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INSIDE

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CDC Study Shows Low Condom Use Among LARC Users

Meanwhile, STIs are increasing

Women increasingly are using long-acting reversible contraception (LARC). But LARC users might also be forgoing condoms, the only contraceptive that protects against most sexually transmitted infections (STIs), the results of a recent study suggest.[1]

Investigators with the Centers for Disease Control and Prevention (CDC) found that LARC users have lower condom use when compared with users of oral contraceptives.[1]

"In this study, we compared published data on moderately effective contraceptive methods — [such as] pills and rings — and compared this to highly effective methods: IUDs [intrauterine devices], LARC," says **Riley J. Steiner**, PhD, MPH, the study's lead author and health scientist on the adolescent and young adult team with the CDC's Division of Reproductive Health.

> THE INVESTIGATORS FOUND THAT LARC USERS ARE 40% TO 60% LESS LIKELY TO USE CONDOMS THAN THOSE WHO USE MODERATELY EFFECTIVE CONTRACEPTION.

The investigators found that LARC users were 40% to 60% less likely to use condoms than those who use moderately effective contraception.

"The other finding is that it's unclear what that difference in condom use means for the risk of STIs," Steiner says. "For chlamydia and/or gonorrhea, there was no difference in odds of infection between [users of] LARC and moderately effective contraceptive use."

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AUTHOR: Melinda Young
EDITOR: Jill Drachenberg
EXECUTIVE EDITOR: Shelly Morrow Mark
EDITORIAL GROUP MANAGER: Leslie Coplin
ACCREDITATIONS DIRECTOR: Amy M. Johnson, MSN, RN, CPN

One potential reason for lower condom use among LARC users could be that condoms are seen primarily as backup contraception, and those with LARC find a backup contraceptive unnecessary because their birth control method is so highly effective, Steiner says.

Another possible explanation is that LARC users are less likely to have multiple sexual partners and contract STIs. "We're still not certain, and it's promising that we didn't see a difference in chlamydia and gonorrhea infection among LARC users and moderately effective contraceptives users," Steiner says.

STIs on the Rise

STIs cases are increasing — particularly among young people, says **Kimberly R. McBride**, PhD, MA, associate professor in the department of women's and gender studies at the University of Toledo (OH).

"All of the money we've put into educational programming is missing the mark right now," McBride says. "You have to conceptualize it within what else is happening within their lives."

For instance, women with LARC might be more likely to perceive they are in monogamous relationships. "If they're on LARC and in what they perceive as a consensual relationship, then condom use is going to be low," McBride says. "The biggest reason you're not seeing condom use is because of the relationship context."

Providers should be aware of their clients' STI risks when they do not use condoms regularly. "If [condoms used solely as backup contraceptives] is the underlying driver of the difference in condom use, we'd be concerned about the underlying risk of sexually transmitted infections," Steiner says. "There is need for more research to get a better handle on what condom use is and to better understand the difference in condom use between LARC and moderately effective contraceptives users."

Other research has shown that condom use with LARC has increased.[2] "Recent analyses of the use of condoms with other methods of contraception — IUDs and implants — at last vaginal intercourse among women, aged 15-44, have shown that condom use with LARCs has increased from 11% in 2002 to 15% in 2011-2015," says **Casey Copen**, PhD, MPH, behavioral scientist in the CDC's Division of STD Prevention. "These increases in LARC use with condoms

EXECUTIVE SUMMARY

Women using long-acting reversible contraception (LARC) were less likely to use condoms than are women who use oral contraceptives, a new study shows.

- In the study, people using LARC were 40% to 60% less likely to use condoms than are people who use moderately effective contraceptives.
- Some LARC users might see condoms as backup contraception. People may believe that LARC's extremely high effectiveness at preventing pregnancy means they do not need a backup contraceptive.
- Also, providers may not be counseling patients about sexually transmitted infections (STIs) and how condoms are effective at preventing STIs.

are related to increases in LARC use over time."[3]

CDC data show a five-plus year trend of rising STI rates nationwide, despite a sharp decline in reported STIs after the COVID-19 pandemic emerged in the spring of 2020.[4] *(See the December 2021 issue of* Contraceptive Technology Update *on how the pandemic did not stop the trend of rising STIs.)*

Other research shows that about one in five heterosexually active women who have anal sex use condoms, according to CDC data from the National HIV Behavioral Surveillance (NHBS) and estimates from the National Survey of Family Growth, Copen reports.[2]

"While we can't directly correlate national trends in anal STIs among women to condom use, there have been a few trends in the use of condoms that could relate to overall STI increases among women," Copen explains. "The National Survey of Family Growth [NSFG] estimates that 20% of women report condom use during anal sex. However, 4.2% have multiple opposite-sex anal sex partners in the past year."

Over the past decade, NSFG historical data on condom use has shown a slight decline in condom use during vaginal sex among women age 15-44 years.[5,6]

"These declines could be due to several factors, including reports of less sexual activity — measured in past four weeks — and lower reported number of male sex partners in the past year," Copen explains.

"One of the trends is fewer people, younger people, are sexually active than in the past," McBride says. "Younger people are not having [as much] sex, and some of that is attributed to social media and people not being together in the same ways they have in the past."

The collection of new data creates an interesting and contradictory picture. On one hand, overall sexual activity and condom use are declining. On the other hand, STI rates have risen.

"What's going on there?" McBride asks. "We do see this trend of people exploring sexual behaviors other than penile-vaginal intercourse."

For instance, there is a trend of penile-anal intercourse among heterosexual couples. "If they're not well educated about STIs, they do not understand the risk," McBride says.

McBride's research shows that anal sex behavior, including oral-anal contact, is increasing.

"Even if they haven't had penile-anal intercourse, they might have engaged in other things, like manual contact and use of sex toys," McBride explains. "Women have had very little knowledge about sexually transmitted infections, generally, but particularly about anal intercourse."

The HIV epidemic is one example. Most of the messaging involves sexual contact between men who have sex with men (MSM), and women often do not perceive themselves to be at risk. About 45% of the U.S. heterosexual population has tried penile-anal intercourse at least once, and this trend is increasing, McBride says.

HIV transmission risk is 18 times greater with anal intercourse than with vaginal intercourse, research has shown. Anal intercourse also raises the risk of other STIs because of the increased likelihood of mucosal disruption and trauma in the rectum's lining vs. the vaginal lining.[8,9]

The chief takeaway message is that reproductive health providers need to counsel all women on using condoms during both vaginal and anal intercourse to reduce the risk of contracting an STI. *(See story on how to improve messaging about condoms in this issue.)*

Even as overall condom use has declined, evidence shows that condoms have become a more effective contraceptive. One study showed the failure rate of condoms as a contraceptive has declined from 18% in 1995 to 13% in 2010.[7]

The decrease in the failure rate of condoms suggests changes in the demographic and behavioral characteristics in who uses condom and in condom use consistency, Copen says. ■

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Providers Can Improve Condom Messaging to Patients

Patients should be offered STI testing and counseling

Reproductive health providers could help patients better understand their risks of both pregnancy and sexually transmitted infections (STIs) by asking nonjudgmental questions about their sexual activity, and offering testing for STIs and a vaccine for human papillomavirus (HPV).

For instance, women might believe they are safe from STIs because they are in a monogamous relationship. That is not always the case, says **Kimberly R. McBride**, PhD, MA, associate professor in the department of women's and gender studies at the University of Toledo (OH).

"What they don't understand is STIs often don't show signs or symptoms," McBride explains. "Someone might have one that's been undiagnosed for a really long time, or their partner might have an STI."

Minimize Stigma

Providers need to educate patients that contracting an STI is not necessarily a sign that their partner is not monogamous. HPV, herpes, gonorrhea, and chlamydia all have high rates of being asymptomatic. Unless someone is specifically tested for one of the infections, they will not know they are infected.

"Women who go into the clinic for their annual exam should be tested for STIs, and they often are not," McBride says.

All it takes is for a provider to ask whether the patient would like to be tested for STIs. "When women go in for a gynecological exam, they may think they're being tested for everything, and that's not the case," McBride says. "Offer to test them for STIs; make it an option that is like a normal option, saying, 'If you've never been tested, this would be a good opportunity,' and 'This is a regular thing we do, and it's not about you or your behavior.'"

This approach minimizes stigma and makes it easier for women to opt in, since they do not have to ask for STI testing, worrying about being judged by their provider.

