woman should exercise mainly the role of reproducer, thus, she should always be able to have sexual intercourse with penetration, in order to contemplate her socially imposed functions as a woman and wife, always satisfying her partner's desires, not necessarily obtaining pleasure. In this way, the woman is put in a position of submission, where she must always be healthy in order to play her social role. Thus, those who are sick or with sequelae are not considered complete or functional women⁽²⁰⁾.

The physical consequences of brachytherapy make women vulnerable in their marital

relationships and in the psychological dimension, since they tend to strengthen a social role of submission. Vulnerability is a relative concept, but some studies characterize socially vulnerable people as those stigmatized, excluded, in need of help, in danger or deviating from what is socially considered as normal⁽²¹⁻²²⁾.

When female vulnerability is emphasized, studies characterize vulnerable women as those who are at high risk of sexual abuse, are from groups deprived of emotional and psychological support, and are prone to suffer physical, psychological, sexual, and verbal violence within the family environment⁽²³⁻²⁴⁾; as well as experience uncomfortable sexual relationships for the maintenance of their social role of satisfying their partner, as in the experience of the women in this research.

The limitations of this study are related to the data collection process for both methodological dimensions. In the quantitative dimension, there were two moments of interruption in the collection, which directly impacted the number of women assessed. And for the qualitative dimension, the geographical distance was a limiting factor for the in-depth interviews since the limited financial resources of the researchers did not allow the displacement to other regions.

FINAL CONSIDERATIONS

For this investigation, the women with gynecological cancer who underwent brachytherapy already presented physiological changes in the first evaluation. In the second evaluation, it was possible to identify the worsening of signs and symptoms, such as the appearance of other degrees of vaginal stenosis. The body changes had a direct impact on the participants' social life, since a conflict arises between maintaining their marital relationship and accepting the physical limits imposed by the disease and treatments. In this scenario, there is a tendency to submit their desire to meet their partner's needs.

With this knowledge, the oncology nurse, working in brachytherapy, has ratified the evidence that the disease and treatments have repercussions beyond the physical dimension. Therefore, this research contributes to the academic field and to the practice of Nursing, as it provides subsidies for decision making by managers and health professionals based on evidence that demonstrates the repercussions of vaginal stenosis after gynecological brachytherapy.

REFERENCES

1. Instituto Nacional de Câncer (INCA). Coordenação de Prevenção e Vigilância. Estimativa 2020: incidência de câncer no Brasil. Rio de Janeiro: Instituto Nacional de Câncer; 2020.
2. Coelho ALPB, Pinheiro ALPB, Simpson SC, Zeituni C, Rostelato MECM. A radiação ionizante como forma de tratamento nas mulheres com câncer de colo de útero em Araguaína-TO, nos anos de 2000 a 2015. *Braz. J. of Develop* [Internet]. 2019 [accessed 10 mar 2020]; 5(10). Available from: <https://doi.org/10.34117/bjdv5n10-004>.
3. Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, et al. Bray F. Global cancer observatory: cancer today. [Internet]. Lyon, France: International Agency for Research on Cancer; 2018 [accessed 14 jul 2020]. Available from: <https://publications.iarc.fr/Databases/Iarc-Cancerbases/Cancer-Today-Powered-By-GLOBOCAN-2018--2018>.

