

DISCOURSES OF HEALTH COURSES ON GENDER AND BIOTECHNOLOGIES IN THE CONTEXT OF TRAINING

DISCURSOS DOS CURSOS DA ÁREA DA SAÚDE SOBRE GÊNERO E BIOTECNOLOGIAS NO ÂMBITO DA FORMAÇÃO

DISCURSOS DE LOS CURSOS DE SALUD SOBRE GÉNERO Y BIOTECNOLOGÍAS EN EL CONTEXTO DE LA FORMACIÓN

 Vera Elenei da Costa Somavilla¹

 Luiza Pessi Rosseti¹

 Laura Rodolpho Petry²

 Analídia Rodolpho Petry¹

 Guilherme Mocelin³

¹Universidade de Santa Cruz do Sul - UNISC, Departamento de Ciências da Saúde. Santa Cruz do Sul, RS - Brazil.

²Universidade do Vale do Rio dos Sinos - UNISINOS. Curso de medicina. São Leopoldo, RS - Brazil.

³UNISC, Programa de Pós-Graduação - Mestrado e Doutorado - em Promoção da Saúde. Santa da Cruz do Sul, RS - Brazil.

Corresponding Author: Guilherme Mocelin
E-mail: mocelinguilherme@gmail.com

Authors' contributions:

Conceptualization: Luiza P. Rosseti, Laura R. Petry, Analídia R. Petry, Guilherme Mocelin; **Data Collection:** Vera E. C. Somavilla, Luiza P. Rosseti, Laura R. Petry, Analídia R. Petry, Guilherme Mocelin; **Methodology:** Vera E. C. Somavilla, Luiza P. Rosseti, Laura R. Petry, Analídia R. Petry, Guilherme Mocelin; **Project Management:** Vera E. C. Somavilla, Analídia R. Petry; **Investigation:** Vera E. C. Somavilla, Analídia R. Petry, Guilherme Mocelin; **Resources Management:** Analídia R. Petry; **Supervision:** Vera E. C. Somavilla, Analídia R. Petry, Guilherme Mocelin; **Validation:** Vera E. C. Somavilla; **Visualization:** Vera E. C. Somavilla. **Writing – Original Draft Preparation:** Vera E. C. Somavilla, Luiza P. Rosseti, Laura R. Petry, Analídia R. Petry, Guilherme Mocelin; **Writing – Review and Editing:** Luiza P. Rosseti, Laura R. Petry, Analídia R. Petry, Guilherme Mocelin.

Funding: No funding.

Submitted on: 04/12/2021

Approved on: 01/17/2022

Responsible Editors:

 Luciana Regina Ferreira da Mata

 Janaina Soares

ABSTRACT

Objective: to investigate the discourses on gender and biotechnologies within the training of health courses. **Methodology:** this is a qualitative, exploratory, and descriptive study that is based on a larger study - a research project - developed by the Studies and Research Group in Health (GEPS), entitled "Gender and Biotechnologies: Interfaces between discourses and institutions in the training of students from health courses." The research took place between March and October 2019 and was carried out through semi-structured interviews with Brazilian and Spanish health students, audio-recorded, and transcribed for Discourse Analysis. **Results and Discussion:** the findings indicate that Gender and Biotechnology are themes that do not subsidize the discussions of the training of future health professionals, showing an understanding of gender centered on a binary norm, with no space for other identity possibilities besides heterosexuality being seen as a standard of behavior to be followed. A certain complexity is perceived in the formulation of the students' speeches regarding the aspects in which gender and biotechnologies escape from the relationship between the biological body and the technological use for these physical and mental frameworks. **Final Considerations:** the discussions about gender and biotechnologies in the studied universities have been carried out in an isolated way, making it necessary to restructure their curricula so that the themes presented can be contemplated to effectively compose the equitable and integral formation of professionals.

Keywords: Gender Identity; Biotechnology; Education.