"Think about young women who might feel stigma and shame. This gets around that barrier," McBride says.

Be Nonjudgmental

It also is important to ask patients about all their sexual behaviors in as nonjudgmental a manner as possible. "Make sure you're not making assumptions about what people do sexually," McBride says. "People could be doing a variety of different things, and it's always better for providers to introduce it because it normalizes it."

For example, some young women will engage in anal intercourse as a contraceptive method or as a way to please partners when they are menstruating, McBride says.

"A lot of dynamics go into it," she adds. "Some [engage in anal sex] for their own curiosity; some use it as a way to say they're a virgin."

Women tell investigators that they want their providers to make sure they are healthy and safe, but they are uncomfortable asking about risky sexual behaviors out of fear of being judged. "Providers should, at a minimum, assess patients for all behaviors," McBride says.

For instance, anal sex is higher risk for STIs than vaginal sex. That should be discussed in a way that does not make a patient feel stigmatized. Anal STI testing also should be included if that is an activity in which the patient engages, particularly if condoms are not used.[1]

"For sexually active individuals, condoms are a primary method for preventing sexually transmitted diseases, and that's the message for providers to be offering," says **Riley J. Steiner**, PhD, MPH, health scientist on the adolescent and young adult team of the CDC's Division of Reproductive Health. "We know that reported annual cases of STIs in the

United States continue to climb, and we have increases each year over the past six years. We also know that in 2019, about half of STI cases were among adolescents and young adults [ages] 15-24 years."[2]

Research suggests that stressing the STI prevention benefits of using condoms could be helpful.[2]

"That's a message for providers to offer patients," Steiner says. "For individuals at risk for STIs, family planning providers have an important role to play for preventing STIs in patients."

Reproductive health providers can help patients understand that their use of long-acting reversible contraceptives (LARCs) and hormonal contraceptives can effectively prevent pregnancy, but they provide no protection against STIs, Steiner explains.

Providers could counsel patients that using condoms in addition to LARC or another birth control method would protect them from both pregnancy and STI transmission. Discussing condoms with patients can increase their use.

"Condoms are a highly effective option for preventing STIs and have a lot of benefits in terms of low cost and easy accessibility. They're a valuable piece of the STI prevention portfolio," Steiner says. "Even though there is a lot of complexity in terms of preventing both pregnancy and STIs, using condoms along with other methods of contraceptives do offer a straightforward message to clients."

The larger point involves the value of offering reproductive health services that integrate pregnancy protection with protection from STIs. "We should start with those two goals and figure out the best prevention option for each one," she says.

Condoms remain the chief STI prevention method, but patients also might want to discuss other methods, such as mutual monogamy and HIV prophylaxis.

"The point is, that if we think about integrating these two pieces of reproductive health, this can help providers think of the best strategies to meet patients' goals," Steiner says. "Helping them with strategies to reduce risk of infections is important for adolescents and young adults." ■

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Patients' Contraceptive Choices Evolve Over Time and Life Needs

"One and done" is not how most women choose a contraceptive. At one point in their lives, women may select a hormonal contraceptive pill, but might opt for a long-acting reversible contraceptive (LARC) at another point.

A majority of women seeking abortion services in the United States expressed a preference for LARC during contraceptive counseling before their abortion procedure, according to an analysis.[1]

After analyzing 12 studies of contraceptive preferences among postpartum women, researchers found that women who desired future fertility were concerned about contraceptive side effects and their partner's disapproval. This affected their contraceptive preferences. Postpartum women who were satisfied with their family size were less concerned about these potential barriers.

"No contraceptive method had all the features users deemed important," says **Anita Dam**, MSPH, lead author and program analyst with the United States Agency for International Development (USAID) in Washington, DC. Dam works in the global health bureau on family planning. Her study was completed before she began to work with USAID and does not necessarily reflect the views of USAID.

"This systematic review is part of a set of reviews on values and preferences related to contraception globally," Dam explains. "It started off with 423 articles. Twenty-three studies from 10 countries met the inclusion criteria for this review specifically."

One of Dam and colleagues' signature findings was that many studies emphasize values and practices around LARC, including the convenience of accessing LARC and concerns about side effects.

