# Fertility Awareness Practices among Young Women

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***Abstract:*** *The purpose of this article is to characterize fertility awareness and describe its relationship with gender apparatus and biomedicalization. Using an ethnographic approach, we began with a* Facebook *group and conducted semi-structured interviews with six of its spokespersons. In addition, we analyzed books and sites recommended in these interviews and made participant observation in a face-to-face course given by one of the interlocutors. We conclude that concomitant to collective projects for empowering bodies and subjectivities with menstrual cycles, individual responsibility is established for health and self-improvement. Furthermore, the substantialization of sexual binarism is reinforced with the production of a "hormonal nature", although it is linked more to health than to gender.*
***Keywords:*** *Fertility Awareness; Biomedicalization; Gender; Empowerment; Hormones.*

***Práticas de percepção da fertilidade entre mulheres jovens***
***Resumo:*** *Neste artigo temos como objetivo caracterizar uma configuração em torno da percepção da fertilidade e descrever sua articulação ao aparato de gênero e à biomedicalização. Com uma abordagem etnográfica, tomamos como ponto de partida um grupo no* Facebook *sobre percepção da fertilidade e realizamos entrevistas semiestruturadas com seis de suas porta-vozes. Além disso, analisamos livros e sítios que nos foram indicados nessas entrevistas e fizemos observação participante em um curso presencial ministrado por uma das interlocutoras. Concluímos que concomitante a projetos coletivos de empoderamento de corpos e subjetividades com ciclos menstruais, há responsabilização individual pela saúde e pelo autoaprimoramento. Ademais, reforça-se a substancialização do binarismo sexual com a produção de uma "natureza hormonal", ainda que seja mais associada à saúde que ao gênero.*
***Palavras-chave:*** *Percepção da fertilidade; Biomedicalização; Gênero; Empoderamento; Hormônios.*

## Reconfiguring hormones, natures and genders

> *I said: "What I want is to ovulate, because I see this as a sign of health, according to my studies". And the doctor asked: "But do you want to get pregnant?" And I responded: "No, I don't, but I want to ovulate, and for three months I haven't ovulated". He kept insisting that I wanted to ovulate because I wanted to get pregnant. "But do you have a partner? So you want to get pregnant. "And I said: "Let's take care of what is important for the process of ovulating, which is important to me. I want to ovulate, but I don't want to get pregnant". And he kept insisting. Until I said: "But can you recognize that my body is well, within your medical competence?" This is what I needed. I wanted to know about my health, my reproductive system, because it is related to total health. It is the metonym of total health"* (Talita, 08/08/2016).

This is a passage from a dialog between Talita, a 23-year-old psychologist, and an endocrinologist, that she presented us in an interview in August 2016, one year after she had stopped taking contraceptive pills, which she had begun using at 17. She substituted this contraceptive method with practices of fertility awareness because of a need to "know herself fertile", since she felt "especially sterile". She described that sterility as a "lack of desires and creative movements" and

"fear about health even when the exams are good", which she understood as an effect of the use of contraceptive hormones. When she stopped using hormones, Talita said she experienced a big change, in which the "desire for life, beyond sexual desire, increased considerably".

Although she found this change to be positive, she still felt unsatisfied for not being able to confirm the occurrence of any ovulation until that time, which left Talita concerned. Among other actions that she took because of this concern, she decided to consult an endocrinologist, "a hormone doctor", which led to the encounter presented above. Frustrated by "not being able to ovulate", it was only in November 2016 that Talita sent messages to her friends commemorating the fact that she finally menstruated, the fruit of a confirmed ovulation.

But how did Talita reach the conclusion that she was not ovulating and why did she want to ovulate? Why did Talita believe that stopping her use of hormonal contraceptives would increase her "desire to live"? Why did she confront her doctor to defend a link between ovulation, hormones and health, and reject a direct association between ovulation and pregnancy? These are some of the questions that we will respond to during this article, by showing how specific bodies and subjectivities are produced as effects of new practices related to fertility awareness.

The interview with Talita, synthesized in an exemplary manner the object in analysis in this article. It involves a new configuration related to practices of fertility awareness that have stood out in certain segments of young women in Brazil and is articulated, above all, via the internet and on social networks. The study that supports this article was thus focused on a Facebook group dedicated to the theme, and based on an analysis of its publications and on other sites and documents, on the realization of interviews with its members, and participant observation at an event.[1] It is inserted in a broader discussion about processes of biomedicalization and new modes of production of subjectivities, which are deeply marked by gender differences. In this direction, we discuss how new practices of fertility awareness among the group studied reveal new efforts to monitor and improve health that reenact gender differences and also revive notions of nature and corporality.

The analytical focus related to gender is absolutely key to understanding the movement described and to suggesting some more general interpretations at the conclusion of the article. In relation to gender apparatus, we follow Judith Butler's (2010; 2011) proposal, which argues that this apparatus is constituted through regulated practices of formation and division of subjects. Butler points to compulsory heterosexuality as one of the means by which gender is produced. For Butler,

> The heterosexualization of desire requires and institutes the production of discrete and asymmetrical oppositions between "feminine" and "masculine," where these are understood as expressive attributes of "male" and "female." The cultural matrix through which gender identity has become intelligible requires that certain kinds of "identities" cannot "exist" – that is, those in which gender does not follow from sex and those in which the practices of desire do not "follow" from either sex or gender. "Follow" in this context is a political relation of entailment instituted by the cultural laws that establish and regulate the shape and meaning of sexuality. Indeed, precisely because certain kinds of "gender identities" fail to conform to those norms of cultural intelligibility, they appear only as developmental failures or logical impossibilities from within that domain. (BUTLER, 2010, p. 115).

This heterosexual hegemony requires and produces each one of the terms of the system as univocal, and simultaneously constitutes the two sole possibilities of gender within this oppositional binary system that tends towards an hierarchization of men and women (always coproduced along with other markers). In this sense, it is through a "naturalization" or "biologicalization" of sexual difference oriented primarily and or necessarily to reproduction, that assures internal stability and the binary structure itself as effects of this apparatus.

