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Efficacy as Safety: Dominant Cultural Assumptions and the Assessment of Contraceptive Risk

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ABSTRACT

Medical and public health associations endorse a contraceptive counseling model that ranks birth control methods by how well they prevent unintended pregnancy. This tiered model provides information about all forms of birth control but primarily recommends long-acting reversible contraceptives (LARC) because they eliminate user error and increase continuation. Our critical discourse analysis of gynecology textbooks and medical recommendations examines how gendered and neoliberal ideas influence risk assessments underlying this tiered contraceptive counseling model. Specifically, we explore how embodied, lifestyle, and medical risks are constructed to prioritize contraceptive failure over adverse side effects and reproductive autonomy. We find that the tiered model's focus on contraceptive failure is justified by a discourse that speciously conflates distinct characteristics of pharmaceuticals: *efficacy* (intended effect) and *safety* (lack of unintended adverse outcomes). Efficacy discourse, which filters all logic through the lens of intended effect, magnifies lifestyle and embodied risks over medical risks by constructing two biased risk assessments. The first risk assessment defines ovulation, menstruation, and pregnancy as hazardous (i.e., embodied risk); the second insinuates that cisgender women who do not engage in contraceptive self-management are burdensome to society (i.e., lifestyle risk). Combined, these assessments downplay side effects (i.e., medical risk), suggesting that LARC and other pharma-contraceptives are worth the risk because they protect cisgender women from their fertile bodies, and guard society against unintended pregnancy. Through this process, ranking birth control methods by failure rates rather than by side effects or reproductive autonomy becomes logical as efficacy is equated with safety for both cisgender women and society. Our analysis reveals how technoscientific solutions are promoted to address social problems, and how informed contraceptive choice is diminished when pharma-

contraceptives are framed as the most logical option without cogent descriptions of their associated risks.

Key Words

risk assessment; contraception; unintended pregnancy; critical discourse analysis; gender; neoliberalism, medical textbooks, reproductive justice

INTRODUCTION

Medical and public health associations endorse a contraceptive counseling model that organizes birth control methods into tiers based on typical-use failure rates (Centers for Disease Control and Prevention, 2018) (see Figure 1). While maintaining that healthcare providers should offer information about all forms of family planning, the tiered model recommends long-acting reversible contraceptives (LARC) (e.g., intrauterine devices, implants) because they eliminate "user error" and increase continuation rates. If patients do not select one of these methods, providers discuss second-tier (e.g., pill, shot) and then third-tier (e.g., condoms, fertility awareness) options. Some second- and third-tier methods have low perfect-use failure rates but are often utilized inconsistently (Guttmacher, 2020) (see Figure 2). By organizing methods by typical-use failure rates, this tiered model of contraceptive counseling prioritizes preventing (unintended) pregnancy over other concerns, including adverse side effects and reproductive autonomy.

While recognizing the emancipatory proprieties of modern contraceptives, feminist scholars have also illuminated problems associated with the tiered contraceptive counseling

model, and pharma-contraception more broadly (e.g., Bertotti & Miner, 2019; Geampana, 2016; Gomez et al., 2014; Gubrium et al., 2016; Mann & Grzanka, 2018; Riessman, 1983). For example, cisgender women are exposed to adverse side effects (Geampana, 2019a), expected to be responsible for managing fertility work (Bertotti, 2013; Kimport, 2018), and targeted by coercive campaigns designed to address social problems, such as population growth and poverty (Ross & Solinger, 2017). This dialectic, wherein pharma-contraception can simultaneously enhance and detract from reproductive freedom, is referred to as the contraception paradox (Gomez et al., 2018).

Drawing on post-structural and feminist perspectives, we contribute to this literature by exploring how dominant cultural assumptions inform the logic of the tiered contraceptive counseling model. Analyzing gynecology textbooks and recommendations published by the American College of Obstetricians and Gynecologists (ACOG), we investigate discourses that construct and assess contraceptive risk. Our goal is to illuminate the risk assessments that justify privileging typical-use failure rates over side effects and reproductive autonomy despite evidence of several adverse health outcomes associated with first- and second-tier methods and the sordid histories of reproductive oppression in the United States.

While this paper focuses on the tiered model of contraceptive counseling and its efforts to reduce unintended pregnancy by targeting cisgender women, we acknowledge that contraceptive technologies have differing meanings, implications, and risks for individuals across gender identities. People use contraception for various reasons beyond pregnancy prevention, and not all people who can become pregnant identify as women. However, for the sake of consistency with our sources, we usethe term “women” to refer to cisgender (i.e., non-transgender) women

throughout this article because that is the language used in the texts we analyzed (see Lampe et al., 2019, for additional discussion of transgender reproduction).

Risk Discourses and Risk Assessments

Risk is the concept "widely used to explain deviations from the norm, misfortune, and frightening events" (Lupton, 2013, p. 3). Social scientists have identified several categories of risk, including embodied, lifestyle and medical risks. Embodied risks, such as cancer cells or mutated genes, are "risks identified as characteristics of… bodies" (Kavanagh & Broom, 1998, p. 437). Lifestyle risks, such as smoking or sedentariness, are embedded in people's behavior, decisions and priorities, and medical risks are the consequence of medical procedures, treatments or pharmaceuticals (Lupton, 2013). How we understand and address these embodied, lifestyle, and medical risks is influenced by prevailing risk discourses – i.e., "bounded bod[ies] of knowledge and associated practices" that give "meaning to reality via words or imagery" (Lupton, 2013, p. 23).