RESUMO

Objetivo: investigar os discursos sobre gênero e biotecnologias no âmbito da formação dos cursos da área da saúde. **Metodologia:** trata-se de uma pesquisa qualitativa exploratória descritiva que está alicerçada em um estudo maior — projeto de pesquisa — desenvolvido pelo Grupo de Estudos e Pesquisas em Saúde (GEPS), intitulado "Gênero e Biotecnologias: Interfaces entre discursos e instituições na formação de alunos dos cursos da área da saúde". A pesquisa ocorreu entre os meses de março e outubro de 2019, sendo realizada por meio de entrevistas semiestruturadas com estudantes brasileiros e espanhóis da área da saúde, gravadas em áudio e transcritas para Análise do Discurso. **Resultados e Discussão:** os achados indicam que Gênero e Biotecnologia são temáticas que não subsidiam as discussões da formação de futuros profissionais da saúde, mostrando um entendimento de gênero centrado numa norma binária, não havendo espaço para outras possibilidades identitárias, além de a heterossexualidade ser vista como padrão de comportamento a ser seguido. Percebe-se uma certa complexidade na formulação dos discursos dos estudantes no que se refere aos aspectos em que gênero e biotecnologias escapam da relação entre corpo biológico e utilização tecnológica para esses enquadramentos físicos e mentais. **Considerações Finais:** as discussões sobre gênero e biotecnologias nas universidades estudadas têm sido realizadas de forma isolada, sendo necessária uma reestruturação de seus currículos de modo que os temas apresentados passem a ser contemplados para que, efetivamente, componham a formação equitativa e integral de profissionais.

Palavras-chave: Identidade de Gênero; Biotecnologia; Educação.

RESUMEN

Objetivo: investigar los discursos sobre género y biotecnologías en el contexto de la formación de los cursos de salud. **Metodología:** se trata de una investigación exploratoria descriptiva cualitativa que se basa en un estudio más amplio - proyecto de investigación - desarrollado por el Grupo de Estudios e Investigación en Salud (GEPS), titulado: "Género y Biotecnologías: Interfaces entre discursos e instituciones en la formación de estudiantes de cursos de salud", que se produjo entre los meses de marzo y octubre de 2019 a través de entrevistas semiestructuradas, con estudiantes de salud brasileños y españoles, grabadas en audio y transcritas para el Análisis del Discurso. **Resultados y discusión:** los hallazgos indican que el Género y la Biotecnología son temas que no subsidian las discusiones de la formación de los futuros profesionales de la salud, mostrando una comprensión del género centrada en una norma binaria en la que no hay espacio para otras posibilidades de identidad y la heterossexualidad como norma de comportamiento a seguir. Se percibe cierta complejidad en la formulación de los discursos de los estudiantes, en cuanto a los aspectos en los que el género y las biotecnologías escapan de la relación entre el cuerpo biológico y el uso de la tecnología para estos marcos físicos y mentales. **Consideraciones finales:** las discusiones sobre género y biotecnologías en las universidades brasileñas y españolas se han llevado a cabo de forma aislada, y es necesario reestructurar estos planes de estudio para que los temas presentados puedan ser contemplados en los planes de estudio para que efectivamente compongan la formación equitativa e integral de los profesionales.

Palabras clave: Identidad de Género; Biotecnología; Educación.

How to cite this article:

Somavilla VEC, Rosseti LP, Petry RL, Petry AR, Mocelin G. Discourses of health courses on gender and biotechnologies in the context of training. REME - Rev Min Enferm. 2022[cited _____];26:e-1434. Available from: _____ DOI: 10.35699/2316-9389.2022.38478

INTRODUCTION

Biotechnologies and gender discourses have raised multiple conceptions about the processes of body production in the fields of health care and assistance.¹ These conceptions influence the creation of standards that allow the choice of aesthetic, morphological, and physiological models in which it is feasible to eliminate unwanted physical attributes. Moreover, early on, they make it possible to avoid getting sick, responding, in some way, to the heteronormative demand of society. In this way, normativity about the body comes into effect, linking appearance to the needs demanded by the social environment, making life a precarious and vulnerable object.² These discussions constitute arguments and justifications for research such as the one that originated this manuscript.

Regarding the strategies of governing the bodies according to Foucault's study,³ the insertion of the human being in the center of the State's interventions and its institutions is an effect of the strategies of biopolitics or even an indication of the process of governmentalization of life. Through the norm, biopolitics invests in bodies. The normalizing power excludes and includes people and social, ethnic, and cultural groups, adjusting their bodies to the desired processes.⁴

Such biotechnological undertakings highlight the subjects' involvement with care and management of the self through the individual's accountability, which must be followed for the care of the future, in which the capacities of the subjects reach conditions to manage their vitality.⁵ When looking at the multiple behaviors adopted during health care, it is possible to raise some questions regarding the exercise of tensioning the place of unquestionable truth that has been given to biotechnologies and gender discourses. Oliveira and Romanini⁶ described the effects of biotechnologies on life and pointed out that, historically, they are used in health services and drive paradigm changes in the production of knowledge and cultural transformations as they promise improvements in living and health conditions. From a certain point of view and in certain contexts, technological advances interfere with how health care is incorporated and operated.