On the other hand, it is also this apparatus that, for Butler, makes genders intelligible, understood as those that have coherent and continuous relations between sex, gender, sexual practice and desire. Through a set of reiterated and citational acts at the interior of this regulatory structure, gender – which is for this reason, performative – acquires an appearance of substance.

We will argue that it is in this sense that while fertility awareness practices, as performative practices, simultaneously reinforce these gender apparatuses, to some degree they also reformulate them.

## Fertility Awareness Practices and the Research Paths

In this section we will present the fertility awareness practices and describe the construction of the material that is analyzed in the article. At first, it is necessary to situate the initial context of the study. Due to the study's interests in the use of hormonal artefacts by young women, we found that, since 2014, a growing number of reports about the adverse effects of the use of hormonal contraceptives have been published, causing the debate on Facebook[2] to grow significantly as

[1] This study was conducted for the realization of the master's dissertation entitled Aparatos de produção subjetivo-corporais nas práticas de percepção da fertilidade, by Bruna Klöppel (2017), supervised by Fabíola Rohden, in the Graduate Program in Social Anthropology at the Universidade Federal do Rio Grande do Sul, with a master's grant from Capes.

[2] *Facebook*, launched in February 2004, is the world's largest social network and now has more than two billion associated profiles. The site allows, via registration, the creation of personal profiles, and the creation, participation and


Revista Estudos Feministas, Florianópolis, 29(1): e61724
DOI: 10.1590/1806-9584-2021v29n161724

well. The dangers associated to these hormones include thromboses, embolisms, stroke, depression, fatigue, decreased libido and increased body fat. In this context, many women have been suspending the use of contraceptive hormones, and alternative contraceptive practices – not necessarily new ones – have been presented and debated in Facebook groups and other social networks.

It is in this context that arose, for example, the group entitled "Adeus Hormônios: contracepção não-hormonal" [Goodbye Hormones: non-hormonal contraception], which became the largest group related to contraception in the Portuguese language on this social network, with 130 thousand associated profiles in 2017. The group was the object of study for the dissertation of Ananda Santos (2018), who found in the participants' discourses concerns for the collateral effects of the contraceptive pill and other contraceptive hormones. The participants found the choice of non-hormonal contraceptive methods more suitable, considering the specificities of each subject, with discussions about the idea of "natural body and production of lifestyles" (SANTOS, 2018). The group is highlighted by the presentation of non-hormonal contraceptive options: condoms, diaphragms, copper intrauterine devices, coitus interruptus and finally methods based on awareness fertility.

Interested in knowing more about fertility awareness, we followed an indication made on "Adeus, Hormônios" and we began participating in another Facebook group dedicated to the discussion of this type of contraception in particular. We saw this group grow rapidly in 2015 and 2016, reaching 13,900 associated member profiles in November 2016.[3] Participation in this group was the starting point for contacting the women, and locating sites, books and events that would be central to the analysis conducted here.

The fertility awareness practices involve, in addition to observation and registration of the length of the menstrual cycle, the observation, registration and interpretation of the so-called primary signs of fertility, manifest in and by the body during the cycle. The cervical mucus, basal body temperature and conditions of the cervix[4] are the three signs considered primary by the interlocutors with whom we spoke. These practices aim to accompany the menstrual cycle and can have as an objective contraception, conception and or monitoring of health. The primary signs indicate the phase of the menstrual cycle in which the practitioners are found and are interpreted daily according to their characteristics and variations. Thus, they seek to perceive if it is possible to get pregnant or if there are problems related to health and quality of life that can be administered.

The Facebook group dedicated to the discussion about these practices is described by its moderators[5] as "a space for exchanging information and experiences about the menstrual cycle, fertility awareness and natural (non-hormonal) methods of contraception or conception and or monitoring of health" (Facebook group, 2016, emphasis in the original). They also encourage that practitioners not look for answers about their menstrual cycles in the group if they do not have data about cervical fluid and or basal body temperature to share. The responses they are seeking usually refer to the fertile period, the relationship between their hormones and health, the occurrence or not of ovulation, the possibility to get pregnant, and others. Finally, the moderators make clear that an important pre-requisite for the methods to be effective, for both contraceptive purposes and for monitoring health, is that the practitioners have natural cycles – understood as those that take place when no type of hormonal contraception is used – whether they are regular or not.

In terms of the methodological perspective adopted, we use this Facebook group as a starting point, while always questioning the possibilities and limits associated to the very idea of constitution of a group. As Bruno Latour (2005) affirmed "Groups are not silent things, but rather the provisional product of a constant uproar made by the millions of contradictory voices about what is a group and who pertains to what" (LATOUR, 2005, p. 31,). Inspired by this author, we sought spokeswomen for the group, those who are active in "speaking for" its existence. They make a fundamental difference in establishing its frontiers, given that they are active in the creation of its rules, its objectives, priorities and formats. For Latour, there is no group without the existence of those who administer the recruitment of allies (LATOUR, 2005, p. 32) and we understand that it is the moderators and collaborators of the group who conduct this task here.

sharing of groups, events, pages, links to other sites, games and other items. *Facebook* is a company that profits from advertisements aimed at specific publics on its pages and by selling data that it collects, although without individually identifying users. In this sense, the platform is not neutral. It is also important to emphasize that despite the fact that we reveal throughout the article some of the differences that this social network makes in the articulations studied, this description is not exhaustive, because of the limits and focus of our research.

[3] Accessed on 08/11/2016. These numbers refer to the quantity of profiles (accounts registered on this social network) that have access to the posts to the group; the form of participation of each one of these profiles is different. We do not mention the name of the group in this article to make it difficult to find and expose the people mentioned, whose names used here are fictitious.

[4] In the case of contraception, the practices are associated to different contraceptive methods; some are based mainly or solely on the accompaniment of cervical mucus, while the basal body temperature method is based only on temperature. Meanwhile, symptothermal methods, used by most of the women interviewed, are those that consider both signs, while monitoring of position, texture and opening of the cervix are optional.

[5] The group moderators are those who can publish and edit the description of the group, alter its privacy configurations, remove publications, post them, and also block and permit the entrance of new member profiles.

