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'Trust me, I'm a Doctor': examining the influence of threat perceptions, stigma, emotion, and distrust on reproductive health data falsification

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Abstract

The recent wave of abortion bans and restrictive legislation across the United States limits access to abortion care. While the societal impacts are wide-reaching, little is known about women's trust in health professionals and their willingness to disclose accurate health information in this context. Leveraging protection motivation theory, we conducted an online national survey ($n = 1,016$), to examine individuals' risk perceptions, stigma, negative emotion, distrust in health professionals, and intentions to falsify reproductive health data. Our findings show that individuals' reproductive health data threat appraisals (perceived susceptibility, perceived severity, and perceived stigma), and experience of negative emotion when interacting with health professionals are associated with higher distrust, whereas their coping appraisal (perceived control) is associated with lower distrust. Intentions to falsify are positively related to distrust, perceived susceptibility, and perceived stigma. Our findings demonstrate that concerns regarding privacy risk and resulting stigma can engender higher levels of distrust in health professionals and cultivate intentions to falsify reproductive health data. These insights highlight another potential negative impact of the changing reproductive health landscape in the United States on patients' relationships with health professionals and the information they intend to share. Such information can impact access to care, compromise the quality of care, and mislead healthcare providers, resulting in inaccurate diagnoses and adverse health impacts.

Keywords Reproductive health, Distrust, Privacy, Stigma, Emotion, Falsification

Introduction

Sexual and Reproductive health (SRH) represents a core aspect of human development crucial to individuals' physical, mental, and social well-being throughout all stages of life [1, 2]. SRH considers a broad range of health issues from pregnancy, infertility, and abortion, to cancer, malnutrition, and reproductive tract infections. It also encompasses issues which are highly influenced by societal norms, conditioned behaviors and stigma including accessibility of information, care, and counselling [2]. While access to SRH is widely viewed as a fundamental right [3], recent legal and societal changes have impacted

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access to a key aspect of SRH, abortion. Abortion is a highly common medical procedure experienced by many women throughout their lives, but it has been politicized in many countries and debated as a moral issue without consideration of the lived experience of many [4]. Many countries have recently legalized abortion, whereas others including the United States have diluted reproductive rights [5]. Indeed, abortion is a highly contentious social and political issue in the United States. In 2022, after almost a half century, the US Supreme Court's 1973 decision in *Roe v Wade* was overturned in *Dobbs v Women's Health Organization* [6] dramatically impacting access to abortion. As of 2025, 20 States have introduced abortion bans or restrictions on abortions at an earlier gestational age than those set out by *Roe v Wade*, with a further six states engaged in legal battles to introduce bans or restrictions (Sherman et al. 2024) [7].

The potential impacts of abortion restrictions are wide-ranging including increased infant mortality [8]. Changing legislation, divisive rhetoric, and polarized media discourse can also lead to broader societal impacts including fostering misunderstanding of what constitutes an abortion even among SRH professionals [9]. Stigma often exacerbates this confusion leading to a limited understanding of abortion and other key SRH issues, which can prevent women from accessing safe and legal services [3] including abortion, miscarriage and ectopic pregnancy care [10]. Additionally, negative emotions such as fear of mistreatment by healthcare staff or potential legal repercussions can lead women to seek abortion care outside the healthcare or legal system [11, 12] or engage in behaviors to protect themselves [13]. These protective measures beg the question, *What becomes of the relationship between patients and SRH professionals in this strained SRH landscape?*

Trust has long been considered fundamental to the doctor-patient relationship and the provision of effective health care [14, 15]. Trust refers to patients' willingness to be vulnerable based on a belief that health professionals are competent and have their best interests in mind. As trust in health professionals can facilitate accurate information disclosure by patients [16, 17] investigating micro-level mechanisms through which trust or distrust are propagated is vital to the quality and safety of healthcare provision [16]. In the SRH context, a lack of trust in doctors has been described as the biggest threat to pregnancy [18] and health professionals' efforts to protect privacy and ensure confidentiality is a critical factor in the quality of the healthcare relationship [19, 20], particularly in the current landscape [21, 22]. Relationships that deteriorate to the point of distrust—an unwillingness to be vulnerable—are likely to be particularly problematic [23–25]. Though distrust in general is far less understood than its more positive counterpart, medical distrust has

meaningful impacts on adherence to medical advice [26] and patient disclosure of accurate SRH information [27] endangering accurate diagnoses and decisions in the provision of care.

Due to the changing legal context and dearth of research on distrust, our understanding of distrust in SRH health professionals is limited. Analysis of social media discourse suggests an increase in online discussions related to SRH privacy and trust and a growing inclination to engage in distrusting behaviours such as withholding pertinent health information [27]. Our study builds upon existing assertions to contribute to this growing body of literature and academic discourse focused on patient relationships with SRH health professionals. Firstly, the study extends current understanding of distrust (e.g. [25]) through context sensitive theorizing regarding the factors that shape distrust in SRH professionals in a post-*Roe v Wade* world including perceptions of control and risks, and the role of emotion. Secondly and relatedly, we build on decades of research which situates stigma as a core public health issue [3], to illuminate the impact of anticipated stigma on the relationships individuals have with SRH professionals. Thirdly, the study explores how individuals' perceptions and distrust influence intentions to falsify SRH data. The study advances our understanding of how individuals' appraisals of the threats to their SRH data and resulting stigmatization, along with emotion experienced when interacting with health professionals leads to a distrust in health professionals. In this paper, we also seek to elucidate how individuals' threat appraisals and distrust relate to their intentions towards inaccurate SRH information disclosure, which could ultimately have negative health consequences.

Hypotheses development

Trust in healthcare professionals represents a fundamental building block in the delivery of care and strong relationships between patients and the healthcare professionals treating them [19, 20]. Extant research suggests trust impacts a wide range of patient behaviors including willingness to seek care, reveal sensitive information, and adhere to treatment regimens [19]. The absence of trust is often associated with fear, resistance, and seeking alternatives to health care [28]. Distrust can be defined as an unwillingness to be vulnerable to another based on pervasive negative expectations regarding interactions with them [29]. One important determinant of distrust development is through a high perceived threat from the other party.

Protection Motivation theory was proposed by Rogers in 1975 using individuals' threat and coping appraisals to explain their engagement in health-related behaviors. It proposes that individuals engage in two cognitive

processes when deciding whether to engage in a behavior [30]. These processes include the threat appraisal, individuals must believe they are vulnerable to a threat, and the threat is severe enough to warrant a behavioral change, and the coping appraisal; individuals must believe they can carry out the behavior needed to mitigate the threat [31]. These appraisals predict an attitudinal change, which drives intention to engage with the behavior [32].

The theory has been applied to numerous contexts due to its predictive power and robustness [32]. In addition to widespread utilization, a broad range of variables have been leveraged to represent the core components of protection motivation theory. For instance, Fox and Connolly [33] investigate how older adults' perceptions of privacy risk, and privacy concern (threat appraisal), and trust, and self-efficacy (coping appraisal) influence their adoption of mobile health applications. Similarly, Guo et al. [34] investigate how perceived vulnerability and perceived severity (threat appraisal) and response efficacy and self-efficacy (coping appraisal) impact attitude and intention to adopt mobile health among a broader age cohort. We argue that protection motivation theory represents a strong theoretical base for this study due to its application in similar contexts and its flexibility in terms of variables used to represent the core suppositions of the theory.

Threat appraisal

In this study, threat appraisal relates to individuals' cognitive consideration of the privacy risks to their SRH data. Threat appraisal is often measured with variables related to perceptions of risk susceptibility or vulnerability [32]. To measure the link between threat appraisal and an attitudinal variable, we focus on distrust in health professionals, due to the importance of trust in this context. We propose that perceptions related to the privacy threats facing SRH data are likely to impact the distrust individuals feel towards health professionals. While some studies focus on privacy concerns as predictors or attitudes or behaviors, concern variables are not always supported in the literature. For instance, in a study of Dutch app users, Bol, Helberger, and Weert [35] found that individuals with high concerns around surveillance were more likely to use reproductive health applications despite the volume of data they collect. Thus, and in line with PMT, we focus on threat perceptions as a proxy for privacy risk, as threat susceptibility measures an individual's perception of the risk their SRH privacy will be breached (Menard, Bott, and Crossler 2017). The recent removal of *Roe v Wade* has generated much discourse on how patients' privacy rights may be diminished [36]. We argue that if individuals believe there is a risk their SRH data may be compromised, they are more likely to

express an unwillingness to be vulnerable to the health professionals collecting the information and preserving its privacy.

H1a: Threat susceptibility will positively influence distrust in health professionals.

Threat appraisal also includes perceptions of threat severity or the perceived severity of outcomes stemming from the threat i.e. the compromise of health data (Menard, Bott, and Crossler 2017). We leverage perception of stigma as a proxy for threat severity. Stigma relates to an attribute widely viewed as negative by society [37] and refers to social processes including exclusion and may be experienced or anticipated based on adverse social judgement by a group or individual [38, 39]. To date, stigma has been explored in various health contexts [40, 41]. Health related stigma drives individuals' expectations of how they will be treated by health professionals, friends and family, and their ability to disclose their health-related experiences and diagnoses. Around the world, there is stigma related to many aspects of SRH from menstruation to menopause [42] and in many societies a belief that aspects of SRH, such as abortion, should not be discussed [4]. When access to SRH care is limited as is the current case in many US states, discussing and seeking care for SRH issues can be stigmatized (Barnes and Fledderjohann 2020).

The outcomes of SRH stigma are far reaching, leading women to avoid or delay seeking care across a range of SRH issues including menstruation [42], unplanned pregnancy antenatal care [43], and abortion [3]. These withdrawal behaviors are typical of a distrusting relationship. While stigma is widespread in the SRH context, measuring stigma, proves difficult, due to the complexities associated with stigma and the individuality in which each person perceives and anticipates it [38]. In this study, we focus on perceived or anticipated stigma. Stigma related to abortion and other SRH decisions has been shown to lead to non-disclosure and may impact social relationships [3]. Thus, we argue if individuals anticipate they will experience stigma if their SRH data is compromised, they will be more likely to express an unwillingness to be vulnerable and fear of negative outcomes that accompany distrust in health professionals.

H1b: Perceived stigma will positively influence distrust in health professionals.

Recent adaptations of protection motivation theory acknowledge the importance of emotion to impact attitudes driven by cognitive processes [44]. Emotions are a bodily consciousness that signals the importance an event has for a subject [45]. We argue that emotion is

of particular relevance in the SRH context, where many patient interactions with physicians are likely to be perceived as “survival-relevant.” Indeed, theories of emotion posit that the emotions a feeling subject experiences will depend on the perceived consequences of their interactions with others for the survival, well-being, goals and personal plans of the self [5, 46]. Negative emotions such as fear, anxiety and anger are likely to be produced in social structures where individuals lack sufficient power [47, 48], a key facet of the relationship between patient and healthcare provider [49], especially in this emerging context.

To explore the role of emotion, we leverage the negative affect variable developed by Warr [50] which describes high-activation unpleasant affect such as fear and anxiety. Affect is a suitable lens to examine the relational actions of patients toward healthcare providers, while emotion represents the embodied experience of these actions [51]. Theory suggests that high activation, negative emotions such as fear lead to distrust [52]. In the healthcare context, Balfe and Brugha [53] examined patients’ reluctance to disclose their STI testing to others and found that distrust in healthcare providers was a barrier fuelled by negative emotions and stigma concerns. As a result, we argue that individuals who experience negative affect when interacting with health professionals, will also express higher levels of distrust.

