

Investigating Legal Professionals' Knowledge and Attitudes Toward Technology-Enabled Abuse in Intimate Partner Violence

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ABSTRACT

Abusers use technology to facilitate and exacerbate intimate partner violence (IPV). Legal mitigations are an important avenue for victim-survivors to escape abuse, but legal professionals face many challenges when it comes to understanding, explaining, and managing cases of this *technology-enabled abuse*. The intersection between the law and technology-enabled abuse has been under-researched, despite technology becoming more prominent in civil and criminal legal proceedings around abuse. In this study, we addressed this research gap through semi-structured interviews with 9 legal professionals in the United States. We found that legal professionals are aware of multiple ways technology can be used to help or harm victims of IPV, and employ strategies to specifically support victims of abuse. Legal professionals also highlighted the ways marginalized demographics are further harmed by technology-enabled abuse, alongside structural and educational gaps in the legal system. We recommend further exploration of the potential avenues for education around technology-enabled abuse.

CCS CONCEPTS

• **Human-centered computing** → *Empirical studies in HCI*; • **Security and privacy** → *Human and societal aspects of security and privacy*.

KEYWORDS

Intimate partner violence, legal professionals, technology-enabled abuse

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1 INTRODUCTION

Intimate partner violence (IPV) is physical, sexual, or emotional abuse perpetrated by a current or former dating partner [1]. Worldwide, one-third of women experience any kind of domestic violence [36], although this number is likely drastically under-reported [6, 9]. Experiencing IPV is a risk factor for a number of physical consequences [13], such as chronic pain [37], migraines [35], gastrointestinal complications [26], diabetes [21], and harm to the reproductive system [17, 30]. Psychological complications are also severe, with victim-survivors experiencing high rates of post-traumatic stress disorder [5], depression [20], suicidal ideation [19], insomnia [12], and substance abuse [39].

In an increasingly digitized world, technology provides added opportunities for perpetrators of IPV to control, monitor, and abuse their victims [11, 22]¹. Eighty percent of stalking victims reported that technology was involved in their victimization [24]. Abusers use GPS tracking, spyware, or phone records to increase surveillance of their target [4] or harass their target with texts, calls, social media posts, and manipulation of smart home devices [33, 34]. Shared electronic devices or accounts can erode privacy in a relationship, isolating victim-survivors and making disentanglement from the relationship harder to accomplish [22].

Current research in human-computer interaction (HCI) and usable privacy and security communities has studied the types of technologies used to perpetrate abuse in IPV [2, 10, 15, 25, 38]. Meanwhile, a growing body of work has identified ways in which technologies could connect victim-survivors with resources and communities [7] and prevent or mitigate abuse [16]. While these strands of work provide valuable insights into how technologies could harm or benefit the victim-survivors, there is a lack of focus on how their supporters, such as legal professionals, could be better supported at the intersection of laws and technologies. In mitigating technology-enabled abuse in IPV, victim-survivors commonly seek help through legal services [18, 23]. However, in a constantly changing landscape of laws and technologies, legal professionals might face a series of challenges in understanding, explaining, and

¹Abusive behavior that is enabled, facilitated, or exacerbated by modern technologies is referred to as *technology-enabled abuse* in this paper.

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managing cases of technology-enabled abuse. Understanding legal professionals' knowledge (or lack thereof), practices, and attitudes toward technology-enabled abuse in IPV is critical in informing diverse stakeholders (e.g., policymakers, lawyers, and educators) of how they could better support cases of technology-enabled abuse. To address this gap, we sought to investigate the following research questions (RQs):

- RQ1:** What do legal professionals know about technology-enabled abuse? How do they perceive it?
- RQ2:** How do legal professionals support clients who are facing technology-enabled abuse?
- RQ3:** What do legal professionals expect from the legal system and those responsible for helping victim-survivors of technology-enabled abuse?

To answer the three questions, we conducted 9 semi-structured interviews with legal professionals who are experienced or appropriate to handle cases of technology-enabled abuse. Our findings highlight: 1) Legal professionals are aware of a variety of ways in which technologies could be used to perpetrate abuse, posing greater risks for some marginalized and vulnerable populations; 2) Legal professionals also endorse the benefits that technologies could offer to help victim-survivors, which they rely on in their legal practices when helping victim-survivors; 3) Legal professionals have expressed an urgent need for enhancing legal education and training to other professionals handling cases of technology-enabled abuse; 4) Legal professionals have identified structural weaknesses within the US legal system in handling cases of technology-enabled abuse, which can be mitigated with updated knowledge about technologies.

