

Experience of an online course on sexuality during pregnancy for residents



Teresa Cristina Souza Barroso Vieira^a, Mary Uchiyama Nakamura^a, Ivaldo da Silva^b,
Maria Regina Torloni^{a,c,*}, Meireluci Costa Ribeiro^a, Marco de Tubino Scanavino^d, Eduardo de Souza^a

^a Department of Obstetrics, São Paulo Federal University (UNIFESP), Rua Napoleão de Barros, 875, Vila Clamentino, CEP 04124-002 São Paulo, São Paulo, Brazil

^b Department of Gynecology, São Paulo Federal University (UNIFESP), São Paulo, Brazil

^c Department of Internal Medicine, São Paulo Federal University (UNIFESP), São Paulo, Brazil

^d Department and Institute of Psychiatry, São Paulo State University Medical School (FMUSP), São Paulo, Brazil

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ABSTRACT

Objective: Many obstetrics and gynecology (Ob/Gyn) residents report insufficient knowledge about female sexuality and this has a negative impact on their capacity to manage their patients. The aim of this study was to describe an online course about sexuality during pregnancy for Brazilian Ob/Gyn residents and evaluate their knowledge acquisition.

Methods: This longitudinal educational intervention study involved 219 Brazilian Ob/Gyn residents. The online course lasted 24 h (10 video lectures and discussion chats). Upon enrollment, the participants answered a questionnaire in regard to their training, attitudes and practices about sexuality during pregnancy. Participants' knowledge acquisition was assessed using a pre- and post-course test about sexuality during pregnancy. At the end of the course, participants were asked to evaluate their educational experience. Student's *t* and chi-square tests were used to analyze the pre- and post-course test scores. *P* values < 0.05 were considered statistically significant.

Results: A total of 143 Ob/Gyns (65.3% of those enrolled) completed the course. At baseline, most participants reported that they did not have any sexology classes as undergraduates (62.5%) or in their residency (52.1%), and that they lacked specific knowledge in this area to manage their patients. Mean test scores increased significantly at the end of the course: 4.4 (±1.6) versus 6.0 (±1.3) (out of a maximum score of 10), before and after the course, respectively (*p* < 0.0001). Most of the residents rated the overall quality of the course as "higher than expected".

Conclusion: An online course for Ob/Gyn residents was associated with a significant increase in knowledge about sexuality during pregnancy.

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Introduction

The World Health Organization (WHO) defines sexual health as "the experience of the ongoing process of physical, psychological and socio-cultural wellbeing related to sexuality. It is not the merely the absence of dysfunction, disease and/or infirmity" [1]. In 2000, the Pan American Health Organization (PAHO) and the World Association for Sexual Health (WAS) recommended that in order to promote sexual health, it was important to provide education, training and support to professionals working in sexual health related fields [2].

There are few sexual education programs specifically targeted at medical residents [3–5]. Yet, specific knowledge is needed in order to manage problems related to sexuality in different periods of life [6]. Pregnancy is a unique period in the lives of women and their partners when sexual dysfunction symptoms are very frequent [7–10]. Many studies report that pregnant women would like to receive more information about sexual issues during pregnancy from their health care providers [7,11–13]. However, obstetrics-gynecology (Ob/Gyn) residents often report that they lack knowledge in this area and feel insecure managing their patients' sexual complaints [14–17]. Residents would like to have more education in this area and have suggested that online modules could be useful to improve their knowledge and confidence to deal with sexual issues [14]. Based on a previous survey with Brazilian residents [16] we developed an online sexology course

* Corresponding author at: São Paulo Federal University, Rua Borges Lagoa, 564 cj 63, São Paulo 04038-000, Brazil.

E-mail address: [GINECOLOGIA@terra.com.br](mailto:ginecologia@terra.com.br) (M.R. Torloni).

for Ob/Gyn residents to complement their training. We hypothesized that this online course would improve the participants' knowledge about sexuality during pregnancy.

This article presents the experience of Ob/Gyn residents in a developing country taking an online course on sexuality during pregnancy. The main study objective was to evaluate the knowledge acquisition of the participants. Secondary objectives were the assessment of the training attitudes and practices of the participants on sexuality during pregnancy at the onset of the course and their satisfaction with this educational experience at the end of it.