Social relations — which involve health professionals and users of health services — are inserted in a context marked by gender discourses and consuming biotechnologies in order to ensure better health conditions. In this aspect, Rose⁵ reported that subjects had become active consumers of medical technologies, biosciences, medicines, and alternative medicine because they had learned — especially throughout the 20th century — that they

could believe and trust science and its products in the form of medicines, diagnostic tests, surgical procedures, and improvements of all kinds in the quality of life. This consumption aims to maximize and improve their lives in a context in which health is understood as a central imperative in contemporary ethical regimes.

Hence, this study surrounds and focuses on the discourses evidenced by health academics regarding their training in understanding gender and biotechnologies. Thus, we have the following research question: what understandings do health students have about gender and biotechnologies, and which ones are accessed in academic environments?

By taking the popularization of discourses on gender and biotechnology, it is considered that they collaborate, are justified, and become of potent relevance as they interfere with and constitute the training process in health. Therefore, it is necessary to expand the understanding of these discourses in the academic training of health students, allowing holistic views of the polarities of expression and life. In this sense, it is understood that encouraging this discussion from the research that gave rise to this article and in a training space — specifically in the Brazilian and Spanish scenarios of health courses — may promote multiple and distinct reflections on the subject, being important for the training of unique professionals who are sensitive to the models of choices of each subject. Thus, this study aimed to investigate the discourses on gender and biotechnologies in the training of health courses.

METHODOLOGY

This is a qualitative, exploratory, and descriptive study that is based on a larger study — a research project — developed by the *Grupo de Estudos e Pesquisas em Saúde (GEPS)* entitled “Gender and Biotechnologies: Interfaces between discourses and institutions in the training of students of health courses.” The study was conducted from March to October 2019 with students of health courses from a Brazilian university located in the central-eastern Rio Grande do Sul State and a university located in the region of Catalonia, Spain.

The techniques and procedures for data production/ collection were given through semi-structured interviews applied to the students, audio-recorded, and transcribed for analysis to obtain the data sought. The interviews were composed of questions about knowledge regarding the theme in university education: gender and biotechnologies in academic spaces.

It should be emphasized that the results, as explained here, mention both locations studied and the main findings in all the health training courses addressed. The authors randomly invited students in their classrooms to participate in this study. The interviews were previously scheduled and carried out at the universities outside the time of academic activities in a place that allowed privacy, allowing data production to respect all ethical principles provided for in Resolution 466/2012.⁷ The study was approved by the Ethics and Research Committee of the University of Santa Cruz do Sul (opinion no. 3.327.608).

The sample was composed of 52 undergraduate health students from Nursing, Medicine, Psychology, Pharmacy, Dentistry, and Nutrition courses from Brazilian and Spanish universities. This study included students enrolled in the third academic semester, regardless of age, and who agreed to participate voluntarily. Moreover, a tape recorder was used as a data collection instrument, and the Informed Consent Form was signed in two copies, one of which was kept in possession of the respondents and the other in possession of the researcher.

During the interviews, students were classified by the initials of their courses and numbers according to the order of the interviews (N1, M2, P3, and so on) to ensure anonymity. The students also provided information regarding the undergraduate course and semester they were in, age, marital status, and filled out an interview form. For data analysis, the propositions of Discourse Analysis by Filho and Baptista⁸ and the fields of cultural studies were used.

The non-numerical observational mode crosses the methodological orientation that guides this study (i.e., it is concerned with deepening the understanding of a social group). Therefore, the method of choice (qualitative) focuses on capturing the essence of the phenomena, whether expressed in speech, gestures, or context observed by the researcher. This was done to explain the relationships of those surveyed among themselves and with the interaction environment, providing the visualization of the multiple meanings that a single experience can provide.⁸

The Discourse Analysis used to explore the data produced in the interviews understands that, in these discursive manifestations, a scope of meanings, motives, aspirations, beliefs, values, and attitudes is present that connect with the spaces of university students' relationships to express processes and phenomena involved.⁸ The data was discussed and analyzed jointly by researchers from both countries. Despite the distinct cultural characteristics of Brazilian and Spanish students, no discrepancies were observed in the speeches about the themes or the

pattern of responses, evidencing common manifestations in both countries.

From the answers, the following analytical categories emerged: gender, culture, education, and implicit biases; knowledge/unknowledge about biotechnologies and the formation in relation to gender and biotechnology; articulation between gender and biotechnology; gender/biology.

RESULTS AND DISCUSSION

Gender, culture, education, and implicit biases

Important aspects in issues related to the curricular content developed in both countries can be pointed out from the data found in this study. Such findings indicate, mainly, that gender and biotechnology are themes that do not subsidize the discussions in the training of these future health professionals. Thus, from the discourses of gender and its articulation with the theoretical reference proposed by the theme of biotechnology, we can realize the need to expand our understanding concerning the academic training of health students.

Gender is understood here as a constitutive element of social relations based on the perceived differences between the sexes. From then on, a dominant position emerges and is expressed as the only possible one. From this understanding of gender, normative concepts emerge, expressed discursively, which denote interpretations about the symbols associated with the ways of conducting and behaving that attempt to limit and contain their possibilities of expression.⁹ These concepts are expressed in religious, educational, scientific, political, or legal doctrines and take the form of a fixed binary opposition. There is a normative hetero (two) understanding (norm) that postulates, categorically and unequivocally, the "correct" and "adequate" meaning of being man or woman, male or female.¹⁰

In the speeches of the students participating in this study, both Brazilian and Spanish, it was possible to find the ratification of these cultural, social, and political heteronormative understandings grounded in the society in which we are inserted. Discourses based on a linear understanding of the body, sex, and sexuality are the keynote presented by the interviewed students, leaving little flexibility to assimilate identities that do not follow this linearity. It surprises the researchers that, in times of deep discussions about social movements and body modifications, there are reports that consider bodies and behaviors as static.

In the field of cultural studies,⁸ in which the present research is inserted, it is understood that language creates the reality it expresses. Thus, it is necessary to observe language in order to detect the reality that it creates and expresses. This language, transformed, will move actions and, in the case of this study, the modes of action of health students in the reality in which they perform their internships and in which, in the future, they will develop their work activities, shown in the following excerpt:

[...] we had to have a differentiated service for this type of person, LGBTQ+, that could make them feel more comfortable with us as well. (N6 Brazilian)

Statements such as this one marked a discourse that ratifies the interviewees' cultural conceptions of gender and sexuality, indicating differences in how each individual conducts their body. It is a reaction that positions "this kind of person" in a specific group, attributing a connotation of inferiority to gender expressions that do not conform to the hegemonic ones. A language that expresses implicit prejudice is also noticeable, considering that the interviewees from both countries let transpire nuances of their understandings that position transgender individuals as people who carry marks that diminish them in the social context.

According to the social environment in which they find themselves, human beings constantly absorb information. Thus, they reach individuals in different ways, which are influenced by lived experiences, apprehended with the information they have lived through, lived with, or acquired affectively through proximity. Implicit prejudice occurs in the formation of the idea or thought linked to the form of creation or the cultural environment in which the person is inserted, creating judgments from pre-established ideas that are reproduced by social normativity.¹¹

When dealing with the heteronormativity of the body, there is the influence of implicit prejudice, so that by the social factor, it determines the existence of a cultural standard already established and understood as immutable. Garcia and D'Angelo¹² reported that the human body is a tool that proposes expansion, going far beyond a biological definition. For Oliveira and Romanini,⁶ the body is a social weapon, observed as a tool of power, which is neither fixed nor constant. The idea of the heteronormativity of the body is influenced by the imposed culture through the implication of implicit and explicit prejudices present in social power relations.