Our work makes the following contributions to the CHI community:

- We detailed legal professionals' knowledge and practices toward technology-enabled abuse in IPV.
- We identified the sociotechnical shortcomings of the current legal system in supporting victim-survivors in technology-enabled abuse.
- Grounded in our findings, we provided recommendations for future research, education and training on enhancing technical knowledge within the legal system, and technology design in better support of victim-survivors.

2 RELATED WORK

Combating IPV in HCI. Technology has been studied as a vector for abuse but also as a potential mechanism for support. A number of tools used for surveillance can be easily accessed by laypeople to enact IPV onto their partners [10, 15]. A lack of privacy due to GPS tracking, device monitoring, or IoT device capture creates the perception of an abuser's omnipresence [2, 25, 38]. However, technology may also be used as a tool to help victim-survivors find resources and communities [7]. For example, the Clinic to End Tech Abuse (CETA) in New York, as well as the Technology-Enabled Coercive Control Clinic in Seattle, are both organizations that provide assistance to those experiencing technology-enabled abuse [14, 40]. New technologies and avenues for support are also being explored.

For example, prior work has discussed the role, training, and involvement of customer support practitioners who encounter cases of technology-enabled abuse in the course of their work [40]. Other research has focused more on the invention of new technologies to prevent or mitigate the effects of technology-enabled abuse. One such technology is known as AirGuard, an anti-tracking software that identifies potential stalking and notifies the user [16]. Though false positives are possible, the majority of users reported never having received one, and most users reported feeling safer after using the app [16]. Overall, though technology can be used to abuse intimate partners, new research in HCI indicates that technologies also have the potential to support victim-survivors in new ways. Unlike prior work that primarily focuses on supporting victim-survivors themselves, our work is primarily concerned about how their supporters, i.e., legal professionals, could be better empowered to help victim-survivors from the perspectives of laws and technologies.

Legal Professionals and Technology-Enabled Abuse. Legal stakeholders are crucial in supporting victim-survivors of IPV, from providing legal counsel to helping victim-survivors gather digital evidence to evaluating that evidence in a legal case [18, 23]. Now, since IPV often includes technology-enabled abuse, effectively handling IPV cases requires an understanding and awareness of the capabilities of various technologies and their security and privacy properties, which could be misused by an abuser [32]. Unfortunately, very little is known about the preparedness of the legal profession and legal stakeholders when responding to cases of technology-enabled abuse—and prior work has indicated that there may be knowledge gaps [40]. For example, legal stakeholders such as judges do not have sufficient knowledge of technology to contextualize its involvement in cases of IPV [11]. Furthermore, not all forms of technology-enabled abuse are technically illegal, leaving a major gap in legal options for victim-survivors [34]. The potential presence of these gaps is concerning, given that legal advocacy can be even more valuable to victim-survivors when technology-enabled abuse is involved. For instance, documenting proof of technology-enabled abuse is one of the primary challenges that victim-survivors and advocates face when presenting their case in court, since the abuse is often invisible [33]; legal stakeholders should be equipped to help with this task. In this study, we address this research gap through a detailed account of legal professionals' knowledge and practices, or lack thereof, toward technology-enabled abuse in IPV.

3 METHODOLOGY

We conducted a 9-participant semi-structured interview study on legal professionals' knowledge and attitudes toward technology-enabled abuse. The study protocol was approved by our Institutional Review Board (IRB) and we obtained informed consent for research and audio recording from all interview participants. The interview protocol, study artifacts, participant demographics, and codebook are provided in the Appendix.

Recruitment and Screening. From April to August 2024, we recruited 9 participants, with the five of participants working from New York, and the others being from assorted states. To advertise our study, we contacted legal experts and IPV advocates in our

networks, shared information to relevant IPV and legal email lists, reached out to LinkedIn groups for legal professionals, and physically posted flyers in our university law school. We advertised our study as an interview about legal professionals' familiarity, experience, and knowledge of technology-enabled abuse in IPV.

Participants had to be at least 18 years old and either have handled or *could* handle cases involving technology-enabled abuse in IPV as part of their job. To ensure participants fit this criteria, interested legal professionals had to answer a screening survey (see Appendix B.3). The survey asked about their job title, what their work entails, and how often the legal professional takes on cases involving victim-survivors of IPV, as well as what devices said cases involved. At the end of the survey, we asked for their email address so we could invite them to our interview study. We invited 9 participants to be interviewed, of which the majority were attorneys. Table 2 contains the participants' demographic information.

Interviews. All 9 interviews were conducted remotely on Zoom and led by the first author. In a third of the interviews, the second author attended to take notes. Interviews lasted 40 minutes to an hour. We compensated participants with a \$40 Amazon gift card.