In this sense, the Facebook group was one actor – among others – that we analyzed although it was not the central empiric field. Through it, we approached the participants of the "group of moderators"[6] and because we understood it to be more useful to our objective, we interviewed them. These interviews gave us access to more accurate descriptions of the daily fertility awareness practices and thus understand to which elements they relate in the lives of our interlocutors. In complement, we accessed books, sites and blogs that were indicated to us in the interviews or mentioned in the group and finally, we also participated in a course given by one of the women interviewed, which taught the principles of the fertility awareness practices. All of this material served as support for the ethnographic analysis that follows.

By mapping this situation and recognition of the formation of this group, it was possible to characterize what we are calling a particular configuration, linked to fertility awareness. We use the notion of "configuration, and also of articulation, as a network of discursive-material relations that are relatively stable, which include presences and absences, as well as their conditions of possibility. This perspective is inspired by the concept of hinterland, that John Law (2004) describes as a bundle of indefinitely extending and more or less routinised and costly literary and material relations that include statements about reality and the realities themselves; a hinterland includes inscription devices, and enacts a topography of reality possibilities, impossibilities, and probabilities. A concrete metaphor for absence and presence" (LAW, 2004, p. 160,). In the case of the configuration produced here, on one hand, it involves a project of self-knowledge in relation to the body and empowerment ("female" or "of people with menstrual cycles") in relation to biomedicine, about which its practitioners have many criticisms. Fertility awareness is also linked to a search not only for self-monitoring, but also to the improvement of health, the meaning of which is related to other terms, such as "well-being" and "quality of life", in a logic that is quite close to that of biomedicine and its methods.

We interviewed six participants of the moderation group. It is important to indicate that all of the interlocutors know each other through their profiles on Facebook groups that discuss non-hormonal contraception, while few of them know each other personally. All of them are well educated, having at least bachelor's degrees, and many of them have taken graduate courses. Among those interviewed, they all identify themselves as women, and white, and had been or are in relationships with cisgender men, without children and are between 20 and 30 years old. Three of them are moderators from São Paulo state, one is from Santa Catarina, one from Rio Grande do Sul and one from Pernambuco.

They are also engaged in an online specialization course, entitled "Justisse Holistic Reproductive Health Practitioner Training Program", offered by *Justisse College*, in Edmonton, Canada, under the coordination of Geraldine Matus. This is one of three programs certified by the *Association of Fertility Awareness Professionals* (AFAP), whose objective is to train instructors in fertility awareness methods in a secular context aimed at female empowerment in health.

## Nature, Health and Empowerment

This new articulation around fertility awareness has as one of its central issues the controversy about hormonal contraception. Upon analyzing the dynamic of the group on Facebook and the interviews conducted, we perceived that the first approximations to fertility awareness practices by our interlocutors took place through a rejection of contraceptive hormones and a consequent search for an alternative form of non-hormonal contraception. In this sense, it is common, in this configuration, that the fertility awareness practices are also often promoted as "natural contraception", placed as a counterpoint to hormonal contraception, and presented as a "healthy" and "empowering" alternative to the consumption of hormones. While the recent literature has identified an increasing consumption of hormones by women for uses beyond contraception, for purposes of improvement, and emphasizing the dilemmas that this involves (Fabíola ROHDEN, 2017; 2018a; 2018b; Daniela MANICA; Marina NUCCI 2017; Livi FARO, 2016), fertility awareness practices present a contrasting situation.

Fertility awareness is framed as a natural practice because it does not depend on the ingestion of hormones that are exogenous to the body. According to the interlocutors, the contraceptive hormones impede the existence of the menstrual cycle, an actor considered "natural" and "essential to health". In this articulation, this cycle is described as composed of periodic dynamics involving variable quantities of hormones, with the main protagonists being estrogen and progesterone, which lead to the occurrence of ovulation and menstruation. Contraceptive hormones, in turn,

[6] The "moderation group" is composed of moderators and collaborators of the *Facebook* group. The collaborators assist in the moderation by actively participating with publication of topics about fertility awareness, responding to doubts that appear in the group and being involved in the decisions about moderation in a group on the *Telegram* messaging platform. According to its official site, *Telegram* is a software application for exchanging instant messages, photos, videos, audio calls and files. It was founded in 2013 by the Russian brothers Nikolai Durov and Pavel Durov. It is promoted as having better privacy security than its competitor *WhatsApp*, it is free of charge, and according to the founders, is not for profit. Available at https://telegram.org/faq. Accessed 31/01/2020.


Revista Estudos Feministas, Florianópolis, 29(1): e61724
DOI: 10.1590/1806-9584-2021v29n161724

impede this variation that is considered "natural" through the regular consumption of hormones considered similar to those produced by bodies. Without this variation, there is no ovulation, fertility or menstruation. Natasha, a journalism student, explained this to participants in the in-presence course that we accompanied about fertility awareness:

> *If menstruation is a consequence of ovulation, and when you take contraceptives you do not ovulate, it is not menstruation, right? At the pause of the contraceptive, you bleed. That is not menstruation. It isn't. True menstruation is a bleeding due to ovulation; this is menstruation. Other bleedings, that take place before ovulation or not due to ovulation are not menstruation. This bleeding from the pill, for example, it is bleeding from hormonal privation. Because you are receiving hormones and then you stop receiving hormones. If you do not have a cycle, it is not menstruation. On the pill, your cycle is repressed* (Natasha, 30/04/2016).[7]

Thus, in this articulation, the menstrual cycle is part of the constitution of a "natural body" that menstruates, ovulates, has fertile periods and hormonal variation. On the other hand, contraceptive hormones are considered "artificial" and have adverse effects by interfering in these cycles, suppressing these particular hormonal variations. Thus, frontiers are produced related to "one's own body" or to the "natural body", that include the menstrual cycle and exclude contraceptive hormones, even if the latter have been consumed daily for years, as is the case of the practitioners with whom we spoke and those studied by Santos (2018). To be known, this natural body should be free of the interferences of the hormonal contraceptives.