Materials and methods

This was a longitudinal, educational intervention study conducted in the city of São Paulo, Brazil in 2014. The study protocol was approved by the Ethics Committee of São Paulo Federal University, Process No. 05889712.0.0000.5505 (Sep 21st 2012). All of the participants gave their online informed consent when registering for the course.

Any medical doctors enrolled in officially accredited Ob/Gyn residency programs were eligible to participate.

The course, lasting a total of 24 h, was divided into 10 online modules of 1 h and 40 min each (consisting of two 50 min lectures) and weekly discussion chats. A professional company was specifically hired to record the lectures at its studios and to create the course web platform. The course content included the history of sexuality, anatomy and physiology of human sexual response, male and female sexual dysfunctions during and after pregnancy, sexual history taking, and treatments of sexual dysfunctions (Table 1). The content of the online course was developed according to the recommendations of the Brazilian Federation of Obstetrics and Gynecologists. The lecturers were medical doctors (Ob/Gyn, urologists and psychiatrists), psychologists, social workers and physiotherapists specialized in sexology.

The principal investigator personally contacted each of the Ob/Gyn residency coordinators in the City of São Paulo, informed them about the course, and asked them to disseminate the information among their residents and to encourage them to enroll in the free online sexology course. Participants could enroll online, in a web-

site specifically created for this course during a period of seven months (March to September 2014).

Upon registration, the residents provided socio demographic and professional information (e.g. gender, age, year of residency and marital status) and filled an anonymous online questionnaire to assess their training about sexuality during medical school and residency, as well as their attitudes and practices related to sexuality during pregnancy. Before watching the first online video lecture, the residents had to answer the pre-course test (Test A) which contained 36 multiple-choice questions on human sexuality.

The weekly online modules were posted on a YouTube channel, private for only participants who were registered for the course, and could be assessed at any time (through individual student login) during a period of seven months (April 7 to September 30, 2014). Each Monday, a new video lecture was posted by the course organizers, along with topics for online discussion in the course chat room. The principal investigator checked the postings daily and was available throughout the course to give information, answer questions, and make comments. The last video was posted on June 9th 2015 as well as the post-course test (Test B) and a questionnaire to assess their satisfaction with the course.

After turning in the post-course test, the participants received an email with their scores in the pre- and post-course tests, the correct answers to both tests and a certificate of completion endorsed by São Paulo Federal University. The residency coordinators of each institution also received individual emails with the results of their residents' progress (pre- and post-course test scores) and their evaluation of the course. These data were de-identified so that the names of the individual residents did not appear on the resident coordinators' reports.

Evaluation of outcomes

To evaluate the participants' previous training, attitudes and practices regarding sexuality during pregnancy, an online questionnaire was used, based on a previous national survey involving Brazilian physicians [18].

Knowledge acquisition was evaluated using pre- (Test A) and post- (Test B) course tests about sexuality during pregnancy. Both tests consisted of 36 multiple-choice questions. Each lecturer was asked to provide 4 questions about their topic; the principal investigator used these questions to create the tests. The mean total score of each test was calculated by dividing the total number of questions (36) by 10 and multiplying the result by the number of correct questions. The total test score ranged from 0 to 10, with higher scores indicating higher knowledge about sexuality during pregnancy. Test B consisted of the same 36 questions as Test A, but presented in a different order.

The residents' satisfaction was assessed by using 20 multiple choice questions divided into five domains: (1) tangibles: physical facilities, equipment and appearance of personnel, (2) reliability: ability to perform the promised service dependably and accurately, (3) responsiveness: willingness to help the students and provide prompt service, (4) assurance: the teachers' knowledge and courtesy and their ability to inspire trust and confidence, and (5) empathy: caring, attention the teachers provide the students. The residents rated each domain using a five-point Likert scale ranging from "much less than expected" (1 point) to "much higher than expected" (5 points). We added the scores of each domain to obtain a total final score, ranging from a minimum of 20 to a maximum of 100. A twenty-first question was added which was a general quality question. All the questions were based on the SERVQUAL, a multiple-item scale that measures consumer perceptions of service quality [19]. It was adapted to measure educational services [20] and had good internal consistency (Cronbach's alpha 0.942).

Table 1
Program of the online sexology course for Ob/Gyn residents.