H1c: Negative Affect will positively influence distrust in health professionals.

Coping appraisal

Protection motivation theory posits that individuals also consider their ability to cope with threats, termed the coping appraisal [30]. This proposal is in line with the conceptualization of distrust as an unwillingness to be vulnerable based on negative expectations, as an ability to cope with threats attenuates the probability of interactions leading to a negative outcome. To examine this, we use perceived control or individuals’ perceptions that they can control the privacy of their SRH data. We propose that perceived control will reduce distrust if individuals believe the control over their personal reproductive health data rests with them and not health professionals.

H1d: Perceived control will negatively influence distrust in health professionals.

Intention to falsify

Extant privacy research demonstrates that individuals engage in privacy-protective behaviors including disclosing false information as a means of protecting their data privacy when they perceive a threat [54]. Research provides empirical evidence of privacy-protective behaviors

in the SRH context, with individuals engaging in non-disclosure of SRH data due to fears of stigmatization [3]. This demonstrates the link between threat perceptions and disclosure behavior. We propose a similar inclination with regards to falsifying SRH data disclosed when health professionals are distrusted. Indeed, extant research shows trust can positively influence patients’ willingness to disclose health data [55], thus, it is important to investigate how distrust impacts disclosure intentions. We propose that distrust in health professionals, and threat appraisal variables (threat susceptibility and perceived stigma) will all heighten individuals’ intentions to falsify SRH data. As coping appraisal i.e. perceived control focuses on individuals’ belief, they can control how their SRH data is disclosed, it is likely this perception may also drive future falsification intentions as if individuals believe they control what data to disclose, they may be less likely to falsify the data they choose to disclose. Lastly, while affect has not been examined in terms of its impact on falsification of health data, research shows emotion can impact individuals’ willingness to disclose health data (e.g. [53]). Thus, we explore if negative affect impacts falsification intentions in the reproductive health context.

The proposed relationships are presented below in Fig. 1.

H2a: Distrust will positively influence intentions to falsify reproductive health data.

H2b: Threat susceptibility will positively influence intentions to falsify reproductive health data.

H2c: Perceived stigma will positively influence intentions to falsify reproductive health data.

H2d: Perceived control will negatively influence intentions to falsify reproductive health data.

H2e: Negative Affect will positively influence intentions to falsify reproductive health data.

Methods

The questionnaire was largely developed by adapting validated scales to the current context. Threat susceptibility (5 items) was adapted from Menard, Bezaz, and Mzough [56], affect was adapted from Warr [50] using 4 items, perceived control (4 items) was adapted from [57], distrust (10 items) was adapted from Min and Zickar [58], intention to falsify SRH information (3 items) was adapted from Son and Kim [54] and perceived stigma (4 items) was self-developed. All survey items are detailed in Appendix A. In addition, household income, age, political affiliation, religious affiliation, abortion restrictions, and prior abortion experience were included as control variables. Control variable questions are detailed in Appendix B. Abortion restrictions refer to the level of