Thus, one of the most common reasons for the interruption of the consumption of contraceptive hormones reported in the group about fertility awareness is the desire to "know one's own body" to "know the natural body" or to "know oneself". This self-knowledge that is possible with the refusal of contraceptive hormones and with the practice of fertility awareness is associated to an empowerment in health. According to the interlocutors, the practices make viable greater knowledge and control over the body, which, in turn, leads to more autonomous and conscious decisions in relation to health. Thus, the presence of menstrual cycles is associated to a more natural, healthy and empowered life, as shown in the statements of Ana, Luiza and Natasha:

> *It is a form of empowerment, isn't it? You aren't dependent on a medicine that will harm your life or on something invasive.* ***It is having this greater power over health and depending less on doctors****.* […] ***I think there is no one better than us, with all this information that we observe daily****. It is much more information than a doctor is able to have in a basic medical history* (Ana, 27/10/2016, emphasis ours).

> ***I am able to take a series of measures to improve my health and facilitate my ovulation, to have my ovulation and my cycle be more regular, yes****. There is that saying: we are afraid of what we don't know.* ***Ga****ining knowledge is a step for you to stop being afraid, to accept. A step to celebrate, who knows. Instead of this very negative energy that is dirty, ignoble, this is problematic. I think that it is empowering in this sense* (Luiza, 10/05/2016, emphasis ours).

> ***It is to know our own body, right? How is it that we do not know our own body?! I think this is a form of violence****. It is very violent that people lie to us deliberately: "You can get pregnant at any time in the cycle", "You can have an orgasm and get pregnant". This is very serious. I think that there is a complete relation with empowerment".* ***And for a woman to truly have the power of choice, of which contraceptive method she wants to use, whether hormonal or not, she needs to know first how her body functions*** (Natasha, 06/05/2016, emphasis ours).

As can be grasped, fertility awareness is understood as a practice of knowledge that can redistribute authority held by doctors and reconfigure gender relations, generating greater autonomy for women, mainly in relation to health and the management of fertility. These practices are also claimed to be a form of behavior that is critical of biomedicine, which is linked to an excessive prescription of contraceptive hormones of which the interlocutors are critical. Moreover, they disapprove of the medical authoritarianism and the interests of the pharmaceutical industry in profiting via women's bodies. The statements of Rafaela, Ana and Luiza are illustrative of the framing given to biomedicine in this configuration:

> ***We have hormonal medicine that controls women in a very subjective way. In Western medicine, doctors detain knowledge, and they are the ones who say what you should do****. They do not want you to know what to do with this.* ***They do not want you to***

[7] Here it is important to remember the work of Nelly Oudshoorn (1994), which indicates that at the time of creation of contraceptive hormones, a decision was made to have the pills be taken daily for 20 days, followed by a pause, which would result in bleeding. On the fifth day of bleeding, the pills would be consumed again. Oudshoorn (1994) calls attention to the fact that this "imitation" of menstruation was considered necessary for the adhesion, by many women, to use of the pill and acceptance by public opinion. A lack of bleeding, without association to pregnancy or menopause, would be understood as an excessive intervention in nature, which would cause strong moral objections (p. 119-120). Moreover, this specific medication regime would contribute to a greater standardization of the length of the "menstrual cycles", leading to the understanding that it is "normal" and "regular" for menstrual cycles to always last four weeks and those that are different are considered irregular (OUDSHOORN, 1994, p. 136).

> ***have autonomy.*** *I think that this is a quite structural problem, which begins in medical school* (Rafaela, 15/07/2016, emphasis ours).
>
> *The pill is the perfect method for gynecologists, because serious collateral effects that it can cause, such as a person dying or being hospitalized, are rare.* ***So doctors simply believe that these secondary effects, such as depression and decreased libido, do not exist, which is nonsense.*** *Or they say to use a lubricant or that we are depressed because our life is junk, who knows. Or they send us to a psychologist.* ***I think that the woman is often not taken seriously*** (Ana, 03/09/2016, emphasis ours).
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> ***There is also pressure from the pharmaceutical industry on all doctors and all specialties.*** *The sales rep arrives and gives free samples, the industry supports congresses* (Luiza, 10/05/2016, emphasis ours).

The hormonal contraceptives are therefore associated to problems of inequality in the relationship between doctors and patients and in the relationship between doctors and the pharmaceutical industry. Thus, it is understood that the noxious health effects caused by contraceptive use are made invisible by these relations of power and are denounced.

Although it is the criticism of hormonal contraception that mobilizes women to know about fertility awareness, we find that, as practices are learned, the objective of monitoring health winds up surpassing contraception. From the interviews, we perceived that the search for "health, well-being and quality of life" occupies a central place in the analysis of their menstrual cycles. While not all of the women we interviewed use the practices as contraception, they all use it as a form of "monitoring health".

The relation between the monitoring of the menstrual cycle, offered by the fertility awareness practices, and health is, therefore, what is at the core of Talita's concerns, with which we began this article. She is one of our interlocutors who actively participates in this configuration. After stopping her consumption of contraceptive hormones and beginning the fertility awareness practice as a form of "re-encountering her body", she perceived that her menstrual cycle did not correspond to that considered healthy in this articulation.

## Between Recognizing, Monitoring and Improving the Menstrual Cycle

We will now show how the fertility awareness practices are established as practices of self-monitoring and self-improvement related to health, identified in daily practice as something more relevant and motivating for the interlocutors than contraception. In the Facebook group about fertility awareness, the first guidance given to those women who want to learn the practices is to "understand the menstrual cycle". To do so, reading is suggested of publications about the menstrual cycle on the blog entitled "O Lado Oculto da Lua" [The Dark Side of the Moon] (Carolina ZANELLI, 2015a; 2015b). The blog – written by a biologist who practices methods based on fertility awareness since the creation of the Facebook group, in which she also participates – is indicated by our interlocutors as one of the main centers of content about fertility awareness available in Portuguese. The description of a healthy cycle found in this blog was one of the elements needed for Talita to reach the conclusion that she was not ovulating, and therefore, that her menstrual cycle was not healthy.

Analytically, we understand that there is no "menstrual cycle" as a "substance" that escapes the relations through which are produced the performances in which it is presented, and the descriptive practices of a menstrual cycle are also prescriptive, and therefore, fundamental to the constitution of that cycle. In this sense, they are indispensable to the fertility awareness practices as a form of self-monitoring and improvement, because they present the signs that should be monitored and the indications that they give in terms of health and quality of life. For this reason, we will summarize how the menstrual cycle is presented in this blog followed by a description of Talita's search for the production of a similar cycle, which is considered healthy.

According to one of the posts on the blog, the beginning of menstruation marks the beginning of a menstrual cycle and has as a fundamental reference point an event of the previous cycle, ovulation, and is understood as a fruit of it. The so-called follicular phase begins on the first day of menstruation and involves the process that goes from the beginning of the cycle until the release of the ovule by the ovary, which is known as ovulation. The cervical mucous, produced by the cervix under stimulus from estrogen, is described as "a natural and healthy fluid" that changes during the follicular phase: it is drier at first and becomes more moist as ovulation approaches (ZANELLI, 2015b).

Still during the follicular phase, the text describes that there is a progressive improvement of mood and energy, which "can be a bit down" during menstruation and that "we are fine" just before ovulation. Moreover, the end of the follicular period (when ovulation is approaching) can be associated, according to the publication, to "swelling of the breasts and lips of the vulva". All of these characteristics – related to humidity and the presence of cervical fluid, to mood and energy and to the swelling mentioned – are associated in a primordial manner to an increase of estrogen and the consequent proximity of ovulation.

The second phase of the menstrual cycle, known as the luteal phase, begins with ovulation and ends with the next menstruation. It is characterized by the production of progesterone (which does not occur before ovulation), which impedes the occurrence of a second ovulation in the menstrual cycle. At the end of the luteal phase, with the drop in the levels of estrogen and progesterone, menstruation occurs. The main sign of fertility associated to the luteal phase is the increase in basal body temperature. According to the blog,

> Despite the meaning of the name, progesterone (like the other hormones!) is important not only for pregnancy, but also for the menstrual cycle, and for health in general, and has various effects on the entire body! One of these effects is to increase metabolism, and this is reflected in the increased basal temperature. The *basal temperature* is the temperature of the body at a state of rest, measured with a specific thermometer soon after waking up, before getting out of bed. Under the effect of progesterone, the basal temperature increases after ovulation (ZANELLI, 2015b).

In addition, with the drop in estrogen and progesterone levels at the end of the luteal phase, the basal body temperature also drops. In relation to cervical fluid, there is, during the luteal phase, a progressive reduction in moisture or an interruption in its production. In terms of energy and mood, they are described as remaining high at the beginning of the luteal phase, however, "they gradually decline". The duration considered healthy of a complete menstrual cycle is, according to the publication, from 24 to 35 days.

Based on this description of a menstrual and hormonal cycle, Talita learned what is a healthy menstrual cycle and came to relate to the signs – mucus, temperature, mood and other symptoms – which could materialize it in her daily life. She became capable, by means of active self-monitoring, of identifying the "problems" in her own cycle when measured by this description. It is not enough, however, to identify them. It is necessary to also learn to produce a menstrual cycle that can be recognized as healthy. This is what improvement involves in fertility awareness.

Since 2015, Talita has been measuring and recording her basal body temperature daily with the help of a thermometer. However, she was not able to identify an increase in temperature followed by bleeding, in up to 16 days, which could be considered menstrual. She also did not confirm pregnancy, which could be another reason for not having a visible variation in her temperatures nor menstrual bleeding. Thus, it was assumed that her body was not producing progesterone and, therefore, was not ovulating. In the same way, she also analyzed and recorded her vaginal mucus daily when she went to the bathroom, and even so was not able to distinguish them. Talita "was only able to conclude that I was dry". This was also read as an insufficient quantity of estrogen, the hormone responsible for moisturizing the mucus and which, at its peak, would allow the occurrence of ovulation and of an improved mood.

In this sense, Talita's search for ovulation was also a search to achieve sufficient quantities of estrogen that would allow ovulation and production of progesterone that this causes. Not ovulating thus indicated that she did not have the ideal quantity of these hormones; when she was able to obtain them, she would then be better in terms of health, well-being and quality of life. For this reason, Talita invested in taking *vitex*, an herb that she purchased from an on-line pharmacy in São Paulo, which did not require a medical prescription. For the same reason, she also took *maca peruana* [*Lepidium meyenii* - Peruvian ginger] and a supplement of magnesium and zinc, which she considered "natural" and that could "help the body regulate itself". In addition to an endocrinologist, Talita also went to a gynecologist. In one of these consultations, the doctor told her that she had never heard of *vitex* and *maca peruana*. Talita said she thought to herself, but did not say to the doctor: *So write it down because I want to see you keeping up to date.* We then asked her why exactly she took the *vitex*, to which she responded:

> *For cases of a long time without ovulation. To stimulate hypophysis, to stimulate production of estradiol, the main estrogen of the ovulatory process, so that it reaches a satisfactory level for the production of a follicle that is able to break*. […] *I also tried maca peruana. I told her [the gynecologist] and took some bottles of vitex and maca peruana to show her. I was taking them for two weeks, a short time. In addition, supplements of magnesium and zinc, which would be the most inoffensive nutrients to supplement. I asked what she thought, she said that she would do research on maca peruana and vitex. And about the supplements, I thought great. She also indicates them in cases of inflammation as well. It certainly will do no harm. She gave a prescription as I wanted. I asked for 90 capsules, 3 months to be able to have a result* (Talita, 08/08/2016).

In the second conversation with Talita, she said that the consumption of magnesium and zinc[8] was beginning to have effects. She also said that she stopped taking *vitex* because she did not feel a difference, but had returned to taking the Peruvian ginseng. It would also be a form

[8] These two supplementations are promoted for their anti-inflammatory properties, given that inflammation – attributed to the consumption of wheat and milk derivatives, cigarettes and environmental toxins – would be related to problems associated to hormonal receptors. If these receptors do not function, estrogen would not have an effect and ovulation would not be possible. These relations are usually associated to the site www.larabriden.com, maintained by the naturopath Lara Briden and often mentioned by the interlocutors.

of stimulation of estrogen production, but said she took it "experimentally, not very regulated". In addition, she said that she began to make an effort to have a better diet, although it did not involve "becoming a food monk", but of "observing how the body reacts to certain things, respecting individuality". In addition, she mentioned other practices that she considered could influence hormone production, such as sleeping better, doing psychotherapy, physical exercise, and other activities that she considered to involve care for herself.