Module	Lecture A (50 min)	Lecture B (50 min)
Inaugural	Course presentation and course content	Importance of human sexuality for the Ob/Gyn specialist
1	History of sexuality Anatomy of human sexual response cycle	Anatomic changes in pregnancy and after childbirth (PC)
2	Physiology of male and female sexual response	Sexual response during pregnancy
3	Treatment of sexual disorders	Treatment of sexual disorders in PC Sexual history taking
4	Female sexual dysfunctions (FSD)	FSD symptoms in pregnancy
5	Male sexual dysfunctions	The impact of male sexual dysfunctions on pregnant woman's sexuality
6	Psychotherapy	Psychotherapy in PC
7	Pharmacotherapy	Pharmacotherapy in PC
8	The impact of gynecological surgeries on female sexuality	The impact of gynecological surgeries on female sexuality in pregnancy
9	Ethical issues Treatment of FSD	Sexual education groups with pregnant couples
10	Clinical case studies	Discussion of test questions and course evaluation Sexology in PC

Statistical aspects

Sample size was calculated by considering a before- and after-course learning evaluation, and by using Student's *t*-test. A test score standard deviation of approximately 3.15 and a 0.5 correlation between the results of the pre- and post-course tests and a 1 point increase in the final test was assumed. With $\alpha = 0.05$ and $\beta = 80\%$, a total of 80 participants would be needed to detect this difference.

The Student's *t* and chi-square tests were used to analyze the results of pre- and post-course test scores. Descriptive statistics were used for the participants' socio demographic and professional characteristics, their training, attitudes and practices, and their degree of satisfaction with the course. Cronbach's alpha was used to evaluate the internal consistency of the course satisfaction questionnaire. To indicate good internal consistency, a minimum of Cronbach's alpha of 0.7 had to be present.

InStat 3 software (Statistical Services Centre, University of Reading, Reading, UK) was used for statistical analyses.

Results

Sample

A total of 219 residents enrolled in the course: 162 (74%) were from five Ob/Gyn residency programs in the City of São Paulo,

while 57 (26%) were from other Ob/Gyn residency programs outside of the city who had heard about the course and spontaneously requested to enroll. Approximately 18% ($n = 40$) of the residents did not watch any of the modules and 16% ($n = 36$) dropped out of the course between the 3rd and the 10th modules. A total of 143 residents (65.3% of those who enrolled) completed all the course activities and took the final test (Fig. 1). The residents who dropped out of the course were significantly older and a larger proportion of them was in the last year of their residency than those who completed the course (Table 2). Most of the residents who completed the course were female (87.4%) and in the first two years of residency (51.7%) (Table 2).

Training, attitudes and practices

Over 60% of the enrolled participants reported having no previous training or classes about sexology during medical school, while 79% declared that they had received less than six hours of sexology training or no training during their residency up to that moment. About 51% did not feel confident giving answers about sexuality during pregnancy and nearly 84% of them attributed this difficulty to a lack of specific knowledge on the topic. Over 55% of the participants declared that they never or rarely took a sexual history of obstetric patients, while 41% did not know what to do when faced with a sexual complaint from these patients (Table 3).