"In general, out of 23 studies, a lot of them talked about LARC," Dam says. "These included studies that were looking at values and preferences of LARC."

LARC was viewed as convenient for women who had just given birth and for women who had sought abortion services and could have LARC inserted at the clinic after the procedure.

The authors found enthusiasm for immediate post-delivery and post-abortion LARC.

The main themes of values and preferences were influenced by method effectiveness, access, availability, convenience, cost, side effects, previous experience, partner approval, and societal norms.

"Similarities and differences were evident across subgroups, especially concerning contraceptive benefits and side effects," Dam says.

Dam and colleagues also found values and preferences around contraceptive methods are dynamic over the course of a woman's life. These preferences can be influenced by various factors, including:

- Planned and unplanned pregnancies;
- Change in relationship status;
- Change in health status;
- Availability of new methods;
- Evolving societal norms and structures;
- Availability of contraceptive counseling.

"For example, women satisfied with their respective family size tended to prefer long-acting or permanent methods," Dam explains.

By contrast, women desiring children in the future considered contraceptive use within the timeline of their planned future fertility and tended to prefer barrier and short-acting methods, or, sometimes, long-acting methods.

In multiple studies, women said they chose a method because it caused fewer side effects than another method, but no method was perceived as causing zero side effects.

"The following side effects came up throughout the 23 studies, but did not show clear patterns across the subgroups analyzed in this paper: disruption of the menstrual cycle, mood-related side effects, sexual side effects, and physical side effects."

Investigators did not analyze the studies to see which method checked off the most values and preferences, but they did see a skew toward studies discussing the values and preferences of LARC.

"Many of the studies discussed the dichotomy between appreciating the convenience of immediate LARC placement and having concerns about the method, like side effects," Dam explains. "This emphasis reflects the global trend of increased uptake of LARC in the past decade. This increased user accessibility and uptake of LARC was a part of the greater global commitment to ensure broad access to a wider choice of methods."

This commitment includes donors and manufacturers ensuring lower commodity costs and higher availability as well as revised expert guidance on a wider client eligibility to receive LARC.

Reproductive health providers should keep in mind that even as individual patients' values and preferences for contraceptives change over the course of their lifetimes, these values and preferences can change as a society changes and contraceptive science evolves.

"As method availability changes and LARCs may become more commonly used, values and preferences may continue to change," Dam says. "Individuals must have access to a full range of safe and effective modern contraceptive options, allowing people to make decisions based on evolving contraceptive preferences over time."

Robert A. Hatcher, MD, MPH, chairman of the *Contraceptive Technology Update* editorial board, adds "Women's decisions will be influenced most dramatically in states where abortions become very, very difficult to obtain. Contraceptive effectiveness has always been important, but will become even more important if abortion is virtually unavailable for a woman." ■

EXECUTIVE SUMMARY

Women's preferences in contraceptive methods can change with time and circumstances in their lives, new research shows.

- Postpartum women who desire future fertility were more concerned about side effects and their partner's opinion of their contraceptive choices.
- Values and preferences are influenced by the contraceptive method's effectiveness, access, convenience, side effects, societal norms, and other issues.
- Long-acting reversible contraceptive methods may become more commonly used as people's values and preferences change and these contraceptives grow in popularity.

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Privacy Breaches and Reputation Terrorism Plague Abortion Providers

Violence decreased; harassment on the rise

More than one-third of abortion providers reported being harassed by anti-abortion individuals, including intimidation and invasive behavior. Some providers experienced intentional public exposure of their abortion work and discreditation, according to new research.[1]

The more violent harassment includes 11 murders, 26 attempted murders, 607 death threats, 42 clinic bombings, and 188 arsons that affected abortion providers and facilities from 1977 to 2018.[1,2]

Overt violence has declined since the 1990s, but nonviolent harassment has increased, the researchers found. This includes picketing, obstruction, hate mail, harassing phone calls, and internet-based harassment against abortion clinics. In some cases, people have picketed abortion clinic employees' homes, copied their license plates, and stalked them.[1]

"We did a web-based survey of [current and past] abortion providers across the U.S. and collected [quantitative and qualitative] comments about their experience with abortion provider harassment," says **Corinne McLeod**, MD, the study's lead author and clinical instructor at Albany (NY) Medical Center.

Of the 321 physicians who responded to the survey, 35% reported harassment. The percentage reporting harassment was higher among providers who were more publicly visible through work in outpatient abortion clinics. For example, 40% of physicians providing outpatient abortions reported harassment vs. 7% of physicians reporting surgical abortion care in a hospital.

"In fairness, our study is probably not a complete representation of a sample of all abortion providers in the United States," McLeod acknowledges.

One chief finding is that most harassment is invasive and intimidating rather than overtly violent.

"We found that although the historic perception of abortion provider harassment is the overly violent [actions] like bomb threats and shootings, the more common harassment people experience is more invasive and works at undermining people's reputation," she explains.

Harassment Moves Online

The social media age has made it easier for individuals to harass providers. Harassment includes defamation, intimidation, and isolating physicians from their peers.

"The internet has become a more powerful tool in this type of harassment," says **Rachel Flink-Bochacki**, MD, MPH, FACOG, study co-author and assistant professor at Albany Medical Center. "We found most of the harassment people experienced was designed to harm their professional reputation and standing and to harm their standings in their communities. It was designed to isolate them from their communities, professionally and socially."

The goal appears to be to deter physicians from providing abortion services because of fear of being divided from the rest of the community, Flink-Bochacki adds.

Of 321 respondents, 19% were not currently providing abortion care. More than half of the providers who had stopped performing abortions reported that it was because their employers explicitly forbid them from providing that service.

EXECUTIVE SUMMARY

Anti-abortion extremists use physical violence less often than in the past, but are harassing physicians through social media, online doxxing, intimidation, threats, and attempts to ostracize providers from their peers and communities.

- Violence from anti-abortion terrorists resulted in 11 murders, 42 clinic bombings, and 188 arsons over a four-decade period. But more recent actions have involved hate mail, harassing phone calls, and internet-based harassment against abortion clinics and providers.
- The social media age has made harassment easier, including defamation, intimidation, and isolating physicians from their peers.
- There no longer are hospital wards with sick and dying women from failed abortions, but in some places, such as Texas, women are being turned away when they need abortion care services.

"A significant number were forbidden from providing abortions by their employers, even though they were trained and willing to do so," McLeod says. "Some made choices about where they lived and chose [not to perform abortions] based on the political area."

Some study respondents discussed fearing their families would be harassed, or they feared for their own safety. From what researchers could find, the fear of harassment was more common than the actual experience of it.

"It wasn't that common that they had encounters with anti-abortion activists that made them feel physically unsafe," Flink-Bochacki says. "It was more that they'd say, 'We know where you live, and we could hurt you if we wanted to.'"

Threats of violence were more common than actual violence, but both are unacceptable. "Any harassment of doctors providing a legal healthcare practice is inappropriate," Flink-Bochacki says adds.

The survey did not ask about police involvement, but one person reported receiving a death threat and obtaining a police tail for about a week. "For many physicians, harassment was par for the course, and they either provided abortion services because it was important to them, or they stopped providing it," McLeod says.

Previous research into abortion provider harassment focused primarily on clinics and clinic staff. McLeod and colleagues wanted to know what individual doctors experienced and whether this affected their decision to continue to provide abortion services.

"We know a lot of doctors that may consider abortion are looking at the political landscape of where they work and may be dissuaded by threat of harassment," McLeod explains. "We wanted to explore the prevalence of harassment and actual experience to disseminate that information and allow other physicians to be more informed."

The respondents' reported harassment included:

- threatening phone calls in the middle of the night;
- harassing emails and tweets;
- clinic protestors identifying providers by name;
- online posts of targeted doxxing of providers' photographs, addresses, Social Security numbers, or medical licensing information;
- breaking into the provider's car to draw a hangar on the windshield;
- vandalism, including nails in tires and rocks thrown through windows;
- large protests in front of a provider's home with trucks featuring graphic pictures of fetuses;
- letters sent to neighbors about the physician's abortion work;
- shouting at a doctor at a restaurant;
- stalking and death threats resulting in protective surveillance;
- posting a photo of a provider's daughter on an anti-abortion website.

Providers Fear Discussing Their Work

For these reasons, some abortion providers hide their work from people in their community. One person noted it is the safest option to protect their children from protestors.

Some physicians said they did not discuss their work in abortion care because it could potentially be harmful to their medical practice or business partners.

"We were looking at targeted harassment of [doctors] personally, and not just walking past protestors," Flink-Bochacki says.

One provider was targeted with a bus ad that listed the provider's name along with graphic anti-abortion photos to deter patients from attending that practice even for non-abortion care.

"A lot of institutions don't want to get involved with that. They don't want the negative attention and drama of providing this service," Flink-Bochacki adds. "Hospitals don't want those doctors to work there because they don't want the attention."

A broad example of general harassment is the Texas anti-abortion bounty law that gives anyone in the country the right to sue an abortion provider or anyone who assists the woman seeking an abortion.

"Texas leads the way in novel trap laws targeting regulation of abortion providers," McLeod says.

Texas' bounty-hunter system was heard by the U.S. Supreme Court, but not acted upon as of Nov. 30, 2021. The Texas law provides at least $10,000 to anyone who successfully sues an abortion provider. It might present the ultimate financial risk for doctors offering abortion services. But it is not the only anti-abortion action that seeks to end abortion through financial harassment.

"People may not have a $10,000 bounty to prevent abortion care, but [personal harassment] affects their lives, relationships with colleagues, and professional status," Flink-Bochacki says.

The positive changes brought by nearly five decades of safe and legal abortion care have been eroded by anti-abortion terrorism and personal harassment of providers.

"We, fortunately, are not in an era where we have those abortion wards with a whole floor of the hospital [filled with] people who tried to abort

and got injured," McLeod says. "Even if it's not at the point now where people are dying of sepsis, it's still heartbreaking seeing people turned away from services they deserve to have." ■

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Some Good and Not-So-Good News About Abortion Information Online

Some information is deliberately false

Researchers have spent a few years trying to understand how abortion information is presented online and how it is understood by laypeople. This is one of those controversial healthcare issues in which internet information is more likely to be intentionally false than it is to be inaccurate due to ignorance or misinterpretation of data.

"The premise is recognizing that most people today are getting information from the internet," says **Leo Han**, MD, MPH, study co-author and assistant professor with the Oregon Health & Science University department of obstetrics and gynecology. "If you want information on abortion, you can look it up first. Plus, Facebook and social media posts will feed you a lot of passive information about abortion through memes and people posting stuff. It's a controversial and widely discussed topic."

Information Intentionally Misleading

On other healthcare topics, such as prostate cancer, information online might vary. But the inaccurate information is not bad because of people trying to mislead information-seekers.

"But with abortion, because it's politicized and there are camps of pro-choice and anti-choice out there, a lot of the internet stuff is wrong, incorrect, and misleading," Han explains. "This information is what informs the public on how it perceives abortion."

In a previous study, researchers had already shown the plethora of misinformation available online. For this investigation, they wanted to know how well people would navigate through both accurate and false information about abortion.

"We wanted to know if we took someone and asked them to look up abortion, what would they come away with from their knowledge and perception of abortion," Han says. "A lot of the misinformation was making it seem like abortion was unsafe."

The false information attempted to scare people about abortion. Some sites claimed that abortion would cause infertility or would kill women.

"They claimed to provide resources about abortion, and they masked themselves, a little bit, to not come off as being overtly anti-abortion, but they are," Han says.

Han and colleagues asked participants whether abortion was safe and whether it caused infertility. The correct answers were "Yes, abortion is safe," and "No, abortion does not cause infertility," Han says.

After answering the questions, people were given web browsers that were clean of search history and asked to look for information online that would answer those two questions.

"One of the limitations was we conducted this study in Portland,

EXECUTIVE SUMMARY

Most people now receive health information over the internet through search engines, social media posts, and advertising. Because abortion is politicized, there is a great deal of information online that is misleading or inaccurate.

- Researchers investigated how people navigate online information, including both accurate and false information.
- Some sites claim abortion causes infertility or can kill women.
- After a web search, study participants tended to decide abortion was safer than they thought it was before the search.

OR, where our hospital and research center are based," Han says. "We have a bias in terms of demographics."

For instance, Portland participants tend to be more liberal than a participant pool that is based in a non-urban Midwestern or Southern area.