Mary Douglas's (1966) groundbreaking work introduced the notion that risk is a culturally imbued social construct. Individuals conceptualize what is dangerous or safe through the lenses of their social, cultural, and historical contexts. Modern risk discourses assume that "something can be done to prevent misfortune" and that it is each individual's responsibility to do so (Lupton, 2013, p. 3; see also Douglas & Wildavsky, 1982). For example, individuals should endeavor to control embodied risks through regular medical screenings, such as Pap smears (Casper & Clarke, 1998). Similarly, individuals have the responsibility to monitor their diet to avoid lifestyle risks like obesity "for the sake of his or her own health as well as the greater good of society" (Lupton, 1993, p. 429).

Foucault (1991) theorized this mode of power as "governmentality" – the diffuse regulation of populations by compelling subjects to engage in voluntary self-discipline. Neoliberalism is a key site in the production of governmentality because it asserts that, while individuals may be free to make their own choices, each person is solely responsible for the consequences of their decisions (Grzanka et al., 2016). This logic renders the structural influences on people's choices and outcomes invisible, while also insisting that individual responsibility is the solution to social, economic, and health inequalities. In the context of healthcare in the United States, governmentality entails the construction of experts endowed with authority to define what is healthy and prescribe seemingly commonsense health behaviors for individuals to reduce risk of adverse outcomes (Barcelos, 2014). These neoliberal risk-reduction recommendations emerge from technoscientific risk assessment models (see Clarke et al., 2003 for more on technoscience).

Medicine embraces a technoscientific understanding of risk – i.e., that risk is an "objective fact" that can be "identified through scientific measurement" (Lupton, 2013, p. 28). To manage risks, medicine employs assessment models that "compare the risks of different choices" and calculate "the probabilities of a hazardous event" (Nelkin, 1989, p. 99). These "rational" risk assessments purportedly weigh all relevant factors in an unbiased scientific manner to objectively estimate costs and benefits (Lupton, 2013). However, abundant evidence suggests that health-related risk assessments are frequently "imbalanced" (Busfield, 2010) by various factors, including cultural biases (Douglas & Wildavsky, 1982).

Imbalanced Assessment of Embodied Risk

Feminist scholars have illuminated how dominant gendered assumptions imbue science and medicine to frame female reproductive processes as flawed, diseased, and/or unimportant. Menstruation has been described as production "gone awry" (Martin, 2001, p. 46, see also Figert, 1996), menopause has been framed as deficiency (Bell, 1987), and pregnancy is considered inherently uncertain, dangerous, and in need of constant medical intervention (Waggoner, 2017). By contrast, male reproductive physiology is described in uniformly positive terms (Metoyer & Rust, 2011; Moore, 2007). These gendered ideas about sexed bodies constitute discursive fields that structure how people interpret the "reality" of reproduction and attendant biosocial processes, which overwhelmingly construct female bodies as sites of risk in need of medical management (Kavanagh & Broom, 1998).

Racial differences have also long been considered a source of physical and mental superiority/inferiority in science and medicine. In 1896, Frederick Hoffman articulated the hypothesis that the "colored population" would eventually face "extermination" because their "inferior vital capacity" and "sexual immorality" would lead to "a diminished power of vital resistance among the young" (pp. 310-312). This white supremacist ideology informed the eugenics movement, which promoted the sterilization of "imbeciles", "degeneratives," and other socially undesirable groups as a means of racial cleansing (Ross & Solinger, 2017). In both cases, reproduction by people of color was defined as risky to themselves and to society. These assessments were influenced by the assumption that "race and heredity," not "the conditions of life," explained "the superiority of one race over another" (Hoffman 1896, p. iv 312).

Imbalanced Assessment of Medical Risk

Evidence suggests that the assessment of medical risk has also been informed by dominant cultural assumptions. For example, racist and neocolonial ideas have long influenced decisions to test pharmaceuticals outside the mainland United States. In the 1950s, concerns about overpopulation and poverty in Puerto Rico made the island seem an ideal "social laboratory" for testing the oral contraceptive pill. Researchers ignored widespread and severe adverse effects, including a number of deaths, in favor of pursuing scientific outcomes (Briggs, 2002). By comparison, the significant value placed on men's embodied experiences has limited testing of male hormonal contraceptives. Since the 1950s, trials on male subjects have consistently been terminated due to side effects commonly experienced by female users, such as acne, mood changes, and pain at injection site (Oudshoorn, 2003). These disparities in contraceptive testing illustrate how racial and gendered assumptions have created an imbalanced assessment of the weight and significance of medical risks, defining those experienced by women and other marginalized groups as essentially unimportant (van Kammen & Oudshoorn, 2002).

Imbalanced Assessment of Lifestyle Risk

Neoliberal, racial and gendered assumptions influence the assessment of lifestyle risks by defining marginalized groups as categorically "at-risk." As Lupton (2013, 156) notes, "the 'at risk' label tends either to position members…as particularly vulnerable…or as particularly dangerous to themselves or others." A population defined as both vulnerable *and* dangerous are women who are "at risk" of unintended pregnancy, especially young, low-income women of color (Barcelos, 2014). Preventing unintended pregnancy by encouraging women to use LARC is a widely accepted strategy for improving women's lives, reducing poverty, and limiting government expenditures (Finer & Sonfield, 2013). Aware of past abuses, such as the coercive

use of contraceptive implants during the 1990s (Roberts, 1997), reproductive justice scholars have challenged this predominant understanding of unintended pregnancy, especially the neoliberal orientation underlying efforts to quell it through increased medical surveillance (Gubrium et al., 2016; Mann & Grzanka, 2018).

Campaigns addressing lifestyle risks, like unintended pregnancy, generally ignore social or cultural context and hold individuals responsible for risk avoidance. Women are expected to police their own behavior in accordance with expert medical advice to maximize life opportunities, minimize the risks to which they are exposed, and eliminate their "dependence" on the state (Fraser & Gordon, 1994). This neoliberal perspective makes selecting LARC appear to be a free choice, but women who decline are assumed to be misguided or irresponsible (Stevens, 2018). Framing women unwilling to enact prescribed "risk-avoiding behavior" as irrational (Lupton, 1993, p. 122) justifies the need for professional intervention, paradoxically offering women "agency without choice" (Mann & Grzanka, 2018).

Based on evidence that dominant gendered and neoliberal assumptions influence the construction and assessment of risk, we explore whether this process might be at play with the tiered model of contraceptive counseling by analyzing discourses presented in gynecology textbooks and ACOG documents. We find that the prioritization of typical-use failure rates over concerns about side effects and reproductive autonomy is justified by a discourse that speciously conflates two distinct characteristics of pharmaceuticals: *efficacy* (intended effect) and *safety* (lack of unintended adverse outcomes) (see Higgins et al., 2020; Kakaiya, 2017; Trussell, 2014). Efficacy discourse, which filters all logic through the lens of intended effect, magnifies lifestyle and embodied risks over medical risks by constructing two "imbalanced" (Busfield, 2010) risk assessments. The first risk assessment defines ovulation, menstruation, and pregnancy as

unhealthy for women (i.e., embodied risk); the second claims that women who do not engage in contraceptive self-management are a burden to society (i.e., lifestyle risk). Combined, these assessments downplay side effects (i.e., medical risk), suggesting pharma-contraceptives are worth the risk because they solve social and health problems purportedly caused by women's bodies and behavior. Through this process, ranking birth control methods by typical-use failure rates becomes logical as efficacy is equated with safety for both women and society.

METHODS

To understand the logic behind a contraceptive counseling approach that prioritizes typical-use failure rates over side effects and reproductive autonomy, we asked the following questions: How does efficacy discourse construct, assess and compare embodied, lifestyle and medical risks? How might dominant cultural assumptions influence this evaluation?

Data and Sample

Because our goal was to analyze resources that medical students and practicing physicians reference, we chose two sources of data that represent widely-accepted gynecological knowledge: ACOG publications and popular gynecology textbooks. ACOG is the largest professional organization of gynecologists and obstetricians, with over 58,000 members. One of its primary activities includes producing educational materials. We analyzed all fifteen publications on the ACOG website dedicated to clinical guidance for contraceptives, including eleven *Committee Opinions*, three *Practice Bulletins*, and one *Practice Advisory*.

Medical textbooks "represent the selection, reproduction and condensing of medical knowledge" (MacDonald, 2002, p. 452). Our selection of gynecology textbooks includes ten titles used at fifteen US medical schools from across the nation, generated from a systematic random sample of schools. We contacted the schools' bookstores to develop a list of titles that were used in classes and as reference material, and then selected the most recurring titles accessible through inter-library loan. All but two texts in our sample also appeared on Google's bestselling list of gynecology textbooks. Our analysis focused on the contraception chapters of these textbooks. See the Appendix for a list of textbooks and ACOG documents in our sample.

Analysis

We used critical discourse analysis (CDA) to analyze our sample of textbooks and ACOG documents. This approach "examines language and its usages to understand their social and political import" (Park, 2005, p. 11). Specifically, CDA allows for the investigation of the ways that language produces, maintains and resists systems of power as reflective of cultural attitudes and beliefs. To uncover how language was mobilized by our texts, we began inductively, looking for various "sensitizing concepts" (e.g., risky body) to serve as "points of departure" for our general coding scheme (Charmaz, 2014). We then analyzed all discussion dedicated to assessing the various contraceptive methods, including who would/would not be good candidates for specific methods, side effects, health benefits, and risk comparisons. We searched for recurring patterns, negative cases, and omissions. After having unearthed several gendered and neoliberal assumptions, we ultimately focused our analysis on how those assumptions are leveraged in the construction and assessment of embodied, lifestyle, and medical risks. Our goal was to uncover the meaning-making processes that shape the now-dominant tiered contraceptive counseling approach in the United States.

Our methodology drew heavily on two "intensification" techniques employed by Emily Martin, which "expose and dislodge" powerful discourses (Tomlinson, 1999). First, we endeavored to "underscore" how efficacy discourse is "shaped" by dominant cultural assumptions. We paid particular attention to the promulgation of rationalized individualism, governmentality, and racial and gendered notions of deficiency. Second, we "foregrounded" and "intensified" the "negative terminology that permeates discussions of women's reproductive physiology" and behavior (Tomlinson, 1999, p. 11). We illuminated anachronistic ideas and extracted damaging language used to describe ovulation, menstruation, pregnancy, and women's contraceptive decisions, occasionally referencing historical sources of such ideas. These strategies uncover otherwise hidden meanings embedded in efficacy discourse and identify what Clarke et al. (2005) refer to as "sites of silence" in gynecological discourse.

CDA calls for researchers to reject assumptions of neutrality and to identify their positions, especially those that are part of a political project (Park, 2005). We position ourselves and this analysis in the context of the contraceptive paradox and conversations about reproductive justice versus reproductive rights. It is well-established that mainstream reproductive rights movements have long focused on ensuring women's individual rights to contraception, while overlooking how socially marginalized women's reproduction has been devalued and curtailed through state-sanctioned efforts and political discourse (Gomez et al., 2018; Luna, 2009). The reproductive justice movement has challenged the neoliberalism that undergirds reproductive rights discourse and has sought to expand the reproductive autonomy of marginalized groups (Ross & Solinger, 2017). It is in the spirit of this reproductive justice framework that our analysis is grounded.

FINDINGS

Our findings suggest that efficacy discourse justifies the tiered contraceptive counseling model by constructing two sets of imbalanced risk assessments to emphasize the severity of lifestyle and embodied risks and deemphasize the significance of medical risks. First, efficacy discourse draws on longstanding notions of the female body as risky to define ovulation, menstruation, and pregnancy as unhealthy for women. Second, efficacy discourse employs neoliberal ideas to frame women who do not engage in rationalized contraceptive self-management as irresponsible, describing their "risky" behavior as negatively affecting society. Having established the gravity of these embodied and lifestyle risks, efficacy discourse then downplays pharma-contraceptive side effects by suggesting that they are worth the risk in order to solve social and health problems supposedly caused by women's risky bodies and behavior. These imbalanced assessments interpret data selectively, employ illogical comparisons, and overlook several relevant factors, including embodied benefits and women's interpretations of side effects.

Imbalanced Assessment of Embodied Risk vs Medical Risk

Tapping into depictions of women's bodies as unruly, unpredictable and diseased (Martin, 2001), efficacy discourse defines embodied risks as more hazardous to women's health than medical risks associated with pharma-contraceptives. As is common throughout medical discourse, menstruation is framed in terms of "disorder", "deficiency", and "abnormalities", and pregnancy is described as a pathological state associated with "complications" and maladies like blood clots. The textbooks we analyzed all contain discourse that positions pregnancy as risky, including the following statements:

…the health risks posed by pregnancy and childbirth. (Hacker, p. 327)

> …exposure to the risk of pregnancy… (Edmonds, p. 939)

> During the first few postpartum weeks, the risk of venous thromboembolism (VTE; deep vein thromboses and pulmonary embolism) is greatly elevated in all women. (Schuiling, p. 227)

These descriptions of women being "exposed to" risks "posed by" pregnancy mirror the separation of the self and body described by Emily Martin (2001) suggesting women are vulnerable to their risky bodies. From this perspective, the mere act of getting pregnant is transformed into a risk, with women frequently described as "at risk" of pregnancy.

Another central component of efficacy discourse, which remains largely unexamined in the social scientific literature, is the medical description of ovulation as the *cause* of numerous adverse effects, including ovulatory and menstrual "disorders", endometriosis, ovarian cysts, and ovarian cancer. This assertion of ovulatory perniciousness stems from the widely-accepted "incessant ovulation" hypothesis, which argues that "ovulation *traumatises* the ovarian surface, because rupture of the ovulating follicle damages the OSE [ovarian surface epithelium]… Over time, this process of continuous *damage* and OSE proliferation to repair the *wound*, places *strain* on the OSE, increasing the chance of *errors* occurring during replication" (Fleming et al., 2006, p. 9) [emphasis added]. Arising in the early 1970s, the incessant ovulation hypothesis was based on the interpretation that women's fertility is wasteful and careless:

> Compared with other mammals, the human female appears to be very extravagant with her ova. Ovulatory cycles are almost continuous from puberty to the menopause… Other mammals are more economical… Ovulations are limited to the breeding season… [and] the reproductive potential is exercised to the full, allowing adequate physiological non-

> ovulatory rest-periods…. In patients denied the ovarian physiological rest periods afforded by pregnancies-nuns and unmarried and infertile women-a higher incidence of ovarian cancer has been reported…. The hypothesis that the extravagant and mostly purposeless ovulations in the human female may play a contributing role in neoplasia of the surface epithelium of the ovary deserves further consideration. (Fathalla, 1971, p. 163)

This thesis presumes that the only physiological purpose of ovulation is reproduction. By not becoming pregnant as frequently as other animals, women waste their "reproductive potential", thereby rendering ovulation "purposeless". This depiction of being denied much-needed "rest periods" frames women as vulnerable to their incessantly ovulating bodies.

Disciplining Bodies, Protecting Women

Building upon the notion that women are vulnerable to their unruly and diseased reproductive processes, efficacy discourse frames pharma-contraceptives as the antidote that can protect women. Emphasizing the need to manage menstruation and its related symptoms, efficacy discourse describes pharma-contraceptive "regimens" that "suppress", "inhibit", "blockade", and "regulate" ovulatory and menstrual processes:

> These extended or long-cycle regimens (such as Seasonale and Seasonique) provide continued suppression of ovulation and decreased menstrual-related symptoms… (Callahan, p. 389)

> DMPA [depot medroxyprogesterone acetate] also reduces the incidence of primary dysmenorrhea, symptoms of endometriosis, ovulation pain, and functional ovarian cysts because it inhibits ovulation. (Lobo, p. 246)

> The blockade of ovulation, follicular rupture, and ovarian production of steroids may explain the lesser incidence of ovarian cancer among CHC [combined hormonal contraceptive] users. (Curtis, p. 6)

The medical terms "escape ovulation" and "breakthrough bleeding" refer to ovulation or bleeding that happens *in spite of* hormonal contraception. Efficacy discourse frames these processes of ovulation and menstruation as especially intractable, further justifying the need for powerful substances to "suppress", "control", and "stabilize" them:

> Moreover, hypothalamic-pituitary-ovarian suppression is greater with continuous use [CHCs] and reduces the possibility of escape ovulation... (Hoffman, p. 123)

> …estrogen also improves cycle control by stabilizing the endometrium and resulting in more regular cycles, allows for less breakthrough bleeding… (Casanova, p. 232)

This value and priority placed on disciplining women's unruly bodies ultimately transforms pharma-contraceptives into "treatments" and "therapy" that can save women from embodied risks:

> The levonorgestrel intrauterine system (LNG-IUS)… is the most effective medical therapy for heavy menstrual bleeding because it induces high rates of amenorrhea… (Hacker, p. 331)

> COCs can also be an effective treatment for mittelschmerz, dysmenorrhea, endometriosis, premenstrual symptoms, and the vasomotor symptoms of perimenopause. (Schuiling, p. 231)

Invoking the damsel in distress image (Martin 1991), efficacy discourse also describes pharma-contraceptives as "protecting" women from the threat of pregnancy:

> Implants provide highly effective protection against pregnancy… (Bienstock, p. 427)

By framing women as vulnerable to their reproductive bodies, efficacy discourse transforms ovulation, menstruation and pregnancy into serious embodied risks in need of medical intervention, despite documented risks associated with pharma-contraceptives.

While efficacy discourse acknowledges adverse side effects of pharma-contraceptives, the magnitude of these medical risks is muted through their comparison with embodied risks. Specifically, efficacy discourse frames pregnancy and the postpartum period as riskier than pharma-contraceptives (see also Geampana, 2016; 2019a):

> There is no method of contraception that a clinician would prescribe to a woman that is as hazardous to her health as pregnancy itself. (Hacker, p. 328)

> The small risks associated with contraception for most women are dwarfed by the health risks of unintended pregnancy. (Schuiling, p. 210)

To substantiate this point, texts frequently draw on examples of venous thromboembolism (VTE), or blood clotting, a known adverse effect of hormonal contraceptives:

> Although combined oral contraceptives increase the risk of VTE, they offer significant protection against pregnancy, a condition associated with a substantially higher risk of thrombosis roughly twofold higher than that observed with OCs. (Lobo, p. 248)

Efficacy discourse also emphasizes the risk of maternal mortality posed by pregnancy to minimize evidence that pharma-contraceptives expose women to serious medical risks:

> The small increased risk of breast cancer identified in this study needs to be interpreted in the context of the benefits of hormonal contraceptive use… In 2015, the maternal mortality rate in the United States was 26.4 deaths per 100,000 women, which is double the risk of developing invasive breast cancer (13 additional breast cancers per 100,000 users) found among women in the current study who used hormonal contraception. (Practice Advisory, p. 1)

Efficacy discourse defines the adverse effects associated with pharma-contraceptives as worth-the-risk by framing these medical risks as less serious than the embodied risks posed by pregnancy.

Overlooked Factors and Illogical Comparisons

This assessment that emphasizes the severity of embodied risk while minimizing the importance of medical risk is imbalanced in three ways. First, it overlooks health benefits associated with pregnancy and breastfeeding. While efficacy discourse emphasizes health benefits resulting from pharma-contraceptive manipulation of ovulation and menstruation, it neglects to acknowledge that pregnancy and breastfeeding provide similar “protection”. Texts

mention that breastfeeding suppresses ovulation and produces amenorrhea, but do not connect these processes to the associated health benefits:

> After delivery, the restoration of ovulation is delayed because of a breastfeeding-induced hypothalamic suppression of ovulation… (Callahan, pp. 380-381)

> [Breastfeeding] results in a condition of amenorrhea and anovulation. (DeCherney, p. 929)

Medical literature widely accepts that breastfeeding has many positive maternal health effects, including postpartum weight loss, and decreased incidence of premenopausal breast cancer, ovarian cancer, myocardial infarction, and type 2 diabetes (Schindler, 2011). However, only two texts in our sample briefly mention maternal health benefits associated with breastfeeding.

In addition to the health benefits afforded by breastfeeding, pregnancy itself has been found to "protect" against several conditions, including dysmenorrhea (Ju et al., 2013), ovarian cancer (Schindler, 2011), uterine fibroids (Laughlin et al., 2011), endometrial cancer (Sponholtz et al., 2017), and endometriosis (Tu et al., 2014). While our texts describe how pharma-contraceptives ameliorate each of these conditions, they never mention the similar positive effects of pregnancy.

Second, the assessment that embodied risks matter more than medical risks does not consider how women may feel about the adverse effects of pharma-contraceptives or the lack thereof offered by non-pharma methods. "Minor" side effects associated with pharma-contraceptives, such as nausea or headaches, are described as unimportant, either because they are temporary and/or mild in their impact:

> Many women also complain of nausea, headaches, breakthrough bleeding, and weight gain associated with OCP use. Most of these symptoms are generally mild and transient. (Callahan, p. 391)

or because they are merely a matter of mistaken perception:

> There has long been concern about weight gain with DMPA. In many studies, this weight gain has not proven significant and may reflect overall weight change with age …. (Bienstock, p. 11)

> …counseling women that they might have side effects such as headaches, nausea, breast pain, and mood changes may be unethical. The prevalence of these nonspecific symptoms is high in the general population…If women are told to expect troublesome side effects, these symptoms may occur simply because of the power of suggestion. Given that high-quality evidence indicates that the frequency of nonspecific side effects is no greater with COCs than with inert pills, optimistic counseling should be the norm. (Schuiling, p. 231)

Not only are women's experiences disregarded in favor of scientific authority, but medical risk is transformed into embodied and lifestyle risk by implying that her aging body causes obesity and her naïveté fabricates side effects. As such, providers' ethical duty is defined as protecting women by censoring information and actively managing what counts as real risk.

Similarly, this risk assessment does not acknowledge the significance of the *lack* of side effects associated with non-pharma methods. Indeed, the vast majority of discussion about safety or lack of side effects focuses on pharma-contraceptives, with only a few statements referencing the lack of side effects of non-pharma methods. Of the 71 times that "safe," "no adverse effects,"

or “no side effects” appear in the textbooks, all but three describe pharma-contraceptives. Lactational amenorrhea and diaphragm are each described as “safe” once, fertility awareness is described as having “no side effects” once, and barrier methods are occasionally described as “hormone free” or “nonhormonal” (see also Bertotti & Miner, 2019).

However, there is evidence that side effects matter deeply to many women (Littlejohn, 2012). For some, the absence of adverse side effects is important for their health. Geampana (2019a), for example, found that after trying new-generation pills (Yaz/Yasmin), women expressed preference for the less efficacious third-tier methods because of their lack of side effects. For others, cultural, philosophical, or religious factors influence their partiality for non-pharma methods (Bertotti & Christensen, 2012). For example, evidence suggests that women of color might be more likely to prefer methods that do not change their menstrual cycles (Jackson et al., 2016), even though this group is most likely to be prescribed injectables and implants (Metoyer, 2009), which have that altering effect.

Third, the risk assessment claiming that embodied risks are more severe than medical risks is imbalanced by its reliance on illogical comparisons between pharma-contraceptives and pregnancy:

> …the risk of VTE is low overall and is lower than the risk associated with pregnancy and the postpartum period… (Edmonds, p. 946)

The choice for women receiving contraceptive counseling is not between pharma-contraception or pregnancy, but rather among various birth control methods. As such, rather than evaluating medical risks of pharma-contraceptives against embodied risks of pregnancy/post-partum, the

logical comparison is to evaluate the medical risks of pharma-contraceptives (e.g., blood clots) versus the medical risks of non-pharma methods (e.g., latex allergy).

Instead, efficacy discourse compares the medical risks of pharma-contraceptives to the risk of getting pregnant while using non-pharma methods. This comparison is misleading because it confuses *mechanism of action* with *failure rates*. Mechanism of action is what the method does to prevent pregnancy, such as suppress ovulation or create a barrier between sperm and egg. Failure rates detect how well the method prevents pregnancy. The following table published in one of our textbooks reports pregnancy-related and method-related mortality, and illustrates the illogicality of confounding failure rates with mechanism of action:

Pregnancy-Related or Method-Related Deaths Per 100,000 Fertile Women by Age Group

Method	**15–24 Years**	**25–34 Years**	**35–44 Years**
Pregnancy	5.1	5.5	13.4
Abortion	2.0	1.8	13.4
Intrauterine device	0.2	0.2	0.4
Rhythm, withdrawal	1.3	1.0	1.3
Barrier method	1.0	1.3	2.0
Spermicides	1.8	1.7	2.1
Oral contraceptives	1.1	1.5	1.4
Implants/injectables	0.4	0.6	0.5
Tubal sterilization	1.2	1.1	1.2
Vasectomy	0.1	0.1	0.1

Source: Hoffman, et al. 2016. *Williams Gynecology*. 3rd ed., p. 105.

The mechanism of action of oral contraceptives is associated with serious complications (e.g., VTE). However, by mixing risks associated with mechanism of action and method failure, this table suggests that spermicides (all ages), rhythm/withdrawal (age 15-24), and barrier methods (age 35-44) are deadlier than oral contraceptives. A more judicious comparison would consider

the risk of maternal mortality based on various methods' mechanisms of action (medical risk) separate from the likelihood of death due to a possible pregnancy (embodied risk). Since the mechanisms of action of non-pharma methods are unassociated with mortality or serious morbidity, this shift in comparators would alter the outcomes of the risk assessment.

Imbalanced Assessment of Lifestyle Risk vs Medical Risk

Similar to the comparison between embodied and medical risks, efficacy discourse frames the lifestyle risk of contraceptive noncompliance as more problematic than the medical risks that women may face using first-tier methods. Drawing on the neoliberal imperative that women must in engage in medicalized self-management, efficacy discourse constructs a binary archetype of the responsible woman versus the irresponsible woman:

> Women who use contraceptives consistently and correctly account for only 5% of all unintended pregnancies. In contrast, approximately 18% of women…who use contraceptives but do so inconsistently account for 41% of unintended pregnancies… (Schuiling, p. 209)

> Approximately 40% of unintended pregnancies occur among women who do not desire pregnancy yet do not use a method of contraception. (DeCherney, p. 928)

Responsible women are those who use contraception "consistently and correctly", whereas irresponsible women "do not desire pregnancy yet do not use a method of contraception," or use methods "inconsistently". This failure to cohere with professional advice is assumed to be the result of irrational naïveté, ignorance, or lack of motivation and organizational skills:

> Many women report misconceptions about the risk of conception from unprotected sex as well as the effectiveness and safety of contraceptive options. (Schuiling, p. 210)

> …many women and couples are inadequately motivated to use contraception... (DeCherney, p. 928)

> The progestogen-only injectable… demands the motivation and organizational skills required to receive a repeat dose. (Edmonds, p. 939)

Efficacy discourse ties race, class, and age to the notion of responsibility by emphasizing that adolescents and women from socially disadvantaged groups experience higher rates of unintended pregnancy due to their tendency toward contraceptive noncompliance:

> The unintended pregnancy rate for poor women is more than five times the rate for women in the highest income bracket. Low-income minority women have higher rates of nonuse of contraceptives and are more likely to use less effective reversible methods such as condoms. (Committee Opinion 615, p. 5)

> In 2006–2010, 82% of adolescents at risk of unintended pregnancy were currently using contraception, but only 59% used a highly effective method… (Committee Opinion 735, p. e131)

By invoking these sociodemographic disparities, efficacy discourse implies that adolescents, women of color, and low-income women are especially deficient at using contraception responsibly and insinuates that they are culpable for the social problems supposedly caused by high rates of unintended pregnancy. This use of such binary oppositions has an "othering" effect

(Lupton, 2013, p. 174), contributing to the sense that society is vulnerable to (socially disadvantaged) women's irresponsible decision-making.

Governing Women, Protecting Society

By framing women who are "at risk" of unintended pregnancy as risky, efficacy discourse establishes the need to protect society by inhibiting them from making irrational contraceptive choices. Widespread and rapid uptake of LARC is the preferred way to "eliminate" motivation, compliance, and discontinuation issues:

> [LARC] require a single act of motivation for long-term use, eliminating adherence and user dependence from the effectiveness equation. (Committee Opinion 642, p. 1)

> Intrauterine contraception and implants…are independent of user compliance for effectiveness.... Discontinuation rates are higher for methods which do not require removal by a provider. (Edmonds, p. 939)

By functioning "independent of [the] user", first-tier methods ensure compliance and continuation by erasing women's agency. Positioning women as irresponsible and not likely to return for follow-up appointments, efficacy discourse constructs the logic of widespread employment of the "quick start" method:

> All contraceptive methods (including LARC methods) can be started anytime, including on the day of the visit… (Committee Opinion 699, p. 4)

> The contraceptive rod may be inserted any time before hospital discharge including in the delivery room. (Casanova, p. 238)

> Practitioners can increase LARC … [by] avoiding waits for a follow-up visit after pregnancy… especially in patients at risk for not returning. (Curtis, p. 6)

This emphasis on rapid-uptake of methods that require provider removal implies that women cannot be trusted to make prudent contraceptive decisions. In short, efficacy discourse asserts that women should not have time to change their mind about starting LARC, the chance to decide against a follow-up visit, or the opportunity to discontinue contraception without professional authorization.

Texts also extol the role that short-acting pharma-contraceptives play in reducing unintended pregnancy, arguing that women should have greater access to them (Committee Opinion 788; Committee Opinion 615). However, enthusiasm for these methods is muted by concerns over women's noncompliance:

> This higher [failure] rate [of second-tier methods] likely reflects failure to redose at the appropriate interval. Automated reminder systems for these second-tier methods have been repeatedly shown to have limited efficacy…. When used as intended, these methods are highly effective, however, their efficacy is user dependent. (Hoffman, pp. 105, 118)

Thus, according to efficacy discourse, the downfall of short-acting pharma-contraceptives is that they are "highly user dependent", meaning that women's "failure" to use them "as intended" quash their otherwise low failure rates. Moreover, systems designed to remind women to comply are "ineffective", suggesting that short-acting pharma-contraceptives are not viable options for irresponsible women.

By defining unintended pregnancy as the result of individual deficiency (knowledge, motivation, self-control), contraceptive compliance "becomes viewed as a moral enterprise" (Lupton, 1993, 122). Fears of noncompliance, then, justify widespread efforts to encourage LARC use among risky women as a means of protecting society from their irresponsible behavior, prioritizing lifestyle risk over medical risk. Specifically, efficacy discourse minimizes the relevance of medical risks by framing avoidance of unintended pregnancy as more important than exposing women to adverse health effects associated with pharma-contraceptives:

> In deciding whether a sexually active pubertal girl should use OCs for contraception, the clinician should be more concerned about compliance with the regimen than about possible physiologic harm. (Lobo, p. 243)

> As perhaps expected, the risk of IUC expulsion is slightly higher when placed immediately after abortion or miscarriage, but the advantages of preventing unplanned pregnancies seem to outweigh this. (Hoffman, p. 110)

These examples suggest that managing lifestyle and embodied risks caused by women's irresponsible behavior and risky bodies is more important than exposing them to medical risks associated with pharma-contraceptives.

Neoliberal Influences on Data Selection and Interpretation

The assessment that deems lifestyle risk more hazardous than medical risk is imbalanced because neoliberal assumptions of self-governance influence data selection and interpretation. Specifically, this assessment focuses on certain statistics (typical-use failure rates) to the exclusion of other equally valid statistics (perfect-use failure rates). The tiered model's selective

reliance on typical-use failure rates ignores data suggesting that some third-tier methods can be used very effectively. For example, the perfect-use failure rate of symptothermal periodic abstinence is 0.4, which is lower than the copper IUD (Hacker, p. 328). However, efficacy discourse defines these low perfect-use failure rates as irrelevant by describing women/couples as not "highly motivated" and unable to exert the "self-discipline and control" required for successful use of third-tier methods:

> Periodic abstinence…requires a highly motivated couple willing to learn reproductive physiology... and abstain from intercourse. (Callahan, p. 379)

> Disadvantages [of coitus interruptus] include the need to use this method with every act of intercourse, and the need to exert the self-discipline and control necessary to stop intercourse. (Schuiling, p. 214)

This framing of women/couples' sexual behavior as undisciplined and uncontrollable justifies omitting perfect-use failure rates from the tiered model's equation. Rather than helping patients learn how to use non-pharma methods properly, removing women's agency becomes the commonsense solution. Through this neoliberal orientation, several methods that women could conceivably prefer (e.g., third-tier) are framed as illogical, thereby artificially reducing the number of viable contraceptive options.

Similarly, the assessment that lifestyle risks are worse than medical risks is imbalanced because it assumes that individual-level factors cause macro-level trends. One clear example of this is how efficacy discourse invokes the dominant assumption that unintended pregnancy causes poverty and the resulting governmental expenditures:

> Unintended and unplanned pregnancies have social and economic ramifications… (DeCherney, p. 928)

> U.S. births from unintended pregnancies resulted in approximately $12.5 billion in government expenditures in 2008. (Committee Opinion 615, p. 2)

However, scientific evidence suggests that the causal link between unintended pregnancy and poverty is equivocal; that poverty, rather than unintended pregnancy, is likely the causal factor (Geronimus, 2004). Pregnancies categorized as unintended occur at much higher rates among women who are already poor, and these women have limited opportunity structures for upward mobility regardless of whether they plan their pregnancies (Argys & Averett, 2013). Relatedly, with appropriate comparisons, teen mothers have similar long-term outcomes relative to peers who delay childbearing, suggesting that it is unlikely that delaying childbirth reduces poor teenagers' economic disadvantage (Furstenberg, 2007; Geronimus, 2004). In short, poverty likely influences the myriad social problems credited to unintended pregnancy. However, by emphasizing individual use of first-tier methods as the best way to reduce poverty, efficacy discourse reinforces the neoliberal assumption that individual behavior explains large-scale social problems and that technoscience is the optimal solution.

DISCUSSION

Our analysis of the risk assessments that justify the tiered model of contraceptive counseling shows how cultural biases erroneously equate contraceptive efficacy with safety by framing embodied and lifestyle risks as more hazardous than medical risks. These risk assessments are imbalanced because they rely on dominant gendered and neoliberal assumptions

that ultimately construct women's bodies and behavior as risky and contraceptive technologies as safe.

The first risk assessment constructs ovulation, menstruation and pregnancy as unhealthy and frames pharma-contraceptives as protecting women from these embodied risks. Medical risks associated with pharma-contraceptives are downplayed by the argument that they pose fewer risks than pregnancy. Through this process, the role that contraceptive efficacy plays in manipulating female reproductive processes is equated with safety for women. This assessment is imbalanced because it overlooks health benefits of pregnancy/breastfeeding, ignores how women may feel about side effects, and relies on illogical risk comparisons between pharma-contraceptives versus pregnancy rather than other contraceptives.

The second assessment frames women who are noncompliant with neoliberal expectations of contraceptive self-management as causing social problems and frames pharma-contraceptives as protecting society from this lifestyle risk. Efficacy discourse downplays medical risks using the argument that it is better to expose individuals to adverse contraceptive side effects than to expose society to unintended pregnancy. Through this process, the role that contraceptive efficacy plays in limiting women's reproductive autonomy is equated with ensuring society's safety. This assessment is biased because it denies the utility of third-tier methods with low perfect-use failure rates and illogically blames individuals' perceived reproductive irresponsibility for causing societal-level poverty rates.

These findings have two important implications. First, efficacy discourse diminishes individual reproductive autonomy by framing first-tier methods as the most responsible contraceptive option without clearly and logically outlining the risks associated with these

methods. As such, our analysis corroborates recent findings that the tiered contraceptive counseling model may "implicitly pressure" women toward LARC, especially young women of color (Gomez & Wapman, 2017; see also Mann & Grzanka, 2018).

Second, like other discourses of biomedicalization (Clarke et al., 2003), efficacy discourse emphasizes risks produced by humans and trivializes risks posed by technologies to propose technoscientific solutions for social problems. This neoliberal perspective holds women accountable for managing their "risky" reproductive behavior for the good of society (Bay-Cheng, 2015; Grzanka et al., 2016) while ignoring structural factors that impact women's desires and abilities to have children, including the availability of affordable childcare and maternity leave (Collins, 2019). Similarly, efficacy discourse frames pharma-contraception as the primary solution for pregnancy-related deaths by equating contraceptive efficacy with safety and overlooking the multitude of social forces that influence maternal mortality, such as structural racism and access to healthcare (Altman et al., 2019). Through these processes, efficacy discourse shifts reproductive responsibility away from the collective and toward individual women by disregarding social and political influences on reproductive choices and outcomes.

By illustrating how mainstream models of contraceptive counseling downplay contraceptive risks, our research helps bridge a gap between literatures examining gynecological clinical encounters (Littlejohn & Kimport 2017; Stevens, 2018) and the construction of medical knowledge (Bertotti & Miner, 2019; Geampana, 2019b). Our research also illuminates a case in which medicine erroneously conflates the distinct concepts of *efficacy* and *safety*, provides a concrete example of imbalanced risk assessment (Busfield, 2010), and expands the concept of the contraceptive paradox. Not only can contraception "be both a source of empowerment and… a source of oppression" (Gomez et al., 2018, p. 191), but the tiered model's reliance on typical-

use failure rates, the very component of pharma-contraceptives' liberatory quality, is rooted in oppressive assumptions.

In conclusion, by offering this analysis, we make no claims about whether individual women should avoid pharma-contraceptives or that providers employing the tiered model have nefarious intentions. Rather, in deconstructing the assumptions that undergird prioritizing typical-use failure rates over all other factors, we illuminate how efficacy discourse positions contraceptive technologies to solve social and health problems and how reproductive politics can infiltrate technoscience in largely invisible ways.

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APPENDIX

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375-Brand Versus Generic Oral Contraceptives, 2007, Reaffirmed 2019.

540-Risk of Venous Thromboembolism among Users of Drospirenone-Containing Oral Contraception Pills, 2012, Reaffirmed 2016.

602-Depot Medroxyprogesterone Acetate and Bone Effects, 2014, Reaffirmed 2017.

615-Access to Contraception, 2015, Reaffirmed 2017.

642-Increasing Access to Contraceptive Implants and Intrauterine Devices to Reduce Unintended Pregnancy, 2015, Reaffirmed 2018.

672-Clinical Challenges of Long-Acting Reversible Contraceptive Methods, 2016.

699-Adolescent Pregnancy, Contraception, and Sexual Activity, 2017.

710-Counseling Adolescents about Contraception, 2017.

788-Over-the-Counter Access to Hormonal Contraceptives, 2019.

670-Immediate Postpartum Long-Acting Reversible Contraception, 2016.

735-Adolescents and Long-Acting Reversible Contraception- Implants and Intrauterine Devices, 2018.

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