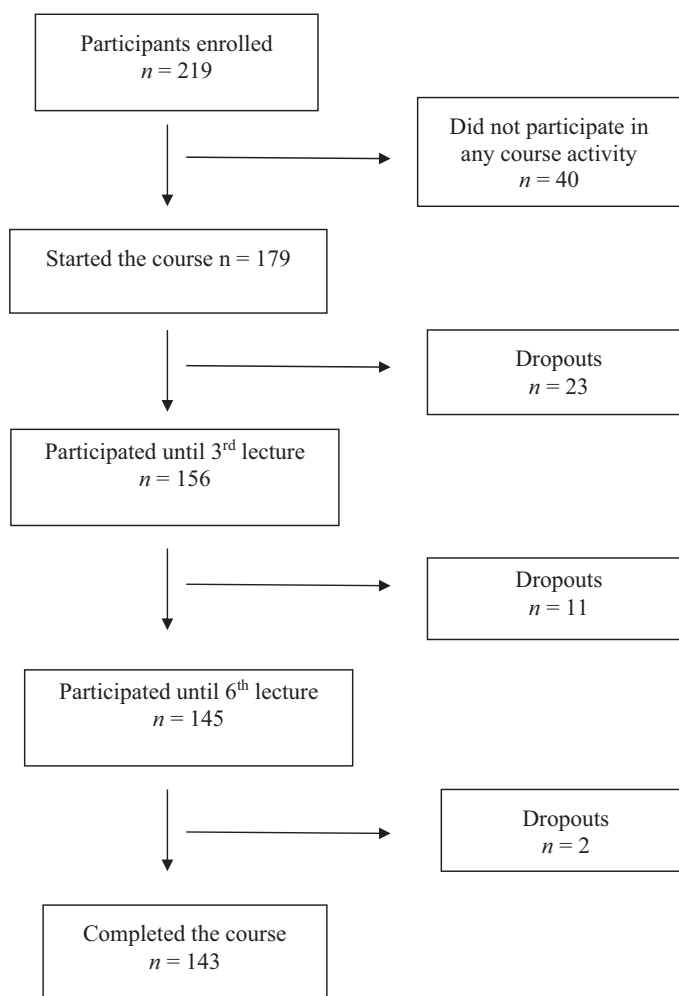


Fig. 1. Flow chart of course participants.

Table 2

Characteristics of 219 Brazilian Ob/Gyn residents enrolled in an online sexology course on sexuality during pregnancy.

	Registered (n = 219)	Dropouts (n = 76)	Completed the course (n = 143)	p value ^a
Age, years	28.0 ± 2.1	28.8 ± 2.5	27.9 ± 2.1	0.005 ^b
Gender				
Male	31 (14.2)	13 (17.1)	18 (12.6)	0.42 ^c
Female	188 (85.8)	63 (82.9)	125 (87.4)	
Residency year				
R1–R2	108 (49.3)	34 (44.7)	74 (51.7)	0.02 ^c
R3–R4	84 (38.4)	26 (34.2)	58 (40.6)	
R5–R6	27 (12.3)	16 (21.1)	11 (7.7)	

Values presented as mean ± standard deviation or N (%).

^a Comparison between characteristics of dropouts *versus* residents who completed the course.^b Student's *t* test.^c Chi-square test.**Table 3**

Training, attitudes and practices of 219 Brazilian Ob/Gyn residents enrolled in an online sexology course.

Question	n	%
1. Previous training or classes about sexuality during medical school		
None	137	62.6
≤6 h	62	28.3
>6–10 h	9	4.1
>10 h	11	5.0
2. Previous training or classes about sexuality during Ob/Gyn residency		
None	114	52.0
≤6 h	58	26.5
>6–10 h	19	8.7
>10 h	28	12.8
3. Do you feel confident when you listen to questions and give answers to the doubts that pregnant women have about sexual issues?		
No	100	50.8
Yes, in part	94	47.7
Yes, totally	3	1.5
4. If you have difficulty to deal with your obstetrics patients' sexual complaints, this difficulty is due to:		
Lack of specific technical knowledge in this area	165	83.7
Not enough time available during consultation	14	7.1
Lack of effective treatments for these problems	4	2.0
I don't have difficulties	7	3.6
Other	7	3.6
5. Do you routinely take a sexual history or inquire about sexual complaints of your obstetric patients, even when they don't spontaneously bring up questions or complaints?		
Never	34	17.2
Rarely	76	38.6
Sometimes	77	39.1
Frequently	7	3.6
Always	3	1.5
6. What is your usual procedure when a pregnant patient voices a sexual function complaint?		
I listen but I don't know what to do	81	41.1
I listen and then offer counseling or guidance	94	47.7
I minimize the problem and say "don't worry, it's nothing" or "things like that happen"	14	7.1
Other	8	4.1

Acquisition of knowledge

The mean pre-course test score of the 143 participants who concluded the course was 4.4 ± 1.5 (range 0.3–6.7), compared to 6.0 ± 1.3 (range 1.4–8.3) in the post-course test ($p < 0.0001$).

Satisfaction with the course

All 143 participants agreed with the statement that the general quality of the course was "equal", "higher" or "much higher" than

expected. Twenty-one participants (14.7%) stated that they were dissatisfied with the interactions among the participants in the chat room. Most of the participants (65.2%) graded the 20 items evaluated in the satisfaction questionnaire as "higher than expected" or "much higher than expected". Finally, 81.2% of the residents reported that they would recommend the course to a friend (Table 4).

Discussion

The majority of the 219 Ob/Gyn residents who participated in this study had little or no previous training about sexuality in medical school or in their residency program, yet the number of dropouts after enrollment was high (34.7%). This is a common finding in online courses in health sciences and may be related to difficulties in organizing their time and having the necessary self-discipline to participate in this type of activity [21].