"In the real world, you could conduct the study in Ohio and capture people who are all over the place in political slant," Han says. "In Portland, we tended to capture people who were more liberal."

Investigators tried to enroll conservative participants and put up advertisements in churches, but they were unsuccessful in diversifying their pool of participants.

"What we found is that regardless of their leanings beforehand, after a web search, they tended to decide abortion was more safe than they thought it was before the search," Han says.

The questions about safety and infertility were given a range of answers from participants not confident in abortion's safety to extremely confident in its safety. The same range, scored 1 to 10, with 1 being "not confident," also applied to their thoughts about whether abortion is likely to result in infertility.

After performing an internet search, participants were more likely to say they were extremely confident that abortions are safe and do not cause infertility.

"Despite the information on the web being of mixed quality, people seemed to see enough of the high-quality information or could tell what's high-quality," Han says. "They were more reassured by seeing it."

The pre-search findings were surprising because even people who identified as pro-choice, educated, and liberal thought abortion was less safe.

"Initially, they thought it was unsafe, and after the search, they felt it was safer," Han says. "The two takeaways are that after an unguided web search, where people looked at the internet for half an hour, they found abortion was more safe than before they did the internet search. Even people who you think knew abortion was very safe underrated its safety."

Study participants also were asked about the safety of cesarean deliveries and connection to infertility. They believed cesarean deliveries were slightly less safe before they performed the internet search.

Susceptibility to Trap Laws

Inaccurate concerns about legal abortions and their safety might contribute to susceptibility to believing trap laws were passed for safety reasons.

"Trap laws are laws that are meant to reduce access under the pretense of increasing safety," Han explains. "If the average person is not convinced that abortion is super safe, they might not see through these trap laws and see how these are really about being anti-abortion. I've come to appreciate that average people are being influenced by a lot of negative information on the internet."

Han and colleagues found that the most common websites participants used for information were news sites, blogs, Wikipedia, and YouTube. Some people also found the websites of Planned Parenthood and other high-quality information sites.

"We asked, 'Do you feel it was easy to find answers? Do you feel like information on the internet was efficient?'" Han says. "Eighty-six percent said it was easy to find information, and 55% said they thought the information was consistent from website to website."

Almost 40% noted a lot of conflicting information online, and 7% thought there was a lot of mixed information, and they could not decide which information was accurate.

From a reproductive health provider's perspective, knowing that patients might believe abortions are not as safe as data show, they could spend more time educating patients on the evidence of safety.

"Knowing that a lot of information online is low-quality and misleading, you could have websites in your brain to direct people toward," Han says. "People want to look things up. If someone calls in on Tuesday to ask about abortion on Friday, they'll Google it."

Clinicians can steer them to websites with accurate information that is not designed to scare them.

"Cite facts on safety. People still need to work hard to spread information about abortion safety," Han says. "Unfortunately, if you Google about abortion, which I do periodically, the vast majority of information, starting off, is pretty good, but it doesn't take long before you get into a fake site, where people are talking about infertility and things like that."

The goal should be to give patients information and websites that provide accurate information, combatting the world of false claims and misinformation, he adds. ■

REFERENCE

1. Forbes M, Darney BG, Ramandathan S, et al. How do women interpret abortion information they find online? *Contraception* 2021 Apr;103:276-281. doi: 10.1016/j.contraception.2021.01.005. Epub 2021 Jan 14.

Nonhormonal Contraceptive Method Could Be Next Option

Researchers have found a potential new female contraceptive that could prevent pregnancy without affecting hormones. New research shows the benefits of using monoclonal antibodies to trap and block human sperm.[1]

The goal is to produce a water-soluble, 2 × 2-inch film that could be folded and inserted in the vagina before intercourse, where it would dissolve within 30 minutes to two hours, says **Bhawana Shrestha**, PhD, post-doctoral researcher at the University of North Carolina (UNC) School of Pharmacy in Chapel Hill.

Researchers engineered a panel of sperm-binding immunoglobulin G (IgG) with antigen-binding fragments, isolated from immune-infertile women, creating highly multivalent IgGs (HM-IgGs) that are more potent and faster at agglutinating sperm than the IgG.

The benefits of this on-demand contraception would be its ease of use and lack of hormones. Eventually, this type of contraceptive could be developed into an intravaginal ring that works for the entire month of a woman's ovulation cycle.

"I believe it would appeal to almost all women," Shrestha says. "There are women who avoid contraception because of the lack of choices. If this product is developed and safe and effective, I think this would appeal to women who avoid using hormonal contraceptives and also to women who reluctantly use hormonal contraceptives."

A monoclonal antibody contraceptive is noninvasive and provides users with the freedom of using it only if and when they desire.

While women in the United States appear to have a wide range of contraceptive options, most of these use hormones. This is problematic for women's choices and access.

"Despite so many options, many women don't use those options because of side effects that go from minor to severe," Shrestha says. "This leaves women with very little choice for nonhormonal contraceptives."

Side effects include disrupted or different menstrual bleeding, acne, weight gain, mood swings, increased blood pressure, headache, breast tenderness or pain, depression, and bloating.[2]

Condoms and the copper intrauterine device are their chief options for nonhormonal contraception. "There should be a newer form of contraceptive, and I think our product will appeal to a lot of women," Shrestha says.

The potential contraceptive still is years away from availability.

"Most of the data we have is in vitro data and animal data," Shrestha explains. "We have not been able to test safety and efficacy in humans yet."

There are human trials of a contraceptive that uses the traditional format of IgG to neutralize sperm, but the target of Shrestha's project is a few years from being studied in clinical trials.

"I believe clinical trials could happen within five years," Shrestha adds. "Product finalizing and being in the market will be after five years."

The ideal contraceptive solution may be a nonhormonal product that also neutralizes sexually transmitted infections (STIs). This approach holds promise for an eventual contraceptive that also prevents STIs.

"At the moment, there is no anti-STI component, but we're making antibodies that bind the sperm and also neutralize gonorrhea and HIV," Shrestha says.

One type would target sperm and HIV and another would target sperm and gonorrhea.

A multipurpose product for contraception and a range of STIs would be the end goal. "I would love to have this product used by all women globally," Shrestha says. "But I believe antibody production has become cheaper over time, but it's not that cheap to be inexpensive for all global use." ■

REFERENCES

1. Shrestha B, Schaefer A, Zhu Y, et al. Engineering sperm-binding IgG antibodies for the development of an effective nonhormonal female contraception. *Sci Transl Med* 2021 Aug 11;13:eabd5219. doi: 10.1126/scitranslmed.abd5219.
2. Gotter A, Ernst H. What are the side effects of birth control pills? Healthline. Updated Aug. 3, 2018. https://bit.ly/3nFeGGI

COMING IN FUTURE MONTHS

- Pregnant adolescents need contraceptive counseling
- Update on abortion access in the United States
- Outcomes of pharmacist-prescribed contraception laws
- Latest on Title X changes and effects nationwide

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CME/CE QUESTIONS

1. **New research shows that people using which forms of contraceptives are less likely to use condoms along with their chief contraceptive?**

   a. Oral, hormonal birth control pills
   b. Diaphragm
   c. Long-acting reversible contraceptives
   d. Contraceptive patch

2. **In a new study on harassment of abortion providers, researchers found that which type of harassment is most common?**

   a. Physical violence, including bombings
   b. Phone calls or online defamation and intimidation
   c. Billboards with abortion providers' names and photos
   d. Protests at providers' homes

3. **According to Anita Dam, MSPH, women's preferences and values regarding contraceptive methods could be influenced by:**

   a. change in relationship status.
   b. cost of methods.
   c. research on safety.
   d. clinician's recommendation.

4. **According to Leo Han, MD, MPH, a study about online misinformation about abortion revealed that most people, including those who identified as pro-choice, liberal, and educated, thought abortions were:**

   a. easy to access in any state.
   b. less expensive than they are.
   c. legal only through week 12.
   d. less safe.

CME/CE OBJECTIVES

After reading *Contraceptive Technology Update*, the participant will be able to:

1. identify clinical, legal, or scientific issues related to development and provisions of contraceptive technology or other reproductive services;
2. describe how those issues affect services and patient care;
3. integrate practical solutions to problems and information into daily practices, according to advice from nationally recognized family planning experts;
4. provide practical information that is evidence-based to help clinicians deliver contraceptives sensitively and effectively.