Knowledge/unawareness about biotechnologies and gender and biotechnology training

Biotechnologies are articulated with gender discourses to the extent that they reinforce cultural understandings considered "natural" and "essential" for human beings and their coexistence in society. The biotechnologies available for "body adjustments" subsidize ways of understanding the bodies and producing public policies that provide ways to include them socially. More notably, the publication of Ordinance no. 2836/GM/MS on December 1, 2011¹³ established, under the *Sistema Único de Saúde (SUS)*, the National Policy of Integral Health of Lesbians, Gays, Bisexuals, and Transvestites. Additionally, Ordinance no. 2803 of November 19, 2013,¹⁴ was recently published by the Ministry of Health, redefining and expanding the Transsexualization Process in *SUS*.⁹ In Spain, Department of the Presidency, through the President General of Catalonia, signed Law no. 11/2014, which aimed to guarantee the rights of lesbians, gays, bisexuals, transgenders, and intersexuals and to eradicate homophobia, biphobia, and transphobia.¹⁵

In this sense, it is possible to say that biotechnologies and gender discourses, in both countries studied, have been gaining an increasing space in the production of ways of thinking and relating to oneself and the other. By creating different ways of understanding the body, the notion that one can act upon oneself by modifying, controlling, and producing ways of being and being as men and women, fathers and mothers, and citizens understood as participants in the social environment are strengthened. The production of the self through biotechnologies and the representations of gender discourses are at the service of life and quality of life.¹⁶

Nonetheless, it is important to point out that biotechnologies are not imposed: they are strategies constructed under certain conditions that are constantly changing — more specifically in the production of bodies that embody genders and legitimize individuals within a heteronormative society. It could be said that biotechnologies also function as forms of government that, as they are, control the possibility of including and legitimizing the individual, since they make it an artifact that must be modified by technical intervention, by the imposition of health care, and the possibility of manipulating the body.^{17,18}

We are facing a technological revolution and the announcement of so many possibilities for the use of biotechnologies that, for now, it is difficult to absorb such a large amount of constant and incessant information. However, in counterpoint to these possibilities, when questioning the themes of the study, testimonials were

collected from Brazilian and Spanish students with difficulties in conceptualizing biotechnologies.

Biotechnologies is a theme that I have little knowledge of. This is something that I would have to study more; in fact, I don't know how to formulate an answer (Brazilian M2).

Such manifestations arising from the data collected and analyzed seem incongruous with the social context when everything leads one to think that one is living a revolution, signaling that humanity will no longer need to be subject to the random factors that have marked history, given that the use of biotechnology is offered as a possibility of transforming and controlling the body. In medicine, gene therapy promises a revolution in health, changing the sex of subjects, curing the body's diseases, developing, diagnosing, and treating, even before birth, the diseases that the individual would have. In addition, it is also possible to genetically modify animals to generate organs for transplantation purposes.

The analysis of the statements of the students participating in the study revealed that, when manifesting a certain conceptual lack of biotechnologies and their articulations related to gender — both in terms of the field of interventions and social aspects —, they project the need for curricular restructuring of the undergraduate courses and highlight the weaknesses in the search for these themes in an extracurricular manner, thereby dividing responsibilities. The misunderstandings observed in the data lead us to ask where the themes of gender and biotechnology are located in the undergraduate curricula and what concepts underlie the theoretical/practical discussions of future professionals who will act on the lives of the subjects, and above all, in relation to the impacts that the effective inclusion of these themes as programmatic content of undergraduate health courses could have.

Biotechnologies are ways of applying new technologies to several areas of human activities and needs, including the health area, by developing research, studies, and actions that make the means useful or adapted to the needs of the human being. Rocon and collaborators² stated that biotechnologies used as tools that enable the subject to fit biological definitions taken as social standards are called gender production or production of new bodies when done with hormones, aesthetic procedures, and surgery.

Biotechnologies take a leading position throughout the transsexualizing process, enabling new forms of body, gender, and sexuality presentation. Nevertheless, medical follow-up is necessary when undergoing surgical procedures,

which sometimes ends up being neglected due to the difficulty of access to health services that this population faces. Thus, they end up using hormone therapy on their own.⁶

These questions and the speeches of the students interviewed have such force because the use of biotechnologies has taken a prominent place in the collective imagination, promising to enhance life in its various dimensions. Such findings invite — or almost oblige — us to consider such basic concepts for university education.

For many professionals working in health care, dealing with issues related to gender and sexuality is still a taboo. Because of this, they neglect part of health care, which must be provided comprehensively.¹⁹ Such discussions, when developed during undergraduate training, allow a better understanding of health demands related to gender, expanding the improved access to health and qualified care in its entirety.¹⁹

With the implementation of the transsexualization process in the *SUS*, as a procedure based on the biomedical model and formally regulated by the Ministry of Health, the attention to the lesbian, gay, bisexual, transsexual, transvestite, and other populations was expanded and ensured. In this way, knowledge about the themes of gender and biotechnologies becomes essential to the formation of new professionals so that this issue can be dimensioned/equated adequately.²⁰

Linking gender and biotechnology

The agendas related to discussions about gender and biotechnologies offer various ways to manipulate and control bodies, genes, and cells and, consequently, our lives, produce new concepts to discuss existence. In this way, these discussions have a growing impact on defining and producing subjectivities, causing shifts in the ways of thinking about subjects in society. The understanding of the concepts of gender and biotechnologies and their articulations demonstrate that they must be considered with a notion that “ceases to refer to technical artifacts and starts to designate mediation operations in which distinct and heterogeneous elements may be implicated.”²¹

In this direction, through reflection on the speeches of the interviewed students, it is understood that one must do more than try to verify and verify supposed absolute truths about the possible intersections between gender and biotechnologies: one must seek the understandings that are formed and affirmed in the daily life of the university, connecting with the multiple events arising from professional training in the health area. The following speeches of the students indicate that, in this learning

process in which they are immersed, it still seems complex to formulate discourses in which the aspects of gender and biotechnologies escape from the relation of biological body versus technological use.

Biotechnology would be technology applied to life, right? But it is a gender issue [...] I, all I know, is that it is about the psychological state of the person, like for example, [...] if you were born a man and now you became a woman, this is totally related to biotechnology (N1 Spanish).

Because of genetics, maybe, DNA, something in the inheritance. That's it. If they articulate, then the pro-gender biotechnology of the person, maybe these are things that can make people who don't identify with their sex, their gender have a better life, maybe that? Maybe that's it. Is this biotechnology related to any technology that can help in sex change? And then gender and biotechnology can articulate themselves in a way that one will help the other. I believe that is it (N6 Brazilian).

From the elements found, it is possible to problematize that biotechnologies enable interventions related to the gender of the subjects in order to modify the living conditions related to sex, creating ideals that it is possible to choose what one wants to be, in which “gender” and “biotechnology” can articulate themselves in a way that one will help the other. Such understandings point out that biotechnologies have been responsible for some mutations in the way we relate to our health and ourselves, producing a new device of subjectivation regarding gender, whose main characteristic concerns the dispersion of biotechnological enunciations in people's daily lives and its impact on the way of being and living in the contemporary.²²

Rocon and collaborators² presented the search for technologies in favor of gender transition as a strategy to acquire a body that fits social relationships and settings. Although the participants were accepted in places regulated by heterosexual norms, humanization, and recognition as “women” or “men” were not socially admitted, concluding that surgeries offer an idealized body by expectation guided by historically constructed gender norms and standards.

Gender/biology

The data collected and analyzed, both with students from the Brazilian university and the Spanish university, show essentialized understandings of gender, which center on a binary norm. The students' speeches consider that

heterosexuality is accepted as a standard of behavior, instituted as the social norm to be followed. It is perceived that gender follows as a social marker that positions men and women in certain social roles, with no room for other identity possibilities.

Gender [...] identifies who is a man and who is a woman! (N2 Spanish).

Gender [...] male and female (Brazilian Ph6).

The body's materiality, its solid form, remains unquestioned by Brazilian and Spanish students, indicating that students understand it as intrinsically implicated with the biological matrix of the subject. The researchers understand that this discourse continues to permeate the training of health professionals who have little capacity to move to other possibilities of explanation that are discussed daily in contemporary media. In the context studied, gender is a category crossed by modes of social organization, which differentiates people according to their jobs, salaries, color, and according to the respondents, a classification.

[...] it's as if it were a classification. I understand gender as if it were a classification (Ph4 Spanish).

There are explanations that biology is the core of everything that constructs the human body. It is linked to the biological classification that conceptualizes sexual binarism according to the formation of sexual organs, making sex the determinant of gender. However, the human body is a tool that proposes expansion beyond a biological definition and needs to be understood and widely discussed through these perceptions.^{2,23}

Masculinities and femininities are tensioned in this study as socially constructed through the innumerable cultural pedagogies put into circulation and that “naturalize” ways of being and being in life as beings that possess a body with a vagina or penis. This articulation between gender and education can be perceived in institutions and organizations as constituting the heteronormative culture, which admits only two possible sexes/genders.

In institutions where compulsory heterosexuality remains, there is the regulation of binarity, in which the only possible genders — male and female — are differentiated through sexual practice and desire. Historically, escaping from binarity was considered pathological; however, the transit between genders can show that biology is

manipulable, creating forms unseen in existence. Hodierly, beings that run away from binary logic tend to suffer social discrimination in the most diverse forms.^{23,24}

This study was developed in different cultural fields (Brazil and Spain), but the subjects had in common the characteristic of being health students so the speeches presented similar characteristics between the courses and countries. The students problematize that, despite seeming an exhausted theme, it is of the utmost importance that, in times of religious fundamentalism, the debate is strengthened and can generate advances and fruits that contribute to improving gender equity and possibilities of expression of sexual and gender identities.

FINAL CONSIDERATIONS

The investigations of the discourses on gender and biotechnologies in the context of professional training in health courses and the data from the research indicate that the insertion of this discussion in university training has been carried out in an isolated manner by individual initiatives of professors and researchers, both in Brazilian and Spanish universities. The creation of research groups or research has been a great ally of this insertion, enabling better articulations between the theme and training, although there are still significant gaps in training.

The data from this study indicate that the themes of gender and biotechnologies are little evidenced in the syllabus of undergraduate health courses. Therefore, it is necessary to discuss the restructuring of these curricula in order for these themes to be more present in the training of health professionals, allowing a unique understanding of the differences and choices of each subject.

Furthermore, it is necessary to promote a more intense debate on the articulations and impacts of the use of biotechnologies concerning gender so that, in this way, the subjects may have benefits in their health in an integral manner and in all the factors that contribute to this, being able to live with fewer risks in their choices and contributing to improving gender equity and sexual identities. It should be pointed out that biotechnologies, if well used, can corroborate so that gender-related aspects do not cause harm to health. For this, professionals must have broad access to education and information.

REFERENCES

- Oliveira KH. Intense Encounters: Michel Foucault, Judith Butler, Paul B. Preciado, and the Queer Theory. *Rev Estud Fem* 2021[cited 2022 Jan 10];29(1):e67637. Available from: <https://www.scielo.br/j/ref/a/f8xM5gZfZxn9yZwxZbx8Tt/?lang=pt>
- Rocon PC, Sodré F, Rodrigues A, Barros MEB, Pinto GSS, Roseiro MCFB. Vidas após a cirurgia de redesignação sexual: sentidos produzidos para gênero e transexualidade. *Ciênc Saúde Colet*. 2020[cited 2020 Dec 14];25(6):2374-56. Available from: <https://www.scielo.br/j/csc/a/4sX9R9TRSnk4hzdC8dwr5Qb/?lang=pt>
- Foucault M. *A arqueologia do saber*. Rio de Janeiro: Forense Universitária; 2005.
- Ortega F. *Corporeality, Medical Technologies and Contemporary Culture*. London: Routledge; 2014.
- Rose N. *The politics of life itself: biomedicine, power, and subjectivity in the twenty-first century*. Princeton: Princeton University Press; 2007.
- Oliveira I, Romanini M. (Re)escrevendo roteiros (in)visíveis: a trajetória de mulheres transgênero nas políticas públicas de saúde. *Saúde Soc*. 2020[cited 2020 Dec 14];29(1). Available from: https://www.scielo.br/scielo.php?pid=S0104-12902020000100300&script=sci_arttext
- Ministério da Saúde (BR). Resolução n. 466 de 12 de dezembro de 2012. Brasília: MS; 2012[cited on 2020 Dec 18]. Available from: https://bvsms.saude.gov.br/bvs/saudelegis/cns/2013/res0466_12_12_2012.html
- Lisboa FFL, Baptista MM. Estudos culturais e interfaces: objetos, metodologias e desenhos de investigação. Santa Maria: UFSM; 2016[cited 2020 Nov 21]. Available from: www.ufsm.br/estudosculturais
- Petry AR. Mulheres transexuais e o processo transexualizador: experiências de sujeição, padecimento e prazer na adequação do corpo. *Rev Gaúch Enferm*. 2015[cited 2020 Dec 14];36(2):70-5. Available from: <https://seer.ufrgs.br/RevistaGauchadeenfermagem/article/view/50158>
- Marquez CF, Vinhas LI. Heteronormativity and dominant ideology: the refusal of the song “Parabéns” by singer Pablo Vittar. *Rev Periódicus*. 2021[cited 2020 Dec 14];2(16):143-54. Available from: <https://periodicos.ufba.br/index.php/revistaperiodicus/article/view/37082/25321>
- Gonçalves VO, Pereira H. I’m Black, I’m Gay, and I Have Mental Illness”: Intersections in Portuguese Newspapers. *Rev Estud Fem*. 2021[cited 2020 Dec 14];29(2):1-15. Available from: <https://www.scielo.br/j/ref/a/YcLPcRgkQ7RRgXddqYQyB/abstract/?lang=pt>
- Garcia AM, D’Angelo LB. Corpos Trans na Medida Socioeducativa de Internação: Desestabilizando Práticas e Produzindo Novidades. *Psicol Ciênc Prof*. 2019[cited 2020 Dec 14];39(3):242-56. Available from: https://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-98932019000700317
- Ministério da Saúde (BR). Portaria Nº 2.836, de 1º de dezembro de 2011. Institui, no âmbito do Sistema Único de Saúde (SUS), a Política Nacional de Saúde Integral de Lésbicas, Gays, Bissexuais, Travestis e Transexuais (Política Nacional de Saúde Integral LGBT). *Diário Oficial da União*. 2011[cited 2020 Dec 15] Available from: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2011/prt2836_01_12_2011.html
- Ministério da Saúde (BR). Portaria 2803 de 19 de novembro de 2013. Redefine e amplia o Processo Transexualizador no Sistema Único de Saúde (SUS). *Diário Oficial da União*. 2013 Nov 21[cited 2020 Nov 22] Available from: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2013/prt2803_19_11_2013.html

15. Diari Oficial de la Generalitat de Catalunya (ES). Núm. 6730. Generalitat de Catalunya. 2014 Out 17. [cited 2020 Dez 20] Available from: <https://dogc.gencat.cat/ca/inici>
16. Rose N. Biopolítica molecular, ética somática e o espírito do biocapital. In: Santos LHS, Ribeiro PRCR, organizadores. Corpo, gênero e sexualidade: instâncias e práticas de produção nas políticas da própria vida. Rio Grande: FURG; 2011. p.13-32.
17. Rosa AS, Petry AR, Mocelin G, Somavilla VEC, Weiss LV. Biotecnologias em saúde, risoterapeutas e profissionais de Enfermagem: limites e possibilidades de atuação conjunta. Rev Interdisciplinar Prom Saúde. 2021[cited 2021 Nov 20];4(1):1-12. Available from: <https://online.unisc.br/seer/index.php/ripsunisc/article/view/16635>
18. Petry AR, Somavilla VEC. A exortação do discurso de risco e a coleta autóloga de células tronco do cordão umbilical. Texto Contexto Enferm. 2016[cited 2020 Dec 12];3:2-8. Available from: https://www.scielo.br/scielo.php?pid=S0104-07072017000300323&script=sci_abstract&tlng=pt
19. Raimondi GA, Moreira C, Barros NF. Gêneros e sexualidades na educação médica: entre o currículo oculto e a integralidade do cuidado. Saúde Soc. 2019[cited 2020 Dec 14];28(3):198-209. Available from: https://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-12902019000300198
20. Santos MA, Souza RS, Lara LAS, Risk EM, Oliveira WA, Alexandre V, et al. Transexualidade, ordem médica e política de saúde: controle normativo do processo transexualizador no Brasil. Est Inter Psicol. 2019[cited 2020 Dec 14];10(1):3-9. Available from: http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S2236-64072019000100002
21. Galindo D, Rodrigues RV, Lemos FCS, Almeida LCCS. Biotecnologias, subjetivação e psicologias: mercado de células-tronco do cordão umbilical. Psicol Soc. 2017[cited 2018 Sept 10];29:e148056. Available from: <http://dx.doi.org/10.1590/1807-0310/2017v29i148056>
22. Hüning SM. A psicologia na rede das novas biotecnologias. In: Guareschi NMF, organizador. Psicologia, formação, política e produção em saúde. Porto Alegre: EDIPUCRS; 2014.
23. Butler J. Corpos em aliança e a política das ruas: notas para uma teoria performativa de assembleia. Rio de Janeiro: Civilização Brasileira; 2018.
24. Butler J. Problemas de gênero: feminismo e subversão da identidade. Rio de Janeiro: Civilização Brasileira; 2014.