The main reason reported by the residents for enrolling in the course was their need to complement their very limited training in human sexuality during medical school and in their residency program. Similarly, 97% of 154 Brazilian residents from different medical specialties (Ob/Gyn, psychiatry and internal medicine) reported that they wanted to have more sexual education activities to increase their knowledge on this topic [16]. The same lack of training about sexuality during medical school was reported by several other investigators from different countries [4,5,14,22–24]. Although there are many publications on the subject that could help to fill this gap, lectures or courses about sexuality are often important in giving young physicians the initial motivation to embark on the journey of self-education. As stated by one of the residents who participated in our course: "During the course I bought several books recommended as additional reading by the lecturers and I am now fascinated with the topic. I am even planning to do a post-graduate [course] in this area!".

The findings from this study indicate that this online course for Ob/Gyn residents in Brazil was effective in increasing their knowledge acquisition about sexuality during pregnancy. The improvement in the participants' knowledge was consistent with other similar educational interventions. Yolsal et al. [4] reported that 163 Turkish residents from different programs had a significant increase in test scores at the end of a three-day (17 h) presential course about reproductive and sexual health and that the residents felt more prepared, motivated and confident to manage sexual issues with their patients. Similarly, other studies [21,25] reported significant increases in participants' knowledge on other health topics upon completion of online courses.

Knowledge and skills are essential for physicians to feel confident and prepared to bring up and discuss sexuality and sexual issues with their patients. This is especially relevant for Ob/Gyns

Table 4

Level of satisfaction of 143 participants with an online course about sexuality during pregnancy.

Question ^a	Much lower than expected 1	Lower than expected 2	Within expectations 3	Higher than expected 4	Much higher than expected 5
<i>Tangibles</i>					
1. Clear and attractive homepages for student support	1 (0.7)	6 (4.2)	50 (35.0)	58 (40.6)	28 (19.6)
2. Technological resources offered in the course	1 (0.7)	9 (6.3)	77 (53.8)	38 (26.6)	18 (12.6)
3. Library collection compatible with the requirements of the course	1 (0.7)	4 (2.8)	57 (39.9)	44 (30.8)	37 (25.9)
<i>Reliability</i>					
4. Provision of the course as promised	0 (0.0)	2 (1.4)	47 (32.9)	53 (37.1)	41 (28.7)
5. Provision of the modules according to schedule	0 (0.0)	1 (0.7)	53 (37.1)	41 (28.7)	48 (33.6)
6. Usefulness of the course for professional qualification	0 (0.0)	4 (2.8)	38 (26.6)	64 (44.8)	37 (25.9)
7. Teachers' capacity to answer students' questions	2 (1.4)	2 (1.4)	58 (40.6)	47 (32.9)	34 (23.8)
8. <i>E-learning</i> as an educational resource	0 (0.0)	2 (1.4)	53 (37.1)	69 (48.3)	19 (13.3)
9. Professional behavior of the teachers	0 (0.0)	3 (2.1)	49 (34.3)	57 (39.9)	34 (23.8)
<i>Responsiveness</i>					
10. Solve students' doubts	3 (2.1)	3 (2.1)	57 (39.9)	53 (37.1)	27 (18.9)
11. Availability to attend students' needs	2 (1.4)	0 (0.0)	16 (11.2)	56 (39.2)	69 (48.3)
12. Capacity to keep students well informed about the course	0 (0.0)	2 (1.4)	30 (21.0)	74 (51.7)	37 (25.9)
<i>Assurance</i>					
13. Teachers knowledgeable about topics presented	0 (0.0)	0 (0.0)	33 (23.1)	58 (40.6)	52 (36.4)
14. Teachers inspire confidence	1 (0.7)	7 (4.9)	51 (35.7)	52 (36.4)	32 (22.4)
15. Teachers make students feel safe during the classes	0 (0.0)	4 (2.8)	62 (43.4)	50 (35.0)	27 (18.9)
<i>Empathy</i>					
16. Teachers that understand the students' need	1 (0.7)	1 (0.7)	50 (35.0)	63 (44.1)	28 (19.6)
17. Interaction between the participants	2 (1.4)	19 (13.3)	68 (47.6)	36 (25.2)	18 (12.6)
<i>Other</i>					
18. The course met my expectations	1 (0.7)	5 (3.5)	34 (23.8)	65 (45.5)	38 (26.6)
19. The course helped me save time and money	3 (2.1)	2 (1.4)	30 (21.0)	52 (36.4)	56 (39.2)
20. General quality of the course	0 (0.0)	0 (0.0)	10 (7.0)	80 (55.9)	53 (37.1)
	Certainly not 1	No 2	Not sure 3	Yes 4	Certainly yes 5
21. Would you recommend the course to a friend?	0 (0.0)	1 (0.7)	26 (18.2)	59 (41.3)	57 (39.9)