After getting informed consent for research and recording, we structured the interview questions in six sections. (1) First, we asked about participants' legal background and defined terms like "technology-enabled abuse" and "victim-survivor" using a cheat sheet with common types of technology-enabled abuse (see Table 1). For the purposes of the study, we defined technology-enabled abuse as abusive behavior that is enabled, facilitated, or exacerbated by the existence of technologies, and victim-survivor as the recipient of IPV. Toward RQ1, we then asked about legal professionals' knowledge toward the positive or negative roles of technology in IPV, as well as the training they have received or are aware of related to technology-enabled abuse. We requested their suggestions on how to improve these trainings. Then, to answer RQ2, we asked the legal professionals about the strategies they use to help victim-survivors. Finally, for RQ3, we asked about participants' expectations for different crucial stakeholders in protecting victim-survivors, including lawyers, judges, policymakers, etc., and their views on the efficacy of the current US legal system in protecting victim-survivors. The full interview protocol is attached in Appendix A.

Data Preparation and Analysis. All the interviews were audio-recorded and transcribed in English. The first author proofread the transcripts, ensuring the accuracy of the qualitative data. We followed Saldaña's [28] approach when conducting the qualitative thematic analysis. First, two researchers independently coded three transcripts. After reviewing and discussing the codes from each other, we created an initial codebook after reaching an agreement. Based on the initial codebook, each researcher coded three transcripts. The two researchers resolved any conflicts through several meetings. We identified data saturation [31] after interview 6 and proceeded to interview 3 more without finding any additional themes. The codebook is available in Appendix D.

Positionality Statement. Transparency about researchers' positions and identities in society, e.g., class, gender, and race, is crucial in qualitative research pertaining to vulnerable populations [29]. The first author of this work is a queer and trans white person

and victim-survivor. The rest of the research team consists of four cisgender women and one cisgender man. The identities of the team have helped us better relate to the subject of matter, i.e., technology-enabled abuse, as well as design context-sensitive interview questions.

Limitations. Our sample size was small due to the nature of qualitative work. The interviews relied on self-reported information from the participants, which may be subject to social desirability and cognitive biases. Despite this, we recruited legal professionals with varying levels of expertise around working with victim-survivors (as shown in Table 2). In addition, due to the small sample size, our work only covered a small number of legal professionals working with marginalized and vulnerable populations, such as immigrants, people of color, and LGBTQ+ people, who may be prone to more severe consequences and harms in technology-enabled abuse. Despite this, we propose relevant recommendations for future research in Section 5.1.

4 RESULTS

Legal professionals we interviewed were aware of multiple vectors for technology-enabled abuse, as well as ways that technology could be used to assist victim-survivors themselves (Section 4.1.1). Furthermore, seven of the legal professionals noted working with marginalized demographics as a part of their careers, indicating structural vulnerabilities that predispose marginalized groups to experiencing more acute forms of technology-enabled abuse (Section 4.1.2). While legal professionals employed a number of legal and technological practices in support of victim-survivors (Sections 4.2.1 & 4.2.2), they also expressed shortcomings in their current approach – gaps in education and training available to other professionals, a lack of resources to aid professionals handling cases involving technology-enabled abuse (Section 4.2.3), and structural weaknesses in the legal system preventing them from ensuring best outcomes for victim-survivors (Section 4.3).

4.1 RQ1: What do legal professionals know about technology-enabled abuse? How do they perceive it?

4.1.1 Abusers heavily rely on technologies to exert surveillance, harassment, and control. Through cases that involved technology-enabled abuse, the legal professionals learned about many different types of technologies exploited by abusers to surveil, harass, and control the victim-survivors. Specifically, technologies they had seen used for surveillance purposes include location tracking (e.g., GPS, Air Tag), malware (e.g., spyware, ransomware, device cloning, stalkerware), cameras, and shared/connected accounts for accessing a series of services (e.g., iCloud). For harassment, abusers often relied on intimate images/videos (acquired through hidden cameras, or deepfakes created with AI), social media platforms (e.g., doxxing victim-survivors' personal information on public platforms, online trolling, creating fake accounts to access and harass victim-survivors), messaging apps (e.g., vicious texts, blackmailing), and virtual phones. To control and manipulate victim-survivors, abusers managed victim-survivors' access to technologies, such as smashing devices and limiting their access to services that are vital

to their lifelines. An attorney specializing in cases of technology-enabled abuse, said: "I think phones are so important. Access to people, access to community is critical. And so I think ... survivors' phones are often their lifeline" (P6). All nine of the legal professionals emphasized how much the phone, as a specific technology, acted as both a lifeline and a source of danger if that lifeline was compromised. An abuser with access to a victim-survivor's phone could undermine many important functions of their life, such as employment, legal proceedings, and connections to loved ones. One professional described the end result of such abuse: "It creates a very unsafe feeling within you, