# O Ensinoaprendizagem de Gênero e Sexualidade em um Curso de Medicina no Brasil: Promovendo o Cuidado Integral em Saúde e os Direitos Humanos

Gender and Sexuality Teaching-Learning in a Medical School in Brazil: Promoting Comprehensive Health Care and Human Rights

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### PALAVRAS-CHAVE

- Gênero.
- Sexualidade.
- Educação Médica.
- Direitos Humanos.
- Saúde Pública.

### **RESUMO**

O objetivo deste artigo é apresentar a estruturação de uma unidade curricular para a discussão da temática de gênero e sexualidade, bem como os primeiros resultados da implantação dessa discussão em um curso médico de uma Universidade Federal brasileira. Para tanto, utilizou-se como eixo de elaboração do artigo o modelo Context / Input / Process / Product (CIPP) de avaliação de programas para apresentar a estruturação dessa unidade curricular e a heterogeneidade de percursos e caminhos para a sua efetivação (etapas 1, 2 e 3 do CIPP), bem como os primeiros resultados da implementação dessa discussão em um curso médico (etapa 4 do CIPP). Para a etapa 1 realizou-se uma análise documental do Projeto Pedagógico Curricular da escola médica em estudo; para a etapa 2 e 3 realizou-se uma narrativa descritiva do processo de planejamento e implementação da unidade curricular a partir do Arco de Paulino & Raimondi para o Ensino-Aprendizagem das Políticas Públicas em interface com o Cuidado para os cursos da Saúde; para a etapa 4 aplicou-se aos(às) discentes um questionário de preenchimento voluntário retrospectivo pré/pós intervenção, com questões fechadas, por meio de uma escala Likert de 7 pontos, a fim de avaliar a percepção discente sobre o aprimoramento de suas competências relacionadas às questões de gênero e sexualidade no cuidado em saúde a partir dessa experiência pedagógica. Nesta etapa, foi realizado uma analise estatística descritiva e inferencial, utilizando-se nesta do teste t de Student, do cálculo do tamanho do efeito (d de Cohen) e do modelo linear geral de delineamento misto a fim de determinar se há diferença significativa entre os gêneros antes e depois da intervenção de cada uma das perguntas. Os resultados mostram que a intervenção/unidade curricular desenvolvida, através do Arco de Paulino & Raimondi, foi estatisticamente significativa, com um efeito de impacto grande para o aprimoramento de competências, na perspectiva discente, relacionadas a essa temática. Sendo isso mais evidente no gênero feminino. Conclui-se que essa estratégia pedagógica se mostrou potente na educação das profissões da saúde para promover a integralidade no cuidado em relação às questões de gênero e sexualidade a partir do aprimora de competências relacionados às questões de gênero e sexualidade no cuidado em saúde, promovendo, assim, os princípios do SUS, da justiça social e dos direitos humanos.

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#### **KEY-WORDS**

- Gender.
- Sexuality.
- Medical Education.
- Human Rights.
- Public Health.

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#### **ABSTRACT**

The aim of this article is to present the structure of a curricular unit for the discussion of gender and sexuality, as well as the initial results of the implementation of this discussion in a medical course of a Brazilian Federal University. The Context / Input / Process / Product (CIPP) model for program evaluation was used to present the structure of this curricular unit, and the heterogeneity of the steps and paths taken for its realization (steps 1, 2 and 3 of the CIPP). It also presents the initial results of the implementation of this discussion on a medical course (Step 4 of the CIPP). In stage 1, a document analysis of the curriculum of the medical school under study was carried out; Stages 2 and 3 give a descriptive narrative of the process of planning and implementing the curricular unit, based on the Paulino & Raimondi Arch for the Teaching-Learning of Public Policies in interface with Care for Health Degrees Programs; In step 4, a retrospective pre-post questionnaire was filled out voluntarily, in the end of the intervention, to the students. It consisted of closed questions, using a 7-point Likert scale to assess the students' perceptions about the improvement of their competences in the areas of gender and sexuality in health care, following this pedagogical experience. This step also included a descriptive and inferential statistical analysis, using the student's t-test, the effect size calculation (Cohen's d), and the general linear model of mixed design, to determine whether there is significant difference between the genders before and after the intervention of each of the questions. The results show that the intervention/curricular unit developed, through the Paulino & Raimondi Arch, was statistically significant, having a significant impact on the improvement of competences, from the students' perspective, in relation to this theme. This impact was most evident in female gender. It is concluded that this pedagogical strategy proved to be powerful in education for the health professions, promoting integrality in health care regarding gender and sexuality issues, through the improvement of competences related to those issues, thereby promoting the principles of the Unified Health System (SUS – Sistema Único de Saúde), social justice, and human rights.

### INTRODUCTION

In 2006, the World Health Organization (WHO)<sup>1</sup> expressed the need to longitudinally integrate discussions about gender and sexuality in the curricula for courses in the health area, understanding these aspects of human diversity to be social determinants, as they are among the elements that perpetuate social inequities and injustices in health. In the same year, the Human Rights Council of the United Nations Organization (UNO) prepared the Yogyakarta Principles, published in 2007<sup>2</sup> and extended in 20173, that reiterated the need for this debate in teaching-learning spaces, as follows:

> "Ensure that education methods, curricula and resources serve to enhance understanding of and respect for diverse sexual orientations and gender identities, including the particular needs of students, their parents and family members related to these grounds."2 (p. 23)

WHO<sup>4</sup>, in 2011, and the Pan-American Health Organization (PAHO)<sup>5</sup>, in 2013, corroborated the need for reflections and policy proposals on equity, directed towards health teaching and care, regarding the disparities in access and use of health services by homosexual (both male and female), bisexual, transvestite and transsexual people.

In Brazil, since the 12th National Health Conference (NHC), held in 2003, the themes of gender and sexuality have been on the agenda of the Unified Health System (SUS - Sistema Único de Saúde), as a way for developing equality policies, with the objective of reducing inequalities and promoting health<sup>6</sup>. In 2007, at the 13th NHC, gender identity and sexual orientation were included in the analysis of the social determinants of health<sup>7</sup>. Reverberating with this, the social movement and researchers have stressed that these determinants put systematically determined groups of individuals at disadvantages in opportunities, which may include the analysis of health inequities<sup>8,9</sup>.

In alignment with these documents, the Brazilian Ministry of Education proposed the new National Guidelines (NG) for Undergraduate Medical Education<sup>10</sup>. Considering the need to improve medical curricula with regard to the issues of gender and sexuality, this new document included these social determinants in the process of comprehensive health care. On the basis of these documents and on the need to transform medical education, we implemented in the formal curriculum of a medical course at a Brazilian Federal University a mandatory curricular unit to discuss the issues of gender and sexuality in an integrated and extensive manner with the aim of going beyond discussing only anatomical, physiological and pathological issues. The aim of this article is to present the structure of this curricular unit together with the initials results from implementing this discussion in a medical course.

### **METHOD**

### **Ethical Aspects**

This research with quantitative methods, performed between 2016-2018, was approved by the Ethics Committee for Research with Human Beings (equivalent to the Review Boards of the United States) under number 1.823,295 and CAAE: 59415316.2.0000.5152.

# Sample

The 43 participants in the class that completed the intervention/curricular unit were invited to take part. The questionnaires were applied voluntarily and anonymously after prior explanation of their content and intention. Everyone agreeing to freely participate in the research signed a Free and Informed Consent Form.

### **Procedures**

The Context / Input / Process / Product (CIPP) model was chosen to present the structuring of this curricular unit, the heterogeneity of the paths and the paths for its implementation (steps 1, 2 and 3 of the CIPP), as well as the initial results from implementing this discussion in a medical course (step 4 of the CIPP). CIPP is an evaluation model based on complexity theory that enables multivariate analysis11, which considers the relationship of the elements of the program, where the context has a fundamental role in the effectiveness of the evaluation process<sup>12</sup>.

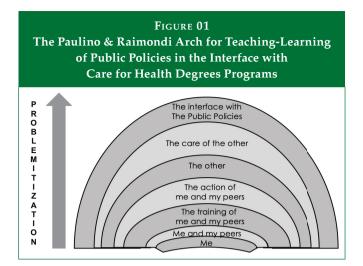
Given this, the presentation of the results and discussion has been divided into three sections. The first section defines the "Context, the first step in the CIPP model, from the document analysis of the specific Medical Course Pedagogical Project (CPP), the curriculum project. The terms "sexuality",

"gender identity" and "sexual minorities" were selected for this analysis, conducted using the "Descriptors in Health Sciences" virtual platform of the Virtual Health Library. Subsequently, the sections of the CPP where these terms appeared were analyzed to understand the institutional discourse on the theme<sup>13</sup>. So as to ensure that the subjects involved in this process are not identified, the educational institution will be referred to generically as the "Medical School", with the context and facts described so as not to risk identifying the subjects. The CPP was obtained from the website of this University, where it is a public document.

The second section describes the "Input" and the "Process", the second and third steps in the CIPP model. In this step, the contextualization of the experience was achieved using a narrative description of the teaching-learning process that used the pedagogical didactic strategy developed by the authors, which has been called the Paulino & Raimondi Arch for Teaching-Learning of Public Policies in the Interface with Care for Health Degrees Programs (Figure 01). The purpose of this Arch is fundamental in achieving the proposed objectives for this curricular component and, consequently, for achieving the results presented here. It is used to propose a path that sensitizes the students to the relevance and consideration of the theme, beginning with its realities and ending at the Public Policies about gender and sexuality, covering throughout the process how these markers are addressed by health care and training. All of the programming for the aforementioned curricular component presented here was constructed from it.

The creation of the Paulino & Raimondi Arch was a strategy to reconstruction and maintain the curricular unit, since the relevance of the theme was being questioned. The authors understood that it is impossible to work effectively with the theme without contextualizing its relevance in the daily experience of life, and the health training and care in which the students exist. Hence, before learning about gender and sexuality in Public Policies and in the care of others, they learned about these concepts in their own realities. The objective of this narrative is to provide a better comprehension of this sensitization process that is implied in the understanding of these initial results from implementing this discussion in a medical course. So as to enable this pedagogical activity to be replicated in other pedagogical contexts.

Note that proposal for the Paulino & Raimondi Arch arose from the questions from studying, reading, learning and acknowledging the theory-practice proposed by Paulo Freire<sup>14</sup> and of Problematization<sup>15</sup>. Considering that students and lecturers may initially be resistant to studying the Public Poli-



cies and the themes of Public Health, the Paulino & Raimondi Arch aims to systemize a pedagogical strategy for addressing these themes by sensitizing learners from the situations in their daily lives and correlating them with the learning needs and the development of expected competences for the specific curricular component. Rufino & Madeiro<sup>16</sup> state that student sensitization on themes such as sexuality was a central aspect of their pedagogical practices, especially with the use of audiovisual resources, which ensured the success of their teaching experience.

The first step in applying the Paulino & Raimondi Arch involves the "Me" viewpoint, because by starting from situations that mobilize and affect the existence of the learners, they are enabled to perceive and identify issues that need to be supported by studies, actions and Public Policies. In the second step the "me" viewpoint is expanded to include "my peers", where the learners are invited to identify, together with their peers, similarities and differences in the health-diseasecare process and training involving themselves and the other, thereby identifying how the Public Health content might be necessary for their health care as well as for their training and future professional action.

This step is followed by steps 3 and 4 of the Paulino & Raimondi Arch, where, respectively, the requirements for training the learners and their peers and professional action by them finds support in legislation, codes of ethics and professional conduct, and elements of the Public Health for learning and improvement. In step 5 it is hoped that the learners, sensitized to the theme in question by their own reality, become capable of transposing the viewpoint, directed so far towards themselves and their peers, to here consider the other. An "other" who experiences what they or their peers may also have experienced and, from this empathy, this affectation<sup>17</sup>, they manage to learn how and why the teaching-learning of the social determinants is important and how a Public Policy could be fundamental for overcoming health inequities. Here, it is expected that the learners perceive the relevance of empowerment from the knowledge of the Public Health, integrated with other knowledge, to practice health care in a transformative way. Their knowledge, then, comes into play, into action, with the aim of transforming the reality.

Hence, having perceived the other, the learners are capable of moving on to step 6 of the Paulino & Raimondi Arch, when they are able to question and act in relation to the care of the other. Finally, having opened their eyes to the theme, starting with themselves, the learners are invited to enter into step 7 of the Arch, which, we believe, traverses all of the others and it is to perceive the need to construct and improve Public Policies to respond to social requirements, for training and action on health, as well as the need for improvement and training to respond to these Policies. These must never be constrained and must always be in agreement with the collective requirements that arise from perceiving the social "me" viewpoint.

Note that progress through these steps does not flow in a linear and constrained manner. The learners may progress through these different steps in different ways, constructing their own paths, having in the professor a facilitator for their teaching-learning process, as this professional will provide theoretical-practical experience that is capable of being truly sensitizing for the study and transformative practice.

The third section of this article corresponds to the "Product", the fourth step in the CIPP model, which presents the analysis of the initial results from implementing this discussion in a medical course from the students' perception of the improvement of their competences related to the issues of gender and sexuality in health care. For this purpose, a voluntarily retrospective questionnaire was applied to the students' pre-post intervention<sup>18,19</sup>, with closed questions, using a seven-point Likert scale (Table 01). This questionnaire was applied at a single moment after the intervention/curricular unit.

# **Data Analysis**

The statistical analysis of the responses to this questionnaire was conducted using the programs SPSS® version 21.0 and G\*Power version 3.1.9.2<sup>20</sup>. To characterize the sample, the mean age of the participants and the percentage of students of each gender and sexual orientation were calculated. Descriptive and inferential statistics were applied to analyze the questionnaire responses. In relation to descriptive statistics,

### TABLE 01

# Description of the items presented in the questionnaire applied to the students about the competences (knowledge, attitudes and abilities) related to the curricular unit.

- 1. I understand that gender is addressed in the medical course.
- 2. I understand that sexuality is addressed in the medical course.
- 3. I understand that there are differences in the health care of men and women.
- 4. I understand that there are differences in the health care of the LGBT population.
- 5. I understand that there are differences in the labor market for male and female doctors.
- 6. I understand that addressing gender in health care has been neglected.
- 7. I understand that addressing sexuality in health care has been neglected.
- 8. I understand that gender is a social determinant of health.
- 9. I understand that sexuality is a social determinant of health.
- 10. I understand the concept of gender/gender identity.
- 11. I understand the concept of sexuality/sexual orientation.
- 12. I understand the applicability of the gender concept to health care.
- 13. I understand the applicability of the sexuality concept to health care.
- 14. I understand the difference between the man, woman, transsexual man and transsexual woman identities,
- 15. I understand the difference between the heterosexual, bisexual and homosexual orientations
- 16. I understand that a transsexual man can have heterosexual, bisexual or homosexual orientation.
- 17. I understand that a transsexual woman can have heterosexual, bisexual or homosexual orientation.
- 18. I address issues of gender and sexuality among young people and adolescents.
- 19. I address issues of gender and sexuality among adult men and women.
- 20. I address issues of gender and sexuality among elderly men and women.
- 21. I address issues of gender and sexuality among the LGBT population.
- 22. I address issues of gender when related to "general complaints".
- 23. I address issues of sexuality when related to "general complaints".
- 24. I address issues of gender when related to genitalia.
- 25. I address issues of sexuality when related to genitalia.
- 26. I address issues of gender when related to psychological issues.
- 27. I address issues of sexuality when related to psychological issues.
- 28. I address issues of gender when related to STI/HIV/AIDS.
- 29. I address issues of sexuality when related to STI/HIV/AIDS.
- 30. I understand the relevance of the aspects of gender in my academic training.
- 31. I understand the relevance of the aspects of sexuality in my academic training.
- 32. I understand that addressing gender and sexuality has a positive impact on health care.
- 33. I have considered the aspects of gender when I perform medical consultations.
- 34. I feel comfortable in considering the aspects of gender when I perform medical consultations.
- 35. I have considered the aspects of sexuality when I perform medical consultations.
- 36. I feel comfortable in considering the aspects of sexuality when I perform medical consultations.
- 37. I believe that for health care to be effective, gender differences must be considered.
- 38. I believe that for health care to be effective, sexuality differences must be considered.

Sources: Authors.

for each question, the mean and the 95% confidence interval for the mean, standard deviation, mode, maximum and minimum score, and score amplitude were calculated. With regard to inferential statistics, the Student's t-test was performed on paired samples to calculate whether the difference found between the means for each item, before and after the intervention, is statistically significant (p value). Subsequently, the effect size (Cohen's *d*) was calculated for the questions with significant difference before and after the intervention. Also, in the differential statistics, the generalized linear mixed model was used for the purpose of determining whether there is a significant difference between the genders (independent measures independent variable) before and after the intervention (repeated measures independent variable) for each of the questions (dependent variable). The significance level considered for all of the quantitative analyzes was 5%.

### RESULTS AND DISCUSSION

# Section 01 – The context of the project: developing an integrated proposal for teaching on gender and sexuality issues

The medical school in question, after many years of discussions driven by an external assessment by the Brazilian Ministry of Education (MEC), approved its new curriculum, called Course Pedagogical Project (CPP), that came into force with a model based on eight semesters, structured on four thematic axes, complemented with four semesters of clerkship.

The first thematic axis, here called the "theoretical-conceptual" axis, has the objective of promoting the competences necessary for the "practical-experiential" axis, starting from the study of the molecules to the tissues, organs and systems, and ending in the integration (called "comprehensive medicine") with the environment by means of health-disease-care processes. The "practice-experiential" axis is related to the practical experiences in the different teaching-learning scenarios with the purpose of promoting the critical-reflective and clinical reasoning of the future doctor. It is subdivided into one component called "individual" and another "collective", so as to understand these spheres in health learning and care, the former being related to the clinical-support actions and the latter to Public Health. The "sensory-reflective" axis aims to develop sensory and reflexive competences related to professional practice, covering the history of medicine, medical ethics, bioethics, human relationships, human values and human development. The fourth axis, "supplementary activities", aims to promote and recognize the extra-curricular and academic-scientific activities that medical students undertake.

The term "sexuality" appears four times in the aforementioned CPP, all being connected to the "theoretical-conceptual" axis, in the section "Integrated Medicine I", which aims to cover the aspects of semiology, sexuality, reproduction and life cycles, as well as Legal Medicine, through forensic sexology and forensic thanatology. The list for this component includes the term "sexuality" related to sexology and forensic sexuality, with the program divided into sexual relationships and genital relationships; the desire, the excitation and the orgasm; sexual inadequacies; and forensic sexology.

The terms "gender identity" and "sexual minorities" were not found. In the curricular component "sensory-reflexive VIII" of the sensory-reflexive axis there is a proposal to discuss women and medicine in the XIX century, as well as the right to life, disposal of embryos and abortion, which could indicate a possible discussion with regards to matters of the female gender.

In the clerkship the terms "sexuality", "gender identity" and "sexual minorities" were not identified. There is a discussion about antenatal, childbirth, puerperium and diseases related to female and male genitalia, without mention of reproductive health and other aspects related to gender and sexuality.

In this context, it is observed that Rufino, Madeiro & Girão<sup>21</sup> note in their study that the themes of gender and sexuality are "commented on" at isolated points in the disciplines of gynecology, psychiatry, medical psychology and urology, to address the themes of, for example, cancer, abortion STIs/ HIV/AIDS. That is, the issues of gender and sexuality are susceptible to study and professional improvement when related to the notion of "deviation" from standard codes<sup>22</sup>, a "risk behavior", and "sexual practices related to human reproduction/the male and female urogenital system". This is reinforced by the studies of Fallin-Bennett<sup>23</sup>, Eisenberg<sup>24</sup>, White<sup>25</sup> and Obedin-Maliver et al.26.

It was identified that in the seventh semester of the course there was a theoretical-practical discussion about the aspects of Male Health and Female Health and that the proposed teaching-learning process exclusively covered the biomedical aspects, related to the gynecology-obstetrics and genital-urinary organic systems. Accordingly, during the planning of the actions that will be developed in the course under study, which was passing through an intensive process of reviewing the CPP, it were assessed the possibilities for expanding the discussions of the seventh semester with the insertion of the debate of gender and sexuality in the training and medical practice in the curricular component "collective VII" of the practical-experience axis. Hence, this curricular proposal materialized the need for wider and more humane training<sup>10</sup>.

# Section 02 - From proposition to action: reflecting on the path and progressing along it

To consider the theme of the seventh semester of the medical course and sensitizing the students to the theme, the authors developed the pedagogical didactic strategy they called the Paulino & Raimondi Arch for Teaching-Learning of Public Policies in Interface with Care for Health Degrees Programs. Thereby, four thematic units were established for this curricular component of 60 hours. The first unit was called "gender in training and the medical profession", which had the intention of recognizing by the individuals and peers of the "me" viewpoint as man/woman/other inserted in training for a medical practice. For the purpose of thinking about medical training and considering the issue of gender in the most varied scenarios of study and professional activity. Therefore, the essential needs of learning were related to the concept of gender and its interface with the training and future medical practice, recognizing the importance of this social determinant in the individual and collective sphere.

In the second unit, "gender in the health professions", it was set out that the understanding of the interface of the gender social determinant in multi-professional health work would be an essential requirement for learning to delve further into the debate about future medical activities. These requirements laid the foundation for the third and fourth units, called, respectively, "gender and sexuality in health care" and "gender and sexuality in public policies". This unit would enable the students to advance along the Paulino & Raimondi Arch, entering into the problematization of the theme in relation to the "other", to the "care of the other" and the "interface with public policies". After this, the students would have as learning needs the understanding of groups such as the lesbian, gay, bisexual, transvestite and transsexual population (LGBT). To then recognize the importance of public policies directed towards these groups and which public policies exist, which should come to exist, and how they could be improved and applied in the reality of health care and training to ensure comprehensive health care.

With these four units, the competences that would be developed in this curricular component were established, using the guidance from the WHO<sup>27</sup>, the Association of American Medical Colleges<sup>28</sup> and the NG for Undergraduate Medical Education<sup>10</sup> on this theme. The knowledge related to the concepts of gender and sexuality would be developed, understanding its construction as a historic and cultural element. As well as the relationship between training and medical practice, multi-professional health work, health care, and the public policies and other documents/legislation related to these concepts/themes.

With relation to the abilities to be developed, the following were listed: to be able to identify and consider issues of gender and sexuality in training and the medical profession, in multi-professional health work and in health care, in the interface with the social determinant and the public policies. And, finally, the attitudes would be related to an ethical, humanistic and professional posture, with critical, reflexive and constructive sense in health training and activities, in the context of the issues of gender and sexuality.

In addition, the curricular unit was intended to develop competences related to listening, dialog, conflict management, leadership, establishing consensus, decision taking, appreciative feedback, assessment of/by peers, team work and constructive sharing of knowledge. That would be potentialized by the teaching-learning methods, so meeting the need to improve the competences related to working in teams highlighted by Frenk et al.<sup>29</sup> for the XXI century professional.

Having the understanding of these learning requirements and related competences, it was defined that the general objective of the curricular component would be understanding the crossover between comprehensive health care and the issues of Gender and Sexuality, and its interrelationship with Public Policies for Adolescents, Women, Men and the LGBT population.

In relation to the teaching-learning methods, Team Based Learning – TBL30 was primarily chosen. It is important to highlight that the use of TBL enabled the students to identify the "me" and "my peers" viewpoints, and "my training and that of my peers" and "my professional activities and that of my peers", which correspond to the first four steps of the Paulino & Raimondi Arch. As "individual and team readiness assurance test", it was decided to use the texts of Rohden<sup>31</sup> and Santos<sup>32</sup>, that discusses, respectively, the construction of the sexual difference in medicine and gender and the professional career in medicine.

For "team application 1", the focus was on medical training with the use of a simulated situation in which each student took part in constructing a curricular unit with the object of discussing the issues of health care related to gender and sexuality. For this purpose, two proposals were offered and had to be analyzed, using the concepts learned in the individual preparation and in the preparation undertaken. Note that these proposals were from the medical school under study, this being revealed only at the end of the activity, which enabled more critical and reflective analysis of the situational context that the students were experiencing. For "team application 2", the focus was on professional practice, and a surgeon was invited to share aspects experienced in her professional practice, followed by a report carried in local media where she said that she leaves home for work every day, while her husband stays in to care for the home and the child, enabling the students to question the expected gender roles in the family, social and work environments.

A role-play<sup>33</sup> was then conducted from eight simulated situations considering gender and sexuality, involving supporting different users, such as adolescents, adults and elderly; with different sexual orientations, such as bisexuals, homosexuals and heterosexuals; and with different gender identities such as transvestites, (transsexual) women, (transsexual) men. From this activity we identified with the students their learning needs, systemized in a domains of competences, which permitted greater sensitization of the importance of the theme on training and professional practice, advancing to steps 5 and 6 and of the Paulino & Raimondi Arch.

For modules three and four, Project-based learning was chosen, to give "the student the opportunity to learn to work in groups, face and resolve unexpected problems, share what had been learned while conducting the research and, when necessary, conduct practical experiments with colleagues"34 (p. 148).

For this method, each team of students selected a motivating question for learning, related to the debate of gender and sexuality, using an experience in a professional practice field. After this question, each team developed an intervention project in the service and/or in professional training so as to improve the comprehensive health care, as well as health training. As an example, a team for National Directives for Integrated Health Support for Adolescents and Young People had the motivating question of considering gender/sexuality with adolescents. It constructed a guideline with strategies for considering this theme in medical consultations, promoting comprehensive care with the family and the community. The presentation was made through role-play, in which the students could understand the problem in question and how to handle it in practical care. Another example is a team for the National Policy for LGBT Integrated Health, which had as a motivating question the health needs of the transvestite and transsexual population. It constructed a guideline, integrated with international and national literature on the theme. This product was presented to the National Reference Center in Comprehensive Health Care to the Trans Population, where some of the practical experiences of the curricular unit happened, and this is being incorporated to the practices of the Center. It was presented to the class with an interactive virtual game, in which the students could participate and learn about how to care for the trans population as doctors in the future.

During this planning and implementation of the projects, guidance was shared in small groups, following the steps of Problematization<sup>15</sup>, in constant dialog with the Public Policies, enabling steps 6 and 7 of the Paulino & Raimondi Arch to be implemented. At the end of the projects, each team shared its learning path with the rest of the class, systemizing the products in a Guideline that improves what is proposed in each Public Policy with regard to the aspects of gender and sexuality and an audiovisual production that uses creativity to enable the knowledge constructed to be shared with the most diverse actors involved in the health care.

### Section 3 - Analyzing the product

The questionnaires were applied and the questionnaire response rate obtained was 73.17%. The sample of students that responded to the questionnaire had an average age of 22.30 ± 2.34 years, with 50% identifying as women and the other 50% as men. With regard to sexual orientation, the sample is predominantly heterosexual (96.77%) (Table 01).

	Table 01						
Description of the sample respondents.							
Total		30 (73.17%)					
Mean age		$22.30 \pm 2.34$					
Gender							
	Women	15 (50%)					
	Men	15 (50%)					
	Transvestite	0 (0%)					
	Transsexual Woman	0 (0%)					
	Transsexual Man	0 (0%)					
	Other	0 (0%)					
Sexual orientation							
	Bisexual	0 (0%)					
	Homosexual	1 (3.33%)					
	Heterosexual	29 (96.77%)					
	Other	0 (0%)					
		`					

Sources: Authors.

With relation to the initial analysis of the responses to the items, it can be observed that the student perception was that the intervention enabled gains in the competences relating to all of the items of the questionnaire, since the time differences are statistically significant (Table 02). For these differences, large effect sizes were observed (d > 0.80), which means that this intervention could generate these results in more than 78.81% of the participants<sup>35</sup>. The largest effect sizes were observed in items 18, 19, 20, 21 and 22 which are related to consideration of gender and sexuality among young people and adolescents, men and women, and in the LGBT population, and consideration of gender when related to "general complaints". In items 29 (consideration of issues of sexuality when related to STI/HIV/AIDS), 33 and 34 (consideration of aspects of gender when I perform medical consultations), a large effect size was also observed (Table 02). In these items, it was observed that this can be expected in more than 90% of subjects.

Given these results in relation to student perception, it can be seen that comprehensive health care in relation to issues of gender and sexuality can be achieved, when learned using the Paulino & Raimondi Arch strategy. Since, according to Paulino<sup>36</sup> and Cecílio<sup>37</sup>, the comprehensive health care occurs when the needs of individuals are met by means of capturing/listening to individual expressions in the meeting between the

TABLE 02 Description of the analysis of the responses by students for each item of the questionnaire before and after the intervention, with calculation of the mean and standard deviation before and after the intervention, with details of the n value from the Student's t-test and Cohen's d value for analysis of the impact of the intervention

Questions	Before	Before the intervention		he intervention		Colour 1
	Mean	Standard -deviation	Mean	Standard -deviation	p value	Cohen's d
1.	4,07	1,741	6,14	1,382	<0,001	1,08
2.	3,93	1,698	6,00	1,486	<0,001	1,21
3.	5,43	1,345	6,53	,860	<0,001	0,92
4.	5,21	1,397	6,53	,860	<0,001	1,09
5.	5,18	1,722	6,30	1,418	<0,001	0,82
6.	5,11	1,663	6,27	1,437	<0,001	0,90
7.	5,29	1,301	6,40	1,102	<0,001	0,90
8.	5,04	1,374	6,43	1,006	<0,001	1,06
9.	4,79	1,449	6,40	1,003	<0,001	1,10
10.	4,61	1,750	6,47	,900	<0,001	1,11
11.	5,00	1,466	6,53	,860	<0,001	1,02
12.	4,68	1,389	6,47	,900	<0,001	1,25
13.	4,82	1,442	6,50	,900	<0,001	1,16
14.	4,64	1,682	6,57	,898	<0,001	1,22
15.	5 <i>,</i> 79	1,228	6,80	,484	<0,001	0,86
16.	4,93	1,698	6,83	,461	<0,001	1,15
17.	4,89	1,729	6,83	,461	<0,001	1,15
18.	3,21	1,315	5,57	1,382	<0,001	1,48
19.	3,61	1,423	5,67	1,605	<0,001	1,35
20.	3,14	1,208	5,27	1,660	<0,001	1,29
21.	3,75	1,531	5,83	1,392	<0,001	1,32
22.	3,64	1,393	5,67	1,422	<0,001	1,36
23.	3,64	1,545	5,67	1,398	<0,001	1,18
24.	4,04	1,503	5,83	1,341	<0,001	1,20
25.	4,18	1,588	5,93	1,230	<0,001	1,17
26.	4,21	1,343	5,93	1,230	<0,001	1,17
27.	4,11	1,257	5,90	1,155	<0,001	1,20
28.	4,57	1,230	5,97	1,273	<0,001	1,17
29.	4,71	1,329	6,17	1,177	<0,001	1,26
30.	5,18	1,442	6,53	,973	<0,001	1,04
31.	5,18	1,442	6,57	,971	<0,001	1,04
32.	5,50	1,319	6,57	,858	<0,001	0,88
33.	3,75	1,323	5,37	1,650	<0,001	1,35
34.	3,36	1,471	5,30	1,579	<0,001	1,27
35.	3,43	1,476	5,33	1,729	<0,001	1,20
36.	3,54	1,453	5,57	1,547	<0,001	1,16
37.	4,71	1,740	6,37	,999	<0,001	1,06
38.	4,86	1,671	6,50	,820	<0,001	1,05

Fonte: Autores.

health professional and the person. In addition, Baker & Beagan<sup>38</sup> stated that, to create spaces for the issues of gender and sexuality to arise, by means of the active consideration of these issues at the time of the consultation, health care is promoted in reiterating the importance of these components in the experience of the subjects. Hence, it is possible to deconstruct the status quo of the heteronormativity presumption in the practice of health care, with produces countless episodes of silencing36, negligence and violence due to a "selective visibility" related to "compulsory heterosexuality"39.

In addition, in using the generalized linear model it can be seen that items 7 (I understand that there is negligence in the consideration of sexuality in health care), 8 (I understand that gender is a social determinant of health), 24 (I address is-

TABLE 03 Description of the generalized mixed linear model between the genders (independent measures independent variable) before and after the intervention (repeated measures independent variable) for each of the questions (dependent variable).

	Female gender Male gender						
Questions	Mean BI* (SD)***	Mean AI** (SD)***	Mean BI* (SD)***	Mean AI** (SD)***	p-value (time)	p-value (gender)	p-value (time*gender)
1.	3.79 (1.58)	6.40 (1.30)	4.36 (1.91)	5.86 (1.46)	<0.001	0.964	0.020
2.	3.50 (1.51)	6.33 (1.35)	4.36 (1.82)	5.67 (1.59)	<0.001	0.880	0.005
3.	5.21 (1.37)	6.73 (0.46)	5.64 (1.34)	6.33 (1.11)	< 0.001	0.753	0.188
4.	4.93 (1.59)	6.80 (0.41)	5.50 (1.16)	6.27 (1.10)	<0.001	0.763	0.054
5.	5.57 (1.65)	6.73 (0.59)	4.79 (1.76)	5.87 (1.85)	< 0.001	0.157	0.889
6.	5.36 (1.74)	6.73 (1.03)	4.86 (1.61)	5.80 (1.66)	<0.001	0.213	0.480
7.	5.71 (1.44)	6.93 (0.26)	4.86 (1.03)	5.87 (1.36)	<0.001	0.009	1.000
8.	5.36 (1.45)	6.80 (0.41)	4.71 (1.27)	6.07 (1.28)	<0.001	0.090	0.894
9.	5.07 (1.64)	6.73 (0.46)	4.50 (1.23)	6.07 (1.28)	<0.001	0.138	0.904
10.	4.00 (1.96)	6.67 (0.62)	5.21 (1.31)	6.27 (1.10)	<0.001	0.211	0.027
11.	4.93 (1.64)	6.73 (0.46)	5.07 (1.33)	6.33 (1.11)	<0.001	0.914	0.558
12.	4.57 (1.65)	6.67 (0.49)	4.79 (1.12)	6.27 (1.16)	<0.001	1.000	0.455
13.	4.71 (1.64)	6.73 (0.46)	4.93 (1.27)	6.27 (1.16)	<0.001	0.917	0.390
14.	4.29 (1.94)	6.60 (0.63)	5.00 (1.36)	6.53 (1.12)	< 0.001	0.401	0.240
15.	5.57 (1.09)	6.80 (0.41)	6.00 (1.36)	6.80 (0.56)	<0.001	0.362	0.442
16.	4.71 (1.82)	6.87 (0.35)	5.14 (1.61)	6.80 (0.56)	< 0.001	0.546	0.509
17.	4.64 (1.87)	6.87 (0.35)	5.14 (1.61)	6.80 (0.56)	<0.001	0.487	0.450
18.	3.43 (1.16)	6.00 (0.85)	3.00 (1.47)	5.13 (1.69)	<0.001	0.091	0.352
19.	3.79 (1.25)	6.07 (1.16)	3.43 (1.60)	5.27 (1.90)	<0.001	0.210	0.335
20.	3.36 (0.93)	5.53 (1.30)	2.93 (1.44)	5.00 (1.96)	< 0.001	0.259	0.737
21.	3.86 (1.41)	6.00 (1.13)	3.64 (1.69)	5.67 (1.63)	<0.001	0.507	0.729
22.	4.14 (1.03)	6.07 (1.10)	3.14 (1.56)	5.27 (1.62)	<0.001	0.051	0.704
23.	3.93 (1.33)	6.07 (1.10)	3.36 (1.74)	5.27 (1.58)	<0.001	0.147	0.741
24.	4.50 (1.51)	6.67 (0.49)	3.57 (1.40)	5.00 (1.41)	<0.001	0.003	0.157
25.	4.64 (1.65)	6.67 (0.49)	3.71 (1.44)	5.20 (1.32)	<0.001	0.006	0.310
26.	4.29 (1.54)	6.33 (1.11)	4.14 (1.17)	5.53 (1.25)	<0.001	0.264	0.245
27.	4.21 (1.48)	6.33 (1.11)	4.00 (1.04)	5.47 (1.06)	<0.001	0.150	0.250
28.	4.86 (1.23)	6.60 (0.51)	4.29 (1.20)	5.33 (1.50)	<0.001	0.026	0.105
29.	4.71 (1.20)	6.60 (0.51)	4.71 (1.49)	5.73 (1.49)	<0.001	0.328	0.044
30.	5.29 (1.38)	6.93 (0.26)	5.07 (1.54)	6.13 (1.25)	<0.001	0.252	0.419
31.	5.29 (1.38)	6.93 (0.26)	5.07 (1.54)	6.20 (1.27)	<0.001	0.289	0.510
32.	5.57 (1.45)	6.87 (0.35)	5.43 (1.22)	6.27 (1.10)	<0.001	0.382	0.570
33.	4.07 (1.21)	5.93 (1.10)	3.43 (1.40)	4.80 (1.94)	<0.001	0.068	0.159
34.	3.50 (1.56)	5.73 (0.80)	3.21 (1.42)	4.87 (2.03)	<0.001	0.216	0.218
35.	3.14 (1.46)	5.67 (1.35)	3.71 (1.49)	5.00 (2.04)	<0.001	0.898	0.032
36.	3.29 (1.59)	6.07 (1.16)	3.79 (1.31)	5.07 (1.75)	<0.001	0.652	0.031
37.	4.57 (1.91)	6.73 (0.46)	4.86 (1.61)	6.00 (1.25)	<0.001	0.744	0.168
38.	4.64 (1.87)	6.80 (0.41)	5.07 (1.49)	6.20 (1.01)	<0.001	1.000	0.168

 $<sup>*</sup>BI = Before \ the \ Intervention; **AI = After \ the \ Intervention; ***SD = Standard \ Deviation.$ Source: Authors.

sues of gender when related to genitalia), 25 (I address issues of sexuality when related to genitalia) and 28 (I address issue of gender when related to STI/HIV/AIDS), the female gender presented a more accurate perception than the male ( $p \le 0.026$ ) (Table 03). In items 1 (I understand that gender is addressed in the medical course), 2 (I understand that sexuality is addressed in the medical course), 10 (I understand the concept of gender/ gender identity), 29 (I address issues of sexuality when related to STI/HIV/AIDS), 35 (I have considered the aspects of sexuality when I perform medical consultations) and 36 (I feel comfortable in considering the aspects of sexuality when I perform medical consultations), it is seen that there is a greater difference between before and after the intervention with the female gender in comparison with the male ( $p \le 0.044$ ), providing evidence that the perception gain after the intervention occurs principally in the perception of the female gender (Table 03).

Qualitative analysis of the process and the pedagogical intervention product may be necessary to improve our understanding of this theme. Seeing that this study has a transverse cross-section, prospective follow-up of the students who experienced this intervention/curricular unit is also considered necessary for qualitative and quantitative understanding of the long-term impact. In addition, new interventions using the Paulino & Raimondi Arch in other curricular components and its retrospective and prospective analysis, are necessary to expand its use and ensure its applicability in education in Health.

## CONCLUSION

The present article describes an innovative and successful educational experience on a medical school in Brazil from the formal insertion of the gender and sexuality debate in medical training through the problematization of social determinants for comprehensive health care. With this text, we present the structuring of this curricular unit as well as the initial results from implementing this discussion in a medical course.

By means of the theory of adult learning<sup>40</sup> we were able to understand "what is teaching/learning", "when to teach/ learn" and "how to teach/learn", meeting the recommendations of the United Nations<sup>41</sup> for promoting human diversity and reduction of violence in educational scenarios in relation to issues of gender and sexuality.

It is noteworthy that the intervention/curricular unit developed, using the Paulino & Raimondi Arch, presented results that provide evidence of its potential in education of health professionals to promote comprehensive care. In relation to the issues of gender and sexuality, the present education proposal was shown to be very significant, from the

perspective of the student, principally of the female gender, in improving competences related to consideration of: gender and sexuality among young people and adolescents, men and women, and in the LGBT population; gender when related to "general complaints"; issues of sexuality when related to STI/ HIV/AIDS; and the aspects of gender in the medical consultations performed by the students. This was achieved in more than 78% of the subjects, when used for the pedagogical proposal presented here, due to its high effect size.

All of this process ensures learning for all of the actors involved in the curriculum improvement process based on the SUS principles, of social justice and human rights, expanding the understanding of the human experience and integrating these aspects in the practice of care.

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### **CONTRIBUTION FROM THE AUTHORS**

Gustavo Antonio Raimondi and Danilo Borges Paulino were responsible for the idealization and design of the project, actively participating in the other stages of the preparation of this manuscript. Wallisen Tadashi Hattori participated in the design, data analysis, writing and revision of the manuscript. Vilson Limirio Júnior and Vivian Martins de Oliveira Lima e Silva participated in the collection and analysis of the data, as well as the writing and revision of the manuscript. Sergio Zaidhaft participated in the writing and revision of the manuscript.

### **CONFLICT OF INTEREST**

None.

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