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RESEARCH ARTICLE

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Health care provider bias in the Appalachian region: The frequency and impact of contraceptive coercion

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Abstract

Objective: To investigate the frequency and impact of contraceptive coercion in the Appalachian region of the United States.

Data Sources and Study Setting: In fall 2019, we collected primary survey data with participants in the Appalachian region.

Study Design: We conducted an online survey including patient-centered measures of contraceptive care and behavior.

Data Collection/Extraction Methods: We used social media advertisements to recruit Appalachians of reproductive age who were assigned female at birth ($N = 622$). After exploring the frequency of upward coercion (pressure to use contraception) and downward coercion (pressure not to use contraception), we ran chi-square and logistic regression analyses to explore the relationships between contraceptive coercion and preferred contraceptive use.

Principal Findings: Approximately one in four (23%, $n = 143$) participants reported that they were not using their preferred contraceptive method. More than one-third of participants (37.0%, $n = 230$) reported ever experiencing coercion in their contraceptive care, with 15.8% reporting downward coercion and 29.6% reporting upward coercion. Chi-square tests indicated that downward ($\chi^2(1) = 23.337$, $p < 0.001$) and upward coercion ($\chi^2(1) = 24.481$, $p < 0.001$) were both associated with a decreased likelihood of using the preferred contraceptive method. These relationships remained significant when controlling for sociodemographic factors in a logistic regression model (downward coercion: Marginal effect $= -0.169$, $p = 0.001$; upward coercion: Marginal effect $= -0.121$, $p = 0.002$).

Conclusions: This study utilized novel person-centered measures to investigate contraceptive coercion in the Appalachian region. Findings highlight the negative impact of contraceptive coercion on patients' reproductive autonomy. Promoting contraceptive access, in Appalachia and beyond, requires comprehensive and unbiased contraceptive care.

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KEYWORDS
contraceptive care, contraceptive coercion, health care access, provider bias, reproductive autonomy

What is known on this topic

- Research has documented that health care providers sometimes alter the care they deliver based on their personal political or religious beliefs and their patients' sociodemographic characteristics.
- Very little research has explored these issues in the Appalachian region of the United States.

What this study adds

- One in four participants reported that they were not using their preferred contraceptive method.
- More than one-third of participants reported ever experiencing coercion in their contraceptive care.
- Appalachians who perceived pressure from a health care provider *to use* contraception or pressure *to not use* contraception were less likely than those who did not experience such coercion to be using their preferred contraceptive method.

1 | INTRODUCTION

The ways that health care providers engage with their patients shape the patient's experience and contribute substantially to health outcomes. In order to provide high-quality patient-centered care, health care encounters must be free of provider discrimination and coercion.[1,2] However, research has shown that health care providers may alter the care they deliver based on their personal political or religious beliefs as well as their patients' characteristics.[3–6] For example, Spencer and Grace describe ways in which patient characteristics such as gender, age, race, and socioeconomic status predict providers' diagnostic and treatment decisions, ultimately contributing to health disparities and social inequities.[6]

Freedom from provider coercion is particularly salient for contraceptive services, given the ways that family planning has been intertwined with eugenics and population control movements since its inception. Considering the long and well-documented histories of sterilization abuse and stratified reproduction along axes of economic class, race/ethnicity, disability, place of origin, gender, and sexual identity (among many others), ensuring contraceptive services are person-centered in both a medical and human rights imperative.[7,8] Although contraceptive coercion has been well-documented in historical, journalistic, and legal settings, quantitative research on the topic has been more limited. A small body of research has documented—both from patients' and providers' viewpoints—how providers differentially target contraceptive care for certain patients based on their sociodemographic characteristics and also fail to honor patient contraceptive preferences.[9–11] For example, Higgins et al. describe encounters with providers in Wisconsin in which patients were pressured to adopt long-acting methods they did not really want and to keep using methods they wished to discontinue.[9]

Contraceptive coercion can take a range of forms, from the structural to the interpersonal and from the subtle to overt. Work by Senderowicz draws an important distinction between pressure from a health care provider to use contraception (called "upward" contraceptive coercion) or to not use contraception ("downward" contraceptive coercion).[12] Understanding how coercion can lead people both into using a method they do not want as well as prevent them from using a wanted method is key to fully conceptualizing the multiple ways that reproductive autonomy can be limited by health care providers. Different types of contraceptive coercion likely impact patients' reproductive health and autonomy in different ways, and their presentation likely differs between populations and settings.

Very little research has explored these issues in Appalachia, a large geographic region of the United States, which follows the path of the Appalachian Mountain range through Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Pennsylvania, Ohio, South Carolina, Tennessee, Virginia, and West Virginia.[13] This region is home to more than 25 million Americans who are thought to have an overall shared culture, with distinct regional subcultures, characterized by proximity to the mountains, common cuisine and music, and pride in the traits of resilience and self-sufficiency.[13–15] The Appalachian region also faces unique challenges related to geographic isolation and economic distress, with 15% living in poverty and a household income that is 21% lower than the national average.[13] This poverty contributes to a range of health disparities in the Appalachian region, related to general health status.[16,17] Reproductive health outcomes, in particular, suffer in the region, with rates of gynecologic cancer, unintended pregnancy, adolescent births, and maternal morbidity that are all higher than the national average.[18–22]

Furthermore, people living in the Appalachian region have faced many years of reproductive manipulation and eugenic practices used

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to control women and poor people, promote white supremacy, and ensure a productive labor force.[23,24] The Appalachian region has been home to a disproportionate number of forced sterilizations, with one project estimating that one in three of all legal compulsory sterilizations in the US in the 1900s was carried out in one of the 13 Appalachian states.[25] Although forced sterilization is no longer legally conducted, the negative stereotypes of Appalachians that fueled these practices remain common,[15,26] and health care providers living and working in this region are not immune to these stereotypes.

This sociohistorical context and the geographic and economic marginalization of this population mean that Appalachians may face distinctive obstacles to reproductive autonomy, as health care providers introduce their own priorities into family planning care. However, we know very little about the types and impacts of coercion in contraceptive counseling in the Appalachian region. In one of the only existing studies on this topic in Appalachia, approximately half of participants reported experiencing at least one form of contraceptive coercion.[27] This high rate of contraceptive coercion indicates a need for research exploring how these coercive practices manifest and how they may impact the health and autonomy of Appalachian patients.

The current study begins to fill this gap by investigating the impact of contraceptive coercion from health care providers in the Appalachian region. We examined the extent to which Appalachian patients' perceptions of contraceptive coercion from health care providers are associated with preferred contraceptive use—a measure of reproductive autonomy. Our novel approach considers the frequency and impact of upward and downward contraceptive coercion separately and also centers patient experiences through a rights-based investigation of the impact of contraceptive coercion on reproductive autonomy.

2 | MATERIALS AND METHODS

2.1 | Participants and procedures

In the fall of 2019, we used Facebook to recruit participants, using a purposive sampling strategy to target advertisements to people living in Appalachian zip codes and recruit participants from Appalachian interest groups (i.e., "Appalachian Americans"). We also invited participants to forward the survey link to others who might have been interested in participating. Participants followed a link on the study advertisement which took them to REDCap, a secure web application for online surveys.[28] Participants were eligible to participate in the study if they: (1) were 18–49 years old; (2) identified as a cisgender or transgender person assigned female at birth; and (3) resided in an Appalachian zip code as determined by the Appalachian Regional Commission.

The survey was intended to capture information on unmet family planning needs in Appalachia. The questionnaire included items of interest (e.g., provider bias in family planning care) identified via focus groups by stakeholders in Appalachia (as described in Swan et al.[29]). Including informed consent and screening for eligibility, the survey took an average of 42 min to complete, and participants received a $10 gift card after survey completion. The Institutional Review Board at the University at Buffalo approved this research protocol. The study advertisements generated 2124 clicks on the survey link, and the survey was closed after reaching 1200 attempted responses. Responses were carefully screened, using recommended fraud detection techniques, after the study was closed, resulting in the removal of cases that suggested "bot" type activity or other fraudulent activity,[30,31] leaving a remaining sample of 628. After removing six cases with missing data on the key variable, preferred contraceptive use, our final analytic sample was 622.

2.2 | Measures

The survey included items measuring demographic characteristics as well as perceived contraceptive coercion. We also included use of preferred contraceptive method as a person-centered measure of reproductive autonomy.

2.2.1 | Contraceptive coercion

Following qualitative analysis of stakeholder interviews in the region,[29] we developed five dichotomous (0 = no, 1 = yes) survey items to measure contraceptive coercion. We asked participants if a health care provider had ever: (1) denied them birth control, (2) refused to give them their preferred birth control method, (3) pressured them not to use birth control, (4) pressured them to use birth control, or (5) tried to force them to use birth control. The items were then grouped based on Senderowicz' conceptualization of upward and downward coercion, with upward coercion referring to pressure *to use* contraception and downward coercion referring to pressure *to not use* contraception.[12] Three items measured downward coercion (items 1–3 above), and two items measured upward coercion (items 4 and 5 above; see Figure 1). We coded participants who reported one or more upward coercion items as experiencing upward contraceptive coercion and participants who reported one or more downward coercion items as experiencing downward coercion.

2.2.2 | Preferred contraceptive use

In line with recent calls for scholarship that shifts away from outcomes such as unintended pregnancy or contraceptive uptake to instead focus on more accurate and relevant measures of reproductive autonomy,[32–35] we included use/nonuse of preferred contraceptive method as a person-centered measure indicative of reproductive autonomy. We measured preferred contraceptive use by asking participants if they "would like to use a different method of birth control, or begin a method if not currently using one." Response options ranged from "strongly disagree" (=1) to "strongly agree" (=5), with a "neutral" midpoint (=3). We recoded responses of 1 to 2 as not using

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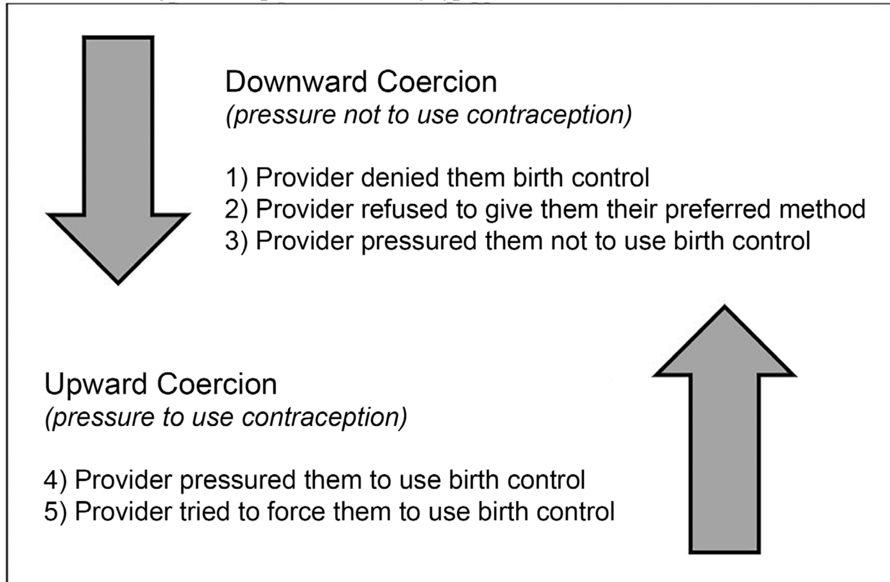

FIGURE 1 Measurement of contraceptive coercion by type.

their preferred contraceptive method (=0) and responses of 3 to 5 as using their preferred method or neutral about changing their method or use status (=1).

2.2.3 | Demographics

We included several demographic variables in our analysis: age, income, health insurance status, marital status, education level, and race/ethnicity. Age was a continuous variable ranging from 19 to 49 years. Participants were also asked their annual household income before taxes, with response options ranging from 1 to 6 ($0–$14,999 = 1, $15,000–$29,000 = 2, $30,000–$49,000 = 3, $50,000–$69,000 = 4, $70,000–$100,000 = 5, more than $100,000 = 6). Health insurance status (0 = does not have health insurance; 1 = has health insurance) and marital status (0 = not married; 1 = married) were measured dichotomously. We asked participants about their highest level of education and collapsed responses into four categories: some or all of high school (=1); associate degree, some college, or trade school (=2); bachelor's degree (=3); and some graduate school or a graduate degree (=4). Finally, we asked participants what race/ethnicity they identified as. Due to low frequencies of Black/African American ($n = 21$), Asian/Pacific Islander ($n = 3$), Latina/o/x ($n = 6$), Native American/American Indian ($n = 9$), and other ($n = 24$) respondents, we collapsed these categories into one "non-white" group to be compared to white participants.