Values presented as N (%).

^a Questionnaire based on the SERVQUAL [19]. Total score range from 20 to 100, with higher scores indicating better quality of the course.

residents since counseling about sexuality in pregnancy may improve the sexual quality of life of couples during this period [9,26]. Nevertheless, a recent Brazilian study involving 207 professors from 110 medical schools found that over 55% of the respondents ($n = 113$) devoted only up to 6 h teaching sexual health topics and only 19% of them devoted 7–15 h to this subject in the medical school curriculum [22].

Although this model of an online course can increase the participants' theoretical knowledge about sexuality, it cannot substitute for the practical training that can only be acquired from supervised contact with patients during medical school or residency [5,27]. According to Parish and Clayton [5], few residency-training programs have proposed innovations in sexual health education, since the Robert Wood Johnson Medical School (RWJMS) was developed, in 1973. Only recently, a parallel pilot model [3] was developed incorporating the three elements described in RWJMS: (i) integration of cognitive and attitudinal learning; (ii) role of a multidisciplinary team in managing sexual issues; and (iii) clinical skills, including communication skills and sexual history taking. The program was a half-day intensive workshop and enrolled 46 residents of different specialties. Most of the respondents (92.6%, $n = 34$) in the post-test evaluation reported that the workshop was informative and they specifically praised the live interviews and panels.

The high level of satisfaction of most of our participants may in part be attributed to the multidisciplinary lecturers. The presentation of information by different specialists was an important factor reported by the residents to help them feel more confident in dealing with their patients' sexual questions [4]. The possibility of viewing video lectures when and where they wanted is also an

important advantage of online recorded courses [25]. Several of the study participants mentioned how this aspect was a strong point of the online course: "I live in Belém (north part of Brazil) and, for me, this was the only way to participate in this course. Excellent idea!" and "I loved the online format of the course and the possibility to access it from home!" However, a small number of participants were dissatisfied by the "participants' interaction" in the forums. This is a problem that has been previously reported by other investigators as one of the disadvantages of online courses [28]. In future editions of this course, we intend to establish rules of behavior for the students using the forums.

A limitation of this study was that the participants' knowledge was assessed some time after course completion. Yolsal et al. [4] sent a qualitative questionnaire four to six months after their residents had participated in a presential course on sexuality and approximately 60% of them responded. Most of them were satisfied with the experience and valued the newly acquired knowledge [4]. In future editions of this course, we intend to ask the participants to answer a new questionnaire four months after its end, to assess their knowledge retention. Upon enrollment, the students will be informed that those who do not complete this questionnaire will not receive their final score nor receive their course completion certificate.

This study did have several strong points. Firstly, it was the largest survey to date on the training, attitudes and practices of Ob/Gyn residents about sexuality during pregnancy. Secondly, to the best of the authors' knowledge, this course was also the first online educational intervention specifically focused on sexuality during pregnancy. However, the course was limited to residents from

Ob/Gyn programs in Brazil and therefore the findings cannot be generalized to other settings or countries. It is acknowledged that due to its online nature, the course did not allow the residents to fully explore their individual difficulties in dealing with their patients. An additional presencial module with individual or group tutoring would be needed to deal with these difficulties.

Conclusion

This course may serve as a model for other investigators interested in increasing the knowledge and skills of Ob/Gyn residents about sexuality during pregnancy. The course can be extended to include sexuality during the first postnatal year with a particular focus on sexuality during breastfeeding and postnatal sexual problems such as dyspareunia. This type of initiative can be especially useful in resource constrained settings and in places where presencial courses can be difficult due to geographic factors. More research is needed on how to best train Ob/Gyn residents in sexuality and how to best evaluate their knowledge acquisition and retention.

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