4. Branco ISL, Lima FA, Antunes PCG, Yoriyaz H, Bellezzo M, Fonseca GP, et al. Desenvolvimento de software de cálculo de dose pontual em Braquiterapia baseado em simulações de Monte Carlo. Rev Bras Fis Med [Internet]. 2018 [accessed 10 mar 2018]; 12(1). Available from: <https://doi.org/10.29384/rbfm.2018.v12.n1.p2-9>.
5. Morris L, Do V, Chard J, Brand AH. Radiation-induced vaginal stenosis: current perspectives. Int J Womens Health [Internet]. 2017 [accessed 14 jul 2020]; 9. Available from: <https://doi.org/10.2147/IJWH.S106796>.
6. Hanlon A, Small Jr W, Strauss J, Lin LL, Hanisch L, Huang L, et al. Dilator use after vaginal brachytherapy for endometrial cancer: a randomized feasibility and adherence study. Cancer Nursing [Internet]. 2018 [accessed 14 jul 2020]; 41(3). Available from: <http://doi.org/10.1097/NCC.0000000000000500>.
7. Damast S, Jeffery DD, Son CH, Hasan Y, Carter J, Lindau ST, et al. Literature review of vaginal stenosis and dilator use in radiation oncology. Pract Radiat Oncol [Internet]. 2019 [accessed 12 mar 2020]; 9(6). Available from: <https://doi.org/10.1016/j.prro.2019.07.001>.
8. Duarte EB, Rosa LM da, Radünz V, Dias M, Silva RH da, Lunardi F, et al. Mulheres em braquiterapia pélvica: (des)conhecimento e atenção profissional como significado. Cogit. Enferm. [Internet]. 2020 [accessed 14 jul 2020]; 25. Available from: <http://dx.doi.org/10.5380/ce.v25i0.68406>.
9. Polit DF, Beck CT. Fundamentos de pesquisa em enfermagem: avaliação de evidências para a prática de enfermagem. 7. ed. Porto Alegre: Artmed; 2019.
10. Brown PJ. Understanding and applying medical anthropology. 3. ed. Nova York: Routledge; 2016.
11. Rosa LM da, Hammerschmidt KS de A, Radünz V, Ilha P, Tomasi AVR, Valcarenghi RV. Evaluation and classification of vaginal stenosis after brachytherapy. Texto contexto-enferm. [Internet]. 2016 [accessed 12 mar 2020]; 25(2). Available from: <https://doi.org/10.1590/0104-07072016003010014>.
12. Silva RDN da, Rosa LM da, Radünz V, Cesconetto D. Evaluation and classification of vaginal stenosis in brachytherapy: instrument content validation for nurses. Texto contexto-enferm. [Internet]. 2018 [accessed 12 mar 2020]; 27(2). Available from: <http://dx.doi.org/10.1590/0104-070720180005700016>.
13. Clarke V, Braun V. Using thematic analysis in counselling and psychotherapy research: a critical reflection. Couns Psychother Res [Internet]. 2018 [accessed 16 mar 2020]; 18(2). Available from: <https://doi.org/10.1002/capr.12165>.
14. Funston G, O'Flynn H, Ryan NAJ, Hamilton W, Crosbie EJ. Recognizing gynecological cancer in primary care: risk factors, red flags, and referrals. Advances in therapy. [Internet]. 2018 [accessed 16 jun 2019]; 35. Available from: <http://doi.org/10.1007/s12325-018-0683-3>.
15. Bakker RM, Mens JWM, Groot HE de, Tuijnman-Raasveld CC, Braat WCP, Hompus JGM, et al. A nurse-led sexual rehabilitation intervention after radiotherapy for gynecological cancer. Support Care in Cancer [Internet]. 2017 [accessed 20 abr 2020]; 25(3). Available from: <https://doi.org/10.1007/s00520-016-3453-2>.
16. Singh R, Chopra S, Engineer R, Paul S, Kannan S, Mohanty S, et al. Dose-volume correlation of cumulative vaginal doses and late toxicity after adjuvant external radiation and brachytherapy for cervical cancer. J Contemp Brachytherapy [Internet]. 2017 [accessed 20 abr 2020]; 16(4). Available from: <https://doi.org/10.1016/j.brachy.2017.03.008>.
17. Autorino R, Tagliaferri L, Campitelli M, Smaniotto D, Nardangeli A, Mattiucci GC, et al. EROS study: evaluation between high-dose-rate and low-dose-rate vaginal interventional radiotherapy (brachytherapy) in terms of overall survival and rate of stenosis. J Contemp Brachytherapy [Internet]. 2018 [accessed 12 abr 2020]; 10(4). Available from: <https://dx.doi.org/10.5114%2Fjcb.2018.77953>.
18. Kirchheiner K, Nout RA, Lindegaard JC, Haie-Meder C, Mahantshetty U, Segedin B, et al. Dose-effect relationship and risk factors for vaginal stenosis after definitive radio(chemo)therapy with image-guided

- brachytherapy for locally advanced cervical cancer in the EMBRACE study. *Radiother Oncol* [Internet]. 2016 [accessed 02 jul 2020]; 118(1). Available from: <https://doi.org/10.1016/j.radonc.2015.12.025>.
19. Diaz T, Bui NH. Subjective Well-Being in Mexican and Mexican American Women: the role of acculturation, ethnic identity, gender roles, and perceived social support. *J Happiness Stud* [Internet]. 2017 [accessed 02 jul 2020]; 18(2). Available from: <https://doi.org/10.1007/s10902-016-9741-1>.
20. Iżycki D, Woźniak K, Iżycka N. Consequences of gynecological cancer in patients and their partners from the sexual and psychological perspective. *Menopause Rev* [Internet]. 2016 [accessed 02 jul 2020]; 15(2). Available from: <https://doi.org/10.5114/pm.2016.61194>.
21. Kröner SM, Beedholm K. How discourses of social vulnerability can influence nurse–patient interactions: a foucauldian analysis. *Nursing inquiry* [Internet]. 2019 [accessed 02 jul 2020]; 26(4). Available from: <https://doi.org/10.1111/nin.12309>.
22. Carmo ME do, Guizardi FL. O conceito de vulnerabilidade e seus sentidos para as políticas públicas de saúde e assistência social. *Cad. Saúde Pública* [Internet]. 2018 [accessed 15 jul 2020]; 34(3). Available from: <https://doi.org/10.1590/0102-311x00101417>.
23. Alimohammadi N, Baghersad Z, Boroumandfar Z. Vulnerable women’s self-Care needs in knowledge, attitude and practice concerning sexually transmitted diseases. *Int J. Community Based Nurs Midwifery* [Internet]. 2016 [accessed 05 jul 2020]; 4(3). Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4926001>.
24. Boldt J. The concept of vulnerability in medical ethics and philosophy. *Philos Ethics Humanit Med* [Internet]. 2019 [accessed 05 jul 2020]; 14(6). Available from: <https://doi.org/10.1186/s13010-019-0075-6>.

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