In the articulation around fertility awareness, she sought not only production of hormones, but an ideal balance among them, given that the interaction in the world would tend to make them imbalanced. Contraceptive hormones are one of the main causes of imbalance, but also poor diet, an intense workload, stress, a sedentary lifestyle, workhours based on a standard of productivity of the male body (which would be linear, and not cyclical), sexism in various forms, and others. How, therefore, would it be possible to rebalance the hormones? Some sites and books to which the interlocutors repeatedly refer use terms such as "restore menstrual and fertility health", "repair the cycle", "holistic hormonal health", "hormonal health", and others. In addition, the 20th anniversary edition of *Taking Charge of Your Fertility* (2015), considered by the interlocutors as the "bible of fertility awareness" had a new chapter entitled "*Natural Ways to Balance Your Hormones*".

The changes suggested by these sites and books, in the search for balancing the hormones, concern these changes which Talita is making an effort to make: diet, exercise, reduced contact with so-called endocrine disruptors and stress, quality of sleep and consumption of vitamin supplements and phytotherapy supplements, also known as "natural medicines". These changes also appeared in the conversations with other interlocutors. Rafaela, a biologist who lives in the interior of Rio Grande do Sul, discussed with us her changes in diet and in consumption of vitamin supplements to improve the balance between estrogen and progesterone in her menstrual cycles:

> *I generally try to eat things that I know are good for my body and for estrogen metabolism. I always try to eat dark greens, arugula, watercress, couves* [similar to collard greens]. [...] *I increased the good things but did not cut the bad things. Like sugar every day.* [...] *Vitamin D, I had an exam, and it was insufficient, and Vitamin D is totally related to fertility. I began to take magnesium and Vitamin E to deal with the problem of sore breasts. But I am taking them for a month and a half, so it is still a bit soon to have a result. Probably I will begin a new treatment for this with Vitamin B6 and that is to help produce progesterone. Because breast pain is an excess of estrogen in relation to progesterone. There is an imbalance.* [...] *I ask for the supplements to be prepared.* [...] *I look on the Internet for "manipulation" pharmacies that produce the medicine without a prescription, and so I get them* (Rafaela, 30, 15/07/2016).

As in Talita's case, the pharmacies that handle internet sales, without requiring a doctor's prescription, make a difference in the access to vitamin supplements, doing away with medical consultation.

Beatriz, who at the time was a bachelor's student in human sciences, expressed a concern with the effects of xenoestrogens in her menstrual cycle and described her attitudes that sought to attenuate the imbalance they caused. In addition, she reported changes in her diet and sleep, as well as practical difficulties related to maintenance of these habits in her daily life in terms of the need to relate to people close to her:

> *I stopped using conventional cleaning products, because I was studying why these things are bad. Like the xenoestrogens, that are in chemical products, and are these things that make alterations. They are substances very similar to estrogen and that are in thousands of things that we use, mainly in plastics. And this causes the body to understand that you have much more estrogen, and this causes various hormonal deregulations.* [...] *I began to eat less soybeans, because of estrogen, and to eat more meat, to try to eat more organic food, to sleep in the dark,* [...] *When I put curtains in the room, I began to sleep in the dark, this improved the regularity of my cycle. But I travel a lot to São Paulo because my parents and my boyfriend live there. And then when I am there, my life changes a lot.* [...] *Everything goes back to how it was, you know?* (Beatriz, 24, 06/05/2016).

Ana, a master's student in mathematics at a public university in southern Brazil, reported another practice to deal with the excess estrogen in relation to the progesterone (the so-called "estrogen dominance"): vaginal steaming.

> *In my first meeting with the instructor in the course, she asked what I thought of the cycle. And if I wanted to change something. Because they are not completely healthy, there are some mucus patterns that I know perhaps indicate an estrogen dominance. But I kind of don't expect to be totally healthy the way that I am now: a bit depressed, sedentary, overweight.* [...] *She asked about my mucus and I said that it is a bit pasty, yellowish. And she indicated vaginal steaming, which is an ancient practice. Basically, you make a strong tea with some herbs, and there are herbs indicated for different things as well. And then you make a "little tent" to contain the vapor. I felt it is really cleansing* (Ana, 29, 27/10/2016).

Moreover, she told us of her efforts to change her diet and difficulties in relation to physical exercise, which she attributes to depression, which she has also sought to overcome with therapy.


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DOI: 10.1590/1806-9584-2021v29n161724

The solution she found most accessible, at this time of life, is supplementation, about which she did research on the internet with the help of a group of moderators with which she dialogs on Telegram. In her words:

> *I also was very tired and began eliminating gluten, because I realized that it could be the cause.* [...] *Yes, I am sedentary, and this may be one of the causes. But dam, when you have no energy, it is very difficult to exercise. I am also depressed, doing therapy, seeking personal growth.* [...] *But ok, physical exercise won't happen, so what can it be? I can have some kind of deficiency. Geraldine* [Matus] *isn't a big fan of supplements. But since I was so bad, "I need something", I said: "OK, I'll try this and if it doesn't work, I'll stop. And in the worst hypothesis, it is only one, right? It's just magnesium, just mineral."* [...] *And I have that story of depression, and depression is also associated to Vitamin D deficiency, and Vitamin D we get more from the sun. And we just went through winter here, and I always use long sleeves,* [I spend] *lots of time at home. So I did it mainly on my own. One shouldn't do that, but I did my reading on the internet. Based on everything I read, I think that it is safe and I did it* (Ana, 29, 27/10/2016).

It can be seen, in these statements, that there is an emphasis, above all on a change in diet and on the use of "natural medicine", vitamin supplements and herbs. The practice of physical exercise appears to be important, but it appears to be a final option, given the relative difficulty compared to other options more easily inserted in the routine. Therapeutic practices, such as psychotherapy and yoga, also appear, but there are not many words about their direct effects on the menstrual cycles or on health.