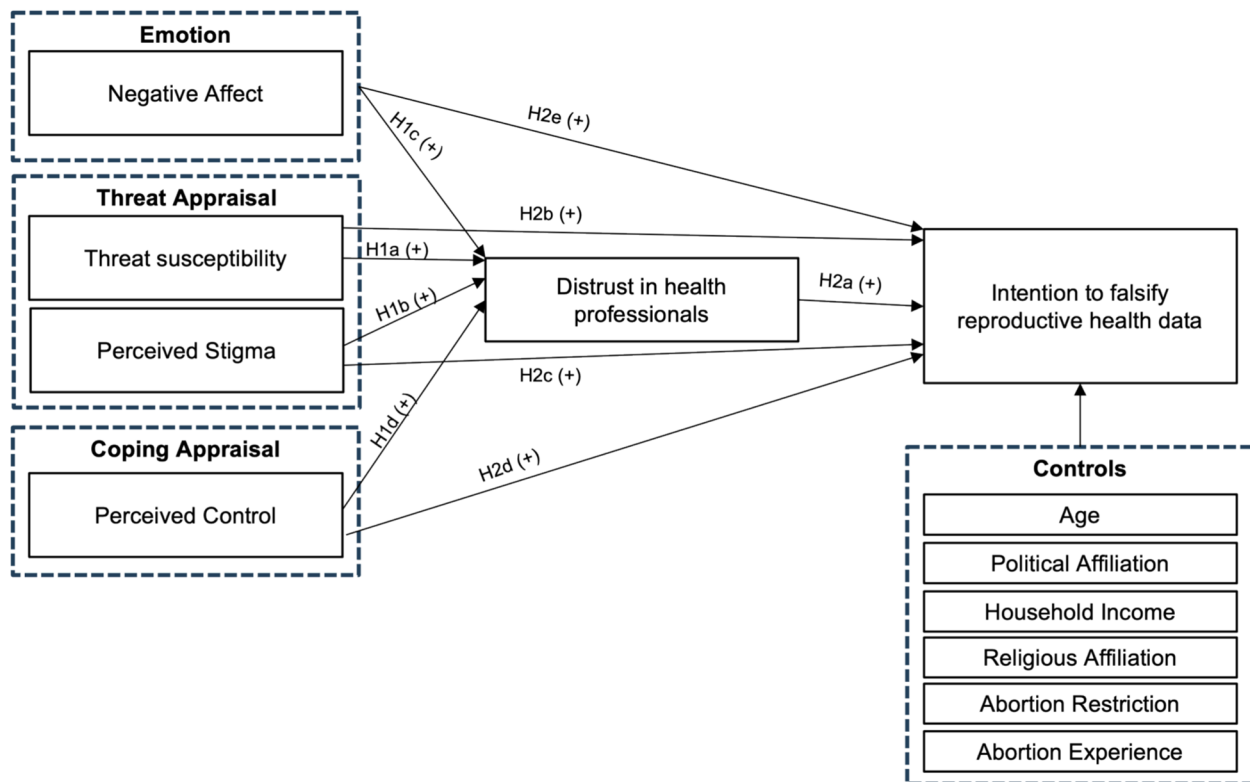


Fig. 1 Proposed research model

protections for abortion or restrictions on abortion and was manually coded based on the respondents stated state of residence. Using the state of residence, we coded the variable based on the seven categories of abortion restrictions outlined by the Guttmacher Institute [59] ranging from most restrictive states where abortions are available in very limited circumstances to most protective where abortion access is protected. This study was approved by the Dublin City University Research Ethics Committee, which reviews submissions based on the European SATORI (Stakeholders Acting Together on the Ethical Impact Assessment of Research and Innovation) Ethics Assessment Framework.¹

Responses were collected using Qualtrics panel services with filters included to ensure respondents were women aged 18+ residing in the United States. Responses were collected over a one-week period from May to June 2023. Qualtrics removed all incomplete responses, responses failing attention check questions, and 'speeder' responses. The final sample size was 1046 respondents. Descriptive statistics are provided in Table 1. below. In terms of the reproductive health experience of the respondents in our sample, 14.15% ($n=148$) stated they had previously had an abortion, 27.9% had previously

availed of emergency contraception ($n=292$), and 31.26% had previously experienced a miscarriage ($n=327$).

Results

In line with the thresholds for multivariate analysis [60], all items met recommended kurtosis and skewness thresholds, and all variables had variance inflation factors (VIF) below 10 demonstrating that multicollinearity is not an issue. Confirmatory factor analysis (CFA) was conducted in AMOS v28.0. The model demonstrated good fit statistics [60]: χ^2/df : 4.626, CFI: 0.949, RMSEA: 0.059, SRMR: 0.049. The validity and reliability of all constructs was examined. Convergent validity requires all constructs that should converge to strongly correlate [61] and is assessed by calculating the average variance extracted (AVE). As all variables had AVE scores above 0.50, convergent validity is achieved [62]. Discriminant validity requires items on one construct to be sufficiently different from items on other constructs [61]. Discriminant validity was tested by comparing the square root of the AVE with the inter-construct correlations [60]. As the square root of AVE was higher than inter-construct correlations, discriminant validity was achieved, as shown by bold diagonal values in Table 2 below. Reliability was assessed by calculating the composite reliability (CR). With CR scores above 0.70, all constructs were reliable

¹<https://satoriproject.eu/framework/section-1/>

Table 1 Sample characteristics

	Category	%	N
Abortion Restrictions	Most Protective	21	2.0
	Very Protective	126	12.0
	Protective	179	17.1
	Some restrictions and protections	103	9.8
	Restrictive	215	20.6
	Very Restrictive	56	5.4
	Most Restrictive	346	33.1
Age	18–20	79	7.6
	21–29	265	25.3
	30–39	261	25.0
	40–49	180	17.2
	50+	261	25.0
Education	High school degree or equivalent	279	26.7
	Some college, no degree	294	28.1
	Associate degree	137	13.1
	Less than a high school diploma	33	3.2
	Bachelor's degree	198	18.9
	Master's degree or higher	105	10.1
Marital Status	Married	370	35.4
	Single, never been married	439	42.0
	Divorced	123	11.8
	Separated	23	2.2
	Civil Union	40	3.8
	Widowed	42	4.0
Religious Views	No Answer	9	.9
	Not at all religious/spiritual	295	28.2
	Somewhat religious/spiritual	523	50.0
Political views	Very religious/spiritual	228	21.8
	Extremely Right Wing	73	7.0
	Right Wing	105	10.0
	Slightly Right Wing	72	6.9
	Center	509	48.7
	Slightly Left Wing	80	7.6
	Left Wing	137	13.1
	Extremely Left Wing	70	6.7

[63]. The standardized regression weights are presented in [Appendix A](#).

Hypothesis testing

Hypotheses were tested using Structural Equation Modeling (SEM) in AMOS v28. The model demonstrated

strong fit [60]: CMIN/DF (chi-square divided by degrees of freedom): 1.244, CFI: 0.999, RMSEA: 0.015, SRMR: 0.017. The first set of hypotheses focus on the drivers of distrust in health professionals. H1a proposed a positive relationship between threat susceptibility and distrust. This was supported (H1a: β 0.173, $p < 0.001$). H1b proposed a positive relationship between perceived stigma and distrust. This was supported by the data (H1b: β 0.360, $p < 0.001$). H1c proposed a positive relationship between negative affect and distrust. This was also supported (H1c: β 0.339, $p < 0.001$). In H1d, a negative relationship between perceived control and distrust was proposed. This relationship was supported (H1c: β -0.200, $p < 0.001$).

H2a-H2e focused on the drivers of intention to falsify SRH data. As hypothesized, distrust had a positive association with intention to falsify (β 0.528, $p < 0.001$). H2b proposed threat susceptibility would be positively related to intention to falsify. The data supported this hypothesis (β 0.201, $p < 0.001$). H2c proposed that perceived stigma would be positively related to intention to falsify. The data revealed a significant but negative association (β 0.065, $p < 0.05$). In H2d, a negative association between perceived control and intention to falsify was proposed. The data revealed a significant but positive association (β 0.109, $p < 0.001$). H2e proposed a positive association between negative affect and intentions to falsify, however the data found support for the reverse relationship demonstrating that negative affect had a significant, negative influence on falsification intentions (β -0.087, $p < 0.01$).

Interestingly, there were several significant relationships between control variables and the intention to falsify. Age had a negative influence on intention to falsify (β -0.081, p : 0.005) with older patients expressing lower falsification intentions. Political affiliation had a negative relationship with falsification intention (β -0.054, p : 0.005) with respondents higher on the scale ranging from extremely right wing to extremely left wing expressing lower intentions to falsify. Respondents with higher household income also expressed higher falsification intentions (β 0.073, p : 0.002). Lastly, respondents with prior abortion experience expressed greater intentions to falsify (β 0.090, $p < 0.001$). The effect of control variables

Table 2 Reliability and validity testing

	CR	AVE	Threat suscept	Perceived Control	Falsify Intention	Distrust	Stigma	Affect
Threat suscept	0.900	0.750	0.866					
Perceived Control	0.911	0.720	-0.071*	0.848				
Falsify Intention	0.966	0.904	0.432***	-0.053	0.951			
Distrust	0.942	0.554	0.424***	-0.275***	0.571***	0.744		
Stigma	0.900	0.693	0.443***	-0.061†	0.424***	0.525***	0.833	
Affect	0.933	0.778	0.255***	-0.167***	0.256***	0.510***	0.277***	0.882

† $p < .10$, * $p < .05$, *** $p < .001$

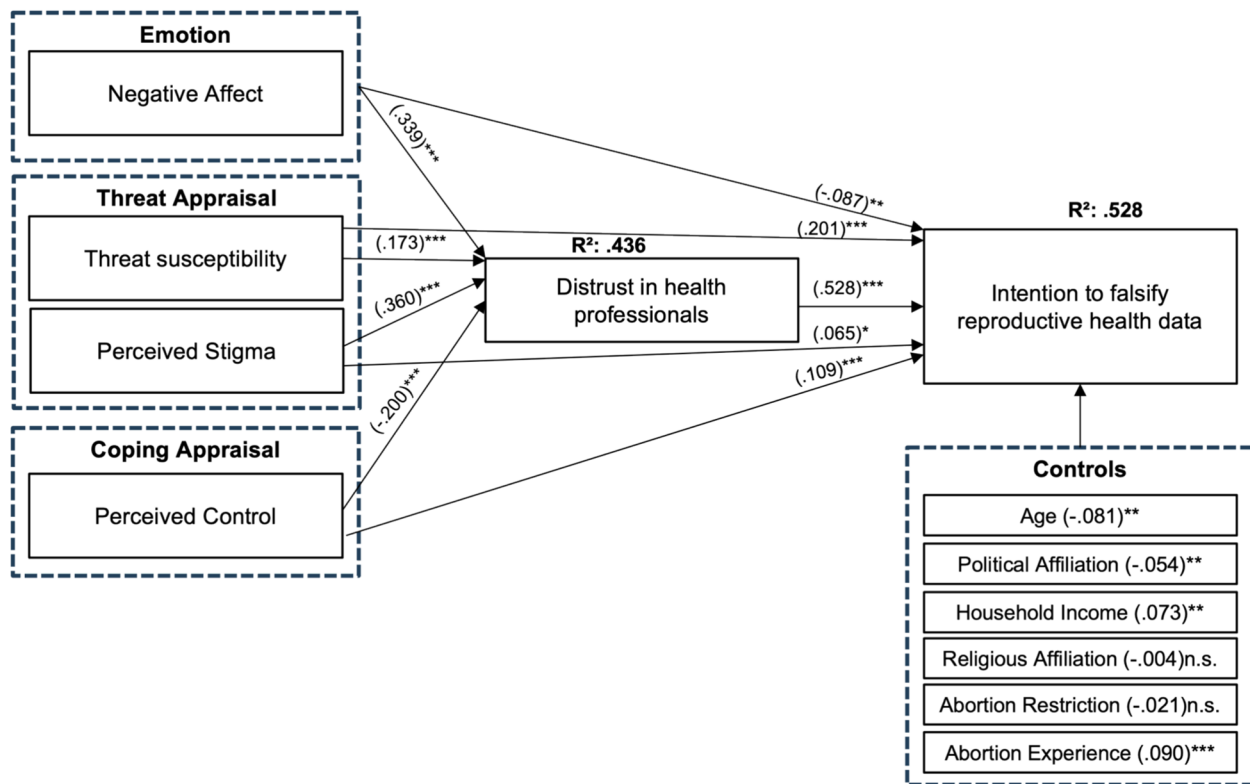


Fig. 2 Research model findings

on distrust was also explored with a negative association observed between household income and distrust (β 0.073, $p < 0.05$). The model explained 52.8% of variance in distrust in health professionals and 43.6% of variance in intention to falsify reproductive health data.

All results are presented in Fig. 2 below.

Discussion

SRH is of critical importance to individual well-being and the equitable development of society [64]. However, the politicization of abortion and legal restrictions in many US States may impact not only women's access to care but their emotions and perceptions and how they interact and share information with SRH professionals. This study elucidates how individuals' perceptions of risk and stigma and negative emotion relate to distrust in health professionals and intentions to falsify SRH data in a post-Dobbs decision context.

First, in line with protection motivation theory, our findings highlight the importance of individuals' appraisal of the privacy threats facing their SRH data in influencing their distrust of health professionals. It is important to note that the more severe threat is not the technical breach but the social consequences of disclosure, particularly stigma. In this context, patients may not sharply distinguish between system-level breaches and a judgemental response from a health professional. From the

patient's perspective, both may represent a loss that can expose them to stigmatization. Thus, while protection from data breaches is necessary, stigma emerges as the core concern shaping distrust and falsification intentions in this sensitive SRH context. Thus, with regards to threat susceptibility, individuals who believe their SRH information is at risk of a breach express higher levels of distrust in the health professionals charged with collecting and protecting this information. In terms of perceived stigma, individuals who believe they will be treated differently or discriminated against if individuals have access to their reproductive health data also express higher levels of distrust. Additionally, findings demonstrate the important role of emotion, with individuals who experience negative emotions when interacting with health professionals expressing higher distrust. Lastly, perceived control over the privacy of one's SRH data is related to lower levels of distrust, which may demonstrate that individuals believe the relationship with health professionals is more balanced when they have the ability to control how their data is collected and used.

Respondents' perceptions and distrust were also related to intentions to falsify SRH data. First, distrust had the strongest association with falsification intentions. When individuals felt they could not trust the intentions of health professionals, they were more likely to engage in the falsification of SRH data. Threat susceptibility or

the belief the privacy of SRH data is under threat and perceived stigma also coincide with higher falsification intentions. As falsification of personal data is a common privacy protective behavior individuals engage in to preserve the privacy of that data [54], it is unsurprising that individuals will falsify reproductive health data when they think privacy is at risk and they may experience negative treatment if the privacy of the data is breached. However, given the importance of accurate health data when receiving health services, this practice is worrisome for health professionals and patients themselves. There were also two surprising results. Perceived control was positively associated with falsification intentions with higher perceptions of control associated with higher intentions to falsify data, and negative affect was negatively associated with falsification intentions. While these findings are contrary to our hypothesis, there are plausible explanations. Perceived control measures individuals' perception of their ability to control how their data is collected and used. Thus, respondents in this study expressing higher levels of perceived control may express higher intentions to falsify health data as they view this as an exercising of this control in practice. This aligns with protection motivation theory too, and our positioning of perceived control as a form coping appraisal, as individuals who believe they can engage in the behaviors needed to mitigate threats such as controlling information disclosure or providing false data, are more likely to engage in these behaviors.

Finally, our findings show that negative emotions are negatively associated with intentions to falsify personal health data. In other words, individuals experiencing negative emotions with healthcare professionals express lower intentions to falsify health data. This is contradictory to prior research that indicate negative emotions such as fear of negative outcomes can lead to non-disclosure of personal health information [65]. However, this relationship might also be explained by prior research which demonstrates that SRH experience many negative emotions as a result of their specific health condition or treatment (e.g. [66–68]), rather than aimed at negative feelings toward their health provider specifically.

Several control variables were significantly related to falsification intentions. First, older respondents were less likely to falsify reproductive data. Older respondents may have more established relationships with their reproductive care providers, or they may believe some aspects of SRH such as family planning do not apply to them. Prior literature has suggested that abortion is more stigmatized among young women [69]. This may partly explain older women expressing lower falsification intentions. Political affiliation had a negative influence on falsification intentions with individuals identifying as 'more left wing' less likely to falsify SRH data. While political identity does

not always align with personal beliefs, the finding is not surprising however it would be wrong to assume that those identifying as 'more left wing' are immune from social stigma in personal or familial contexts. Individuals reporting higher household income levels expressed higher falsification intentions. Individuals with high household incomes might belong to social circles or communities where abortion is stigmatized and/or it may conflict with the social image or reputation that they wish to present.

Lastly, respondents who had prior abortion experience expressed higher falsification intentions. Abortion is a contentious issue among the US public, with 61% of people believing abortion should be legal in all or almost all circumstances, compared to 37% believing abortion should be illegal in all or almost all circumstances [70]. Despite the differing views, abortion is a health service many women avail of throughout their life [71]. Due to the debate abortion garners, it is plausible that individuals with past abortion experience may falsify SRH information in interactions with health professionals particularly given the confusion around potential legal implications and the stigmatization they anticipate [3]. The decision to have an abortion can be emotionally complex. In addition, research shows that women often experience negative reactions when disclosing prior abortions [72]. Therefore, individuals who have felt negative emotions following an abortion or experienced negative responses from others may not wish to revisit this decision.

Contributions to research and future research

The insights from this study contribute to our understanding of several important patient perceptions driving distrust in health professionals and intentions to falsify SRH data. The findings of our study demonstrate several factors that increase individuals' intentions to falsify reproductive health information in future interactions with reproductive health professionals. This is important as research on disclosure behaviours between patient and healthcare provider are scarce [73], even though disclosure behaviours such as withholding information or lying about the trust is common in this context [74] and have serious implications for the accuracy of diagnoses and patient health outcomes. Given the polarizing views reproductive data can garner [75], it is unsurprising that patients would engage in falsification behaviors to protect their privacy and prevent any stigmatization they believe could occur.

Our findings demonstrate that distrust in healthcare providers influences falsification intentions, which extends prior social media discourse research which showed that a decrease in trust toward clinicians related to the Dobbs decision and patient intentions to withhold SRH data [27]. Withholding and falsification behaviors,

while common could present challenges for health professionals and drastically impact the accuracy treatment patients receive. Future research should thus focus on these privacy-protective behaviors on a deeper level to determine the different types of SRH information individuals may seek to falsify and how the fears around privacy and stigma driving these intentions can be assuaged. Research could build upon these findings to track individuals' threat and coping appraisals and distrust over time as the regulatory climate continues to change and the impacts on SRH delivery become clearer. In addition, future research could focus on a broader set of privacy-protective behaviors including falsification, withholding, and refusal [54]. Additionally, research in distrust is relatively scarce [58], despite the acknowledgment that low trust and distrust are distinct concepts [58, 76] and efforts to build trust in healthcare may have little effect on attitudes or behaviors that are rooted in distrust or mistrust [76]. Therefore, researchers have identified the need to investigate the antecedents and consequences of distrust in medical systems and in providers [4]. Prior research has demonstrated that when trust is present, patients are more likely to disclose accurate information [55], including sensitive and potentially stigmatizing information [15]. Conversely, when trust is damaged or absent, patients may engage in behaviors which could result in negative outcomes such as avoiding treatment [28]. Our study extends the literature by demonstrating that patient distrust in their healthcare provider can influence falsification intentions. To build upon these insights, future research could apply experimental research designs to examine the efficacy of trust rebuilding approaches on trust and willingness to disclose accurate SRH data.

Additionally, the study demonstrates the influence of perceived stigma on distrust in healthcare providers, which adds to prior research finding that stigma influences medical mistrust toward systems [77]. These findings extend existing research on outcomes of stigma in a number of ways. Firstly, the findings highlight that perceived or anticipated stigma may encourage women to falsify the health data they disclose when interacting with healthcare professionals. Extant research in the SRH context demonstrates the widespread impacts of stigma including avoidance of care [3, 43], and negative physical and mental health implications [41]. However, our findings show that even where access to SRH is possible, stigma creates an environment where healthcare relationships have deteriorated to the point that safe healthcare may not be possible. This is an important insight as without a safe place to discuss SRH, especially abortion, women's mental health can suffer [3, 4]. Future research could adopt a more in-depth examination of which types

of stigma (e.g. anticipated, enacted, internalized) drive disclosure and care avoidance behaviors [43].

Secondly, our findings demonstrate how protection motivation theory may be a useful lens to demonstrate how stigma leads to falsification of health data, answering calls to address women's experiences of abortion stigma in more detail by utilizing theory [4]. Specifically, viewing anticipated stigma as an individuals' perception of the threats associated with the disclosure of their SRH data draws a theoretical link between the heightened distrust in healthcare professionals and explains why this may lead individuals to engage in the falsification of their SRH data to reduce this risk. Finally, there is a dearth of research evaluating the impacts of strategies to reduce stigma and discrimination [64]. However, introducing distrust and the relationship between patient and healthcare professionals as a mechanism underlying the negative impact of stigma allows us to better identify areas for intervention. These distrusting relationships are shaped by the wider stigmatized context in which patients and their healthcare providers interact and SRH providers may be seen as a manifestation of the broader institutions that they represent [19, 78]. Tackling distrust through opportunities for clarifying expectations or highlighting value congruence [79] may be an avenue for disrupting its negative impact. Finally, negative affect has not been examined in terms of its impact on falsification of health data previously, and our findings demonstrate that even when women do seek care from healthcare providers, those who experience negative emotions when interacting with health professionals exhibit higher distrust in SRH professionals and these negative emotions have an indirect impact on falsification intentions.

Practical implications

The findings present valuable insights for health professionals, health providers, and those responsible for SRH education and policies. Threat susceptibility, perceived stigma and experience of negative emotions coincide with higher levels of distrust in health professionals, but perceived control is associated with lower levels of distrust. Thus, health professionals and providers should ensure patients receiving SRH services are informed on how their health data is protected against breaches, and the different forms of control they have over their SRH data. These communication efforts could be both verbal before and during appointments and in written format sent to patients before appointments and shared via posters and leaflets throughout the physical care setting. To further enhance control perceptions, patients should be afforded the opportunity to ask questions relating both to their care and to the privacy and security of their personal data. In an effort to reduce falsification behaviors, health professionals should explain to patients why

certain SRH information and health history is requested and how this relates to their care. In some instances, health care professionals may consider putting in place strict confidentiality assurance protocols to reassure patients about the safety of their SRH data, reducing fears of exposure and stigma.

Broader communication and education efforts and campaigns by non-profits could further seek to tackle misinformation and provide a neutral information source to ensure patients are accurately informed of how regulatory changes impact their reproductive care across the United States. Researchers have issued calls for the reclaiming of women's reproductive health in ways which empower them and reduce stigma [42]. Furthermore, these efforts could highlight support groups and other information sources, as social support is fundamental for individuals who may experience health stigma [39]. Indeed, the prevalence of SRH stigma across society coupled with the absence of effective strategies to reduce stigma point to the urgent need to address stigma in this context [3]. Communication efforts could provide a starting point to begin to undo some of the damage misinformation can cause.

Trust in the healthcare system is a significant objective of public policy [80]. Given the uncertainty of reproductive health care policy and the associated threat of distrust in healthcare professionals, policymakers can play an important role in actively communicating to patients. These communication efforts can focus on reassuring patients that they can still trust their health professionals and that their rights to confidentiality are not threatened or otherwise diminished. Similarly, policymakers may consider establishing legal protections against discrimination based on SRH choices thus empowering individuals to share accurate information without fear of social or professional repercussions, and specifically stigma.

Study limitations

There are limitations within this study which must be noted. First, the study sample only consists of cisgender women and thus like similar studies focused on aspects of SRH care such as abortion, the study and the findings do not speak for all women or all people in receipt of SRH services [10]. When recruiting respondents for the survey, individuals who were assigned female at birth irrespective of gender identity were invited, but this resulted in a very small number of responses, which could not be used to analyze differences by gender identity and as a result those responses were dropped from the analysis. Second, the study involves a cross-sectional survey with data collected at one point in time after *Roe v Wade* was overturned. As research notes, the overturning of *Roe v Wade* and the subsequent media coverage and regulatory changes not only caused confusion around

what constitutes abortions [10] but generated new privacy concerns and possibly changed patient-doctor relationships [21]. We believe that this time is crucial to explore patients' perceptions of these relationships and their intended disclosure behaviors. However, we also acknowledge that the future of reproductive care remains uncertain in many States and these perceptions may further change over time. Future research could revisit these research questions at a later point or using a longitudinal approach. Third, the study focuses on intended falsification behaviors. While there is broader evidence for falsification behavior in this SRH context (e.g. [27]) and behavioral intentions are a common proxy for actual behaviour [81], their relationship with actual behavior is complex particularly in this high-risk context. Where possible, and ethically sound, it would be interesting to explore actual falsification behaviors in the future.