2.3 | Data analysis

We began data analysis by running univariate statistics to describe the sample and overall preferred contraceptive use in Appalachia. We then ran chi-square analyses to investigate the relationship between contraceptive coercion (upward and downward coercion) and preferred contraceptive use. Finally, we ran a logistic regression model to explore upward and downward coercion as predictors of reproductive autonomy. In this regression model, we controlled for the effects of demographic variables (i.e., age, income, health insurance status, marital status, education level, race/ethnicity) in order to determine if these factors explained the relationships between coercion and preferred contraceptive use. We also calculated the marginal effect of contraceptive coercion on preferred contraceptive use, where the marginal effect is the estimated amount that preferred contraceptive use would change with a discrete change (from 0 to 1) in contraceptive coercion, with the other variables held at their mean values. All analyses were conducted in Stata version 17 and used a preestablished alpha level of 0.05.

3 | RESULTS

Table 1 presents demographic data about the sample alongside demographic characteristics from representative samples of reproductive-aged women in the Appalachian region. One study participant identified as a trans man assigned female at birth; all other participants identified as cisgender women. The mean age for the sample was 33.8 (SD = 6.6), and most participants (89.7%) identified their race/ethnicity as white. About one in four (23%, $n = 143$) of the sampled Appalachian participants reported that they were not using their preferred contraceptive method.

More than one in three participants (37.0%, $n = 230$) reported experiencing some coercion (upward or downward) in their contraceptive care. Specifically, 15.8% of Appalachians reported ever experiencing downward coercion (pressure to not use contraception) whereas 29.6% reported ever experiencing upward coercion (pressure to use contraception). Table 2 shows the frequency of these experiences and

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TABLE 1 Demographic characteristics of study sample compared to representative samples of reproductive-aged women in Appalachia.

Variable	2019 study sample: Reproductive-aged Appalachians assigned female at birth (n = 622)	Comparing study sample to representative samples of reproductive-aged women in Appalachia: Residents of Appalachian states as of 2019 (n = 199,794)[a]	Appalachian residents as of 1997–2005 (n = 36,254)[b]
Age			
18–24 years old	6.9%	22.3%	24.8%
25–34 years old	48.7%	30.9%	34.4%
35–49 years old	41.2%	46.8%	40.8%
Household income			
Less than $15,000	9.6%	12.4%	12.0%
$15,000–$49,999	41.6%	20.1%	58.7%
$50,000–$69,999	24.6%	12.8%	29.3%
$70,000 or more	23.0%	54.7%	
Health insurance status			
Not insured	10.3%	9.7%	19.0%
Insured	89.7%	90.3%	81.0%
Marital status			
Not married	28.6%	51.6%	41.9%
Married	71.4%	48.4%	58.1%
Education level			
Did not graduate high school			9.6%
High school	14.1%	29.1%	90.4%
Associate degree	39.5%	32.9%	
Bachelor's degree	24.5%	23.2%	
Graduate school	21.9%	14.9%	
Race/ethnicity			
White	89.7%	72.7%	85.8%
Not white	10.3%	27.3%	14.2%

[a]Data are from the 2019 American Community Survey. Note that data are from the 13 states in the Appalachian region, including some non-Appalachian counties.[36]
[b]Data from Short et al.[37] Note that the age range for this source was 18–44 years old.

TABLE 2 Perceived contraceptive coercion by use of preferred contraceptive method among Appalachian women of reproductive age (N = 622).

Perceived contraceptive coercion	Total (n (%))	Using preferred contraceptive method (n (%)): No (n = 145)	Using preferred contraceptive method (n (%)): Yes (n = 479)	Chi-square test for association (perceived coercion × use of preferred method)
Downward coercion (Pressure NOT to use contraception)				$\chi^2(1) = 23.337$, $p < 0.001$*
No	524 (84.2%)	102 (19.5%)	422 (80.5%)	
Yes	98 (15.8%)	41 (41.8%)	57 (58.2%)	
Upward coercion (pressure TO use contraception)				$\chi^2(1) = 24.481$, $p < 0.001$*
No	438 (70.4%)	77 (17.6%)	361 (82.4%)	
Yes	184 (29.6%)	66 (35.9%)	118 (64.1%)	

*Significant at $p < 0.05$.

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provides bivariate estimates of the relationship between perceived contraceptive coercion and use of preferred contraceptive method. Chi-square tests indicated that downward contraceptive coercion ($\chi^2(1) = 23.337$, $p < 0.001$) and upward contraceptive coercion ($\chi^2(1) = 24.481$, $p < 0.001$) were both associated with a decreased likelihood of using the preferred contraceptive method. These relationships remained significant when controlling for demographic factors in a logistic regression model, with both perceived downward coercion ($B = -0.959$, SE = 0.269, $p < 0.001$; Marginal effect = −0.169, SE = 0.053, $p = 0.001$) and perceived upward coercion ($B = -0.736$, SE = 0.225, $p = 0.001$; Marginal effect = −0.121, SE = 0.039, $p = 0.002$) predicting decreased likelihood of using the preferred contraceptive method.

4 | DISCUSSION

In this study, we examined the relationship between Appalachian patients' perceptions of contraceptive coercion and their reproductive autonomy as represented by their use (or non-use) of their preferred contraceptive method. We found that upward coercion was more common than downward coercion, and both forms of coercion were associated with a decreased likelihood of using the preferred contraceptive method.

More than one in three participants reported ever experiencing some contraceptive coercion. This frequency is slightly lower than that reported by Huslage et al.[27] who found that half of Appalachians in the same sample reported perceptions of contraceptive coercion, because the previous study included an additional measure of sterilization pressure, and examined pressure from others, including partners and family members, in addition to pressure from health care providers.

This study is the first, to our knowledge, to estimate the frequency of contraceptive coercion separately for both upward and downward coercion. We found that 3 of 10 of the sampled Appalachian participants reported experiencing upward coercion, or the pressure to use contraception, whereas 3 of 20 participants reported experiencing downward coercion, or the pressure to not use contraception. This difference in frequency highlights the importance of considering these constructs and their potential impacts separately. Research has shown that providers often promote long-acting reversible contraception (LARC) over other contraceptive methods, even pressuring patients to use this method when that is not their preference.[9,38–40] Existing research also indicates that marginalized populations, such as low-income women, are particularly vulnerable to this form of contraceptive coercion.[9,38,40] Considering the demographic makeup of the Appalachian region and common stereotypes of people in the area, this connection between socioeconomic vulnerability and contraceptive coercion may explain why Appalachian providers are more likely to pressure patients to use contraception than to pressure them not to use contraception.

Although less common than upward coercion, the frequency of downward coercion in this study is also notable. Providers' beliefs and biases about sex, reproduction, and contraception are influenced by social and cultural norms and can result in unjustified restrictions on contraceptive care delivery.[41] In the Appalachian region, where religiosity is high and the Christian faith is often closely tied to daily life,[15,42] provider beliefs about contraception for adolescents and unmarried individuals may influence provider provision of contraception, causing them to engage in downward contraceptive coercion.

This study also found that about one in four participants was not using their preferred contraceptive method. As this family planning outcome represents a relatively new method of measuring reproductive autonomy, only one other study has reported rates of preferred contraceptive use in Appalachia, similarly finding that 25% of Appalachians in Ohio were not using their preferred contraceptive method.[43] Studies in other regions of the United States have estimated that 22%–36% of participants are not using their preferred contraceptive method.[44–46] Continued research is warranted to better understand this important indicator of reproductive autonomy.

Threats to reproductive autonomy can arise from health systems and other structural sources,[47] and these barriers to autonomy are intertwined with individual providers' engagement in contraceptive coercion. Although it may seem tautological that exposure to contraceptive coercion by definition reduces overall reproductive autonomy, the results of this study also show that many people can still find ways to get to their preferred contraceptive status (either using their preferred method or choosing to use no method at all) in the face of these substantial barriers. Many patients are adept at navigating these contraceptive barriers, finding agentic ways to access their preferred method elsewhere or adapting to a non-preferred method that they are able to access. This is likely especially true in the Appalachian region, where resilience and self-sufficiency are key community values that shape daily life as well as health-seeking behaviors.[14,15,48]

4.1 | Implications for research, practice, and policy

This study provides critical information about the frequency and potential impact of contraceptive coercion in the Appalachian region, indicating that perceptions of contraceptive coercion exist widely in the Appalachian region and impact patients' reproductive autonomy. Continued research is needed to add detail and nuance to our findings, particularly around the ways that patients respond to contraceptive coercion and whether they manage to achieve their desired contraceptive and family planning goals despite experiencing contraceptive coercion. As suggested by Dehlendorf et al., continued research should utilize and refine patient-centered outcomes to assess the nuances that permeate reproductive decision making.[49] In our study, we did so by integrating person-centered variables, from exposure to outcome. Grounding research within a reproductive justice framework and centering voices of those whose fertility has been historically devalued will also be vital to addressing reproductive health inequities and furthering a rights-based approach to research.[50]

Given that contraceptive choices are often made within the context of power relations and gender norms[51] and that patients place

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heavy emphasis on the opinions of their health care providers,[52] it is of critical importance that practitioners deliver culturally relevant, patient-centered contraceptive counseling. In order to do so, health care providers must assess patients' reproductive life plans and counsel them using a shared decision making model to help patients make contraceptive decisions that are free of coercion and based on full information and full access to all contraceptive options.[35,53–55] Additionally, the tiered-effectiveness approach to counseling, which places emphasis on the most effective methods first, does not provide individualized counseling and can easily be perceived as contraceptive coercion.[56,57] Thus, providers must be self-aware and not prioritize their preferences (or those of their funders and employers) over patients'. Advocacy and training may be needed to address providers' coercive practices, and public health goals and action plans should take care not to prioritize method effectiveness and uptake over patient reproductive autonomy. Furthermore, provider biases (including internalized sexism, racism, and classism) that contribute to inequitable contraceptive counseling must be addressed through policy- and health care system-level changes that confront structural inequalities as well as individual-level interventions that support reproductive autonomy.[58]

4.2 | Strengths and limitations

These findings should be interpreted with consideration of several limitations. We used a purposive sampling approach to recruit participants via targeted Facebook advertisements. This approach has unique strengths, as described by Schneider and Harknett,[57] in that it allowed us to disseminate our online survey quickly and broadly to a targeted group of Appalachian residents—a group that would be difficult to reach with other low-cost sampling strategies. However, this non-probability sampling approach limits the representativeness of the findings and may introduce bias that could impact our ability to draw valid inferences about our study population.[57] The study's generalizability to regions other than Appalachia is also limited, particularly because of the study sample's lack of racial/ethnic diversity, which reflects that of the Appalachian region overall[13] but not that of other areas of the United States.

The degree to which our study sample matches that of the Appalachian region on other study variables is more difficult to establish due to a lack of recent descriptions of the demographic makeup of reproductive-aged adults assigned female in the region. In Table 1, we have compared our study sample (column 2) to a dated (1997–2005) but representative sample of reproductive-aged women in the Appalachian region (column 4)[37] and to a more recent (2019) representative sample of women of reproductive age who live in one of the 13 Appalachian states (column 3).[36] These data show a similar demographic makeup on many study variables, but they do diverge in a few areas. Differences in household income are likely due to inflation and rising salaries since the Short et al. study and higher salaries in non-Appalachian counties within Appalachian states.[13,37] An increase in health insurance coverage since the Short et al. study is also not surprising given the expansion of programs designed to increase insurance coverage, including the passage of the Affordable Care Act, since their study.[37] This leaves some differences in age, marital status, and educational attainment, indicating that we had fewer young people (aged 18–24 years), more married people, and slightly more highly educated people in our study sample compared to representative samples of reproductive-aged women in Appalachia. This has important implications for the interpretation of our findings as it may be an indication of bias related to our purposive sampling strategy. Nonetheless, these study findings are important given the lack of research on this topic in Appalachia. Future research could build on this study using more rigorous sampling strategies.

The study's validity is also limited by the lack of established and validated measures of our key variables. To combat this challenge, we have grounded our measurement techniques in theoretical knowledge about contraceptive coercion[35] and in rigorous qualitative research with family planning stakeholders in the Appalachian region.[29] Regardless, the study of contraceptive coercion would benefit from continued research to refine and validate measurement approaches. Furthermore, based on the lack of research on this topic, we assessed the *lifetime* frequency of contraceptive coercion. Future research could build on this study by establishing the point frequency and impact of contraceptive coercion within defined time ranges. Using longitudinal analyses to establish the time order of these experiences and outcome variables would also help define the impact of coercive experiences in contraceptive care.

Despite these limitations, this study has several strengths. We are among the first to use a person-centered approach to measure constructs from exposure to outcome. This novel approach allows us to capture more meaningful aspects of contraceptive care and autonomy. Our approach is also strengthened by its foundations in theory and in rigorous qualitative research, which allowed us to capture nuance in contraceptive coercion experiences by separately measuring upward and downward coercion.

5 | CONCLUSION

This study utilized person-centered measures to investigate contraceptive coercion in the Appalachian region. We found that patients' perceptions of upward and downward coercion were associated with a decreased likelihood of using their preferred contraceptive method. Findings highlight the impact of contraceptive coercion on patients' reproductive autonomy. Promoting contraceptive access, in Appalachia and beyond, requires comprehensive and unbiased contraceptive care.

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CONFLICT OF INTEREST STATEMENT

The authors report that there are no competing interests to declare.

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