## Biomedicalization, Production of Subjectivities and Gender

In this final section we would like to discuss how the new fertility awareness practices described above are associated to broader processes, characterized by the literature as: biomedicalization, improvement and production of subjectivities. And, finally, we intend to articulate this to gender apparatus, returning to this central focus of the article. The first approximation takes place in relation to that which Adele Clarke and colleagues (2010) have been calling "biomedicalization" referring to the changes in the constitution and practices of biomedicine that have taken place since the mid 1980s, led by the United States. These changes are related, above all, to scientific innovations and are not limited to biomedicine in a strict sense. They concern five main processes, described by the authors as follows:

> 1 a new biopolitical economy of medicine, health, illness, living, and dying which forms an increasingly dense and elaborate arena in which biomedical knowledges, technologies, services, and capital are ever more co-constituted; 2 a new and intensifying focus on health (in addition to illness, disease, injury), on optimization and enhancement by technoscientific means, and on the elaboration of risk and surveillance at individual, niche group, and population levels; 3 the technoscientization of biomedical practices where interventions for treatment and enhancement are progressively more reliant on sciences and technologies, are conceived in those very terms, and are ever more promptly applied; 4 transformations of biomedical knowledge production, information management, distribution, and consumption; and 5 transformations of bodies and the production of new individual, collective, and population (or niche group) level technoscientific identities" (CLARKE *et al.*, 2010, p. 1-2,).

It would be according to this new "regime of truth" associated to biomedicalization that health comes to be understood as a conquest for which the individual is responsible, which should be sought through consumption of available information and resources, practices of care and monitoring of oneself, attitudes of prevention of illnesses and improvement of health. The focus is no longer on disease and is aimed at changes in behavior and lifestyle. The shifts between notions of health, well-being and quality of life reveal this. Therefore, it no longer involves focusing on disease or on ill bodies, but on improving what can be improved, by means of a simultaneous transformation of body and self. For Clarke et al (2010), the improvement is related to interventions that go beyond corrections of medical problems, in the direction of ideas of individual improvement, marked by the belief that it is always possible to improve and by a focus on relations of consumption.

In this articulation around fertility awareness, we perceive an ambiguous relationship, although one marked by biomedicalization. It involves an intensified focus on health that does not involve cure for pathologized bodies, but an emphasis on improvement. This is evident when we find that the "problems" identified in the menstrual cycles are not treated as diseases. They are only starting points in the search for resources that seek the improvement of the menstrual cycle and, thus, of different dimensions of the lives of practitioners. Many of these resources involve technoscience, and range from software applications, monitoring of the cycle, thermometers and pharmaceutical resources like vitamin or herbal supplements. In addition, resources associated to traditional practices are also valued, like baths with teas, and even use of the English language to name the practice, the "vaginal steaming" mentioned by Ana – can make a difference in its presentation. The affirmation of the centrality of science, however, is explicit in the constant emphasis on "data" and "evidence".

The menstrual cycle - in its intimate link with both specific hormonal variations and to ovulation and bleeding linked to it – is read as "natural" and inserted in a dynamic where this absence is a sign of a lack of health. However, its presence is still not sufficently revealed in practice, given that it is still possible to make it healthier, improve it. This is justified in terms of a supposed prior "nature" that was transformed by the current lifestyle, which is associated to capitalism, sexism, and biomedicine, and that would come to have as one of its expressions the current "indiscriminate consumption" of hormonal contraception. This perspective contrasts with that described by Manica (2011) in relation to biomedical investments for the "suppression of menstruation" which produces another quality of life for women.

In this sense, the interlocutors consider it necessary to make an effort to "fix" the consequences of this improper human intervention, based on another form of intervention, which revives a "natural" orientation and is therefore healthier for the body. Thus, it is through supposed greater proximity to nature, in contrast to the artificiality of biomedicine, that the use of pharmaceutical resources based on herbs and vitamin supplements is legitimated, while the use of hormones is criticized. Ivone de Sá's (2012) research about how the phyto-therapeutic alternatives to hormonal repositioning therapy became established, and how the category of "nature" is operated in this configuration, also helps us to think about the use of "natural remedies", their success among the critics of biomedicine and their insertion in the pharmaceutical industry. *Vitex*, the herb used by Talita when she sought ovulation, is one of the remedies that substitute hormonal therapy and which Sá (2012) examines. The association of "nature" to an absence of risks appears to be present in both cases. Another indication of the relationship between fertility awareness and biomedicalization concerns the forms of communication and exchange of information between the participants, which are mediated by fruits of technoscientific development, such as platforms like Facebook and Telegram. The materials that they access are also often collected in downloads, and the search for scientific articles, blogs or the purchase of supplements is made on platforms dependent on the internet. Therefore, this articulation is also an effect of a change in distribution, administration and consumption of information that is not submitted to well-marked geographic frontiers, and that allows or facilitates certain types of encounters.

These articulations thus generate new subjectivities, or, in the words of Clarke et al (2010), technoscientific identities. At the same time that investments are made in corporal and lifestyle changes, conceptions of identity are positively associated to them: they involve being autonomous, empowered, feminist, healthy, scientifically informed women who are closer to nature, who are individually and collectively responsible for a search for improvement. In addition, the identification and resolution of problems found in the menstrual cycles are individualized, or in the words of Clarke et al (2010), "customized". This "customization" associated to improvement is defined by the authors as a process in which there is an additional factor related to the practices of medicalization, which were guided by desires for normalization by means of homogenization: the practices of stratified biomedicalization realize desires for personalized differentiation (CLARKE *et al.*, 2003, p. 181). Thus, an effort is made to realize individual projects using customized resources, which in the specific case treated here, include the production of individual graphs for monitoring the "problems" as well as individualized "solutions", measuring temperature and daily analysis of cervical mucous, as well as sharing of this information with other practitioners and constant consumption of information to support better health.

In addition, Clarke et al. (2010) affirm, "The biomedical governmentality to 'know thyself' that is associated with such bodily techniques often relies on a neo-liberal consumer discourse that promotes being 'proactive' and 'taking charge' of one's health" (CLARKE *et al.*, 2003, p. 181). In this configuration around fertility awareness, this "taking control of one's own health" assumes the form of a feminist demand, given that it is understood to be an alternative behavior in relation to the biomedical knowledge and intervention considered patriarchal. It is an movement inherited, in a certain sense, from the feminist self-help movement that began in the United States in the late 1960s and that spread through other parts of the world, including Brazil (Michelle MURPHY, 2004; 2012; Bruna KLÖPPEL, 2017).

Thus, these new "technoscientific identities", that is, these new subjectivities characterized by specific relations with the technosciences, are not totally new identities. The connection between feminism, health, self-monitoring and autonomy were already present in the feminist self-help movement. However, biomedical governmentality modifies the forms of access and performance related to these identities and includes new elements. The consolidation, even of the need for daily monitoring of the individual's menstrual cycle, using technoscientific artefacts, relates to an approximation of this governmentality. In addition, the focus on improvement, the central importance of hormones, the use of resources such as herbal medicines and supplements, the use of artefacts such as thermometers and smart phone apps, as well as protagonism on Facebook and the internet, are elements of the configuration associated to fertility awareness.

It can thus be said that these "techno-scientific identities" are related, on one hand, to collective feminist projects for "empowerment" and valorization of the body associated primarily to


Revista Estudos Feministas, Florianópolis, 29(1): e61724
DOI: 10.1590/1806-9584-2021v29n161724

the female, and on the other, to establishing individual responsibility for health and improvement, which is present in the search to become "healthier", "more fertile" and "more natural", which would also come to provide increased well-being" and "quality of life".

To conclude, it is important to return to Butler's (2010) inspiring argument that we mentioned at the beginning of the article and that allows us to understand how the configuration studied reenacts gender norms. Understanding the practices of fertility awareness as processes of materialization, we will now trace some of the associations that are stabilized in these processes and that refer to gender apparatus, whether in the sense of reinforcing or reconfiguring it.

On one hand, the agencyings around fertility awareness continue to locate sex, linked to nature, as a given raw material and although it can be modified, it belongs to a previous and "original" domain. In this domain, the menstrual cycle, estrogen and progesterone are the protagonists. In this way, by reproducing a differentiation between sex and gender, they wind up "naturalizing" the sexual and hormonal difference, in binary terms, oriented to reproduction. In this sense, they thus reinforce the gender apparatus as understood by Butler (2010). Moreover, the hierarchization, marked by the notions of "health", "well-being" and "quality of life", of the practices associated to nature and the practices understood to be more artificial, winds up opening space for a delegitimation or inferiorization of other bodies and identities, which are farther from this "nature" read as "healthier", mainly in a framework that establishes individual responsibility in which health is a moral attribute.

In contrast, however, there is a recognition of a possibility of a discontinuity between sex, gender, sexual practice and desire, which reformulates the gender apparatus Butler described. The orientation of this nature (linked to menstrual cycles) is associated more to health than to "womanhood"[9] or reproduction, with the latter being performed in connection to the domain of gender (in contrast to sex) and the social (in contrast to the natural). The reaffirmation of this hegemonic dichotomy that is constitutive of the "modern West" is thus key. Finally, it is possible to consider the politicalization of health and the menstrual cycle, considering the reconfiguration of gender relations, to make them more egalitarian, as an attempt to modify the effects of the gender apparatus – the tendency towards hierarchization between men (doctors) and women (patients) – without challenging the "naturalization" of sexual difference and the binary structure at the level of sex.

And in relation to this "naturalization", it is necessary to emphasize what the fertility awareness practices reformulate in relation to hormones, which constitutes the most recent focus of biologicalization or "substantialization" of sexual difference (ROHDEN, 2008; 2017). They represent another chapter in the historic debates and recent controversies related to the use of hormones for different purposes (Nelly OUDSHOORN, 1994; Celia ROBERTS, 2007; FARO, 2016). If on one hand, they are linked to a given and prior nature, and to health and well-being, they are also significantly remodeled. Hormones historically associated to "female bodies" such as estrogen, are articulated here to notions of libido, creativity, productivity and increased energy, which are usually related to testosterone and masculinity in biomedicine. However, the moments of the menstrual cycle characterized by the absence or decrease in estrogen are performed as lacking something in relation to these attributes, which are framed as being constantly present in "male bodies", defined as "always fertile". The attributes associated to the absence of estrogen are, in contrast, affirmed to be moments needed for reflection and self-care, and there is a questioning of the value attributed to a productivity that is necessarily in constant ascension.

Meanwhile, there is no questioning of how this "hormonal nature" determines behavior. In addition, the binary schemes are maintained in the more intimate association of some types of bodies to estrogen and to progesterone, and others to testosterone, at least at the level of a constitutive and primordial "nature". In this sense, for those who practice fertility awareness, and their references to "natural", to the degree to which the consumption of hormones is linked to an artificiality that is contrary to nature, and therefore, less healthy, those bodies and identities that consume them, for whatever reason, would be in contrast to a "healthy life".

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[9] We understand "womanhood" as the ontological status situationally attributed to "being a woman", which we understand is always in dispute.

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**HOW TO CITE THIS ARTICLE ACCORDING TO THE JOURNAL'S NORMS**

KLÖPPEL, Bruna; ROHDEN, Fabíola. "Práticas de percepção da fertilidade entre mulheres jovens". Revista Estudos Feministas, Florianópolis, v. 29, n. 1, e61724, 2021.

**AUTORSHIP CONTRIBUITION**

Bruna Klöppel – contributed to the conception, collection and analysis of data, drafting of the manuscript, editing, discussion of the results and the review.

Fabíola Rohden – contributed with the conception, drafting of the manuscript, editing, discussion of the results and the review.

This article was translated from the original Portuguese by Jeffrey Hoff (jeffhoff@floripa.com.br).

**FINANCIAL SUPPORT**

This study was supported by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – Brazil (CAPES) – Código de Financiamento 001, and the National Council for Scientific and Technological Development (CNPq)

**CONSENT TO USE IMAGE**

Not applicable.

**APPROVAL OF RESEARCH ETHICS COMMITTEE**

Not applicable.

**CONFLICT OF INTERESTS**

Not applicable.



**BACKGROUND**

Received 25/02/2019
Resubmitted 14/02/2020
Approved 09/06/2020