Relatedly, the translation of intentions into behavior may depend on patients' dependency and vulnerability. High health need may not mitigate or repair distrust but could force disclosure despite concerns or drive patients to alternative sources of care. This distinction matters because low trust can sometimes be offset by high health need, but distrust is often more intractable, motivating avoidance or substitution rather than compliance [82]. In Hamm et al.'s [83] study of the Flint water crisis their findings illustrate, even acute vulnerability did not erase distrust but redirected trust to alternative referents. In this case, high dependency motivated residents to seek new trustees (e.g., community leaders, neighbours etc.) rather than to comply with distrusted authorities. Future work should explicitly test competing threat conditions e.g., whether dependency and vulnerability moderates the distrust-falsification relationship, and whether acute health needs lead to disclosure within the health system or to substitution with alternative, potentially less safe, avenues for care.

Lastly, data were collected for this study during the Summer of 2023, a year after the removal of *Roe v. Wade*. This timeline allowed us to examine patients' perceptions at a time when they understood the potential ramifications of this decision to their reproductive care. However, as legislative battles continue in some states regarding abortion restrictions and protections, and media discourse covers abortion and other reproductive care issues at differing rates, it is likely patients' perceptions may continue to evolve over time. Furthermore, as time passes, patients are likely to have had more experiences with reproductive health professionals under new restrictions, which in turn is likely to impact their perceptions, emotions, and potentially their data disclosure behaviors and intentions. Thus, this model could be revisited in light of the current media discourse and legislative climate, or research could qualitatively explore how the

doctor-patient dynamics in the reproductive care context have shifted in the time since this study was conducted. Such inquiry could provide further depth of understanding of these shifting dynamics and the nuances of how this impacts patient data disclosure and falsification.

Conclusion

The recent reversal of *Roe v Wade* and the resultant wave of abortion regulation introduced across the United States and conflicting media and public discourse obfuscate the legal protections afforded to patients and their personal data when availing of SRH services. This changing environment may foster concerns regarding potential breaches of reproductive health data, stigmatization stemming from these breaches and misunderstanding of key SRH issues, and a distrust in health professionals. As a result, patients may be likely to falsify reproductive health data as a means of preserving the privacy of their SRH data. Both trust and accurate data disclosure are cornerstones of the patient-doctor relationship, to ensure patients are treated with respect and receive accurate reproductive care. The doctor-patient relationship is also pivotal to SRH, an issue of critical importance to individuals and society. Thus, it is of utmost importance to effectively educate patients on the measures in place to protect their physical and data privacy and their rights. It is also imperative to equip health professionals with approaches to rebuild trust with patients and effectively communicate the rights and controls they have over both their reproductive care and the resultant data this care creates [6, 7, 16, 23, 24, 37, 41, 77, 80].

Appendix

Survey items

Construct	Item	Wording	Std R.wg
Threat Susceptibility	TSUS1	My reproductive health data is at risk for becoming compromised	0.851
	TSUS2	It is likely that my reproductive health data will be breached	0.930
	TSUS3	It is possible that my reproductive health data will be compromised	0.812
Stigma (self-developed)		If others had access to my reproductive health data, I worry I would be treated differently or discriminated against by...	
	STMA1	My family and friends	0.778
	STMA2	My employer	0.886
	STMA3	The community	0.879
	STMA4	Health Professionals	0.781

Construct	Item	Wording	Std R.wg
Affect		Thinking back to your recent interactions with health professionals, approximately how often have you felt the following during these interactions	
	AFT1	Anxious	0.919
	AFT2	Nervous	0.947
	AFT3	Tense	0.878
Perceived Control	AFT4	Worried	0.774
	CON1	I think I have control over what reproductive health information is released by health professionals	0.814
	CON2	I believe I have control over how my reproductive health information is used by health professionals	0.888
	CON3	I believe I have control over what reproductive health information is collected by health professionals	0.863
Distrust	CON4	I believe I can control my reproductive health information provided to health professionals	0.827
	DIST1	I worry about future interactions with health professionals	0.696
	DIST2	It is stressful to interact with health professionals	0.656
	DIST3	Health professionals would engage in damaging and harmful behavior to pursue his/her own interest	0.827
	DIST4	Health professionals would behave in a deceptive and fraudulent way	0.850
	DIST5	Based on past experience, I cannot rely on health professionals with complete confidence	0.784
	DIST6	I am suspicious of the way health professionals will act in the future	0.812
	DIST7	Health professionals would use me for his/her own benefits	0.811
	DIST8	I find it necessary to be cautious with health professionals	0.746
	DIST9	I want to distance myself from health professionals	0.736
Falsification Intention	DIST10	I will not count on health professionals for important things	0.723
		Please specify the extent to which you would falsify some of your reproductive information if it is asked for by health professionals:	
	FALSE1	Not probable ... Probable	0.945
	FALSE2	Very unlikely ... Very Likely	0.978
	FALSE3	Impossible ... Possible	0.929

Control variables questions

Construct	Wording
Age	What is your current age in years?
Household income	What is your current total household income?
Political Affiliation	Generally speaking, how would you describe your political orientation? (Extremely right wing – Extremely left wing)
Prior Abortion Experience	Have you ever had an abortion?
Religious Affiliation	In terms of religion, how would you best describe yourself? (Extremely Religious – Not Religious at All)
Abortion Restriction	Based on state of residence, this was manually coded based on 7 categories from Guttmacher Institute ranging from most protective – most restrictive

Authors' contributions

All authors developed the study design. GF completed data acquisition and analysis and data interpretation All Authors drafted the manuscript text and reviewed it.

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Declarations

Competing interest

The authors declare no competing interests.

Data availability

No datasets were generated or analysed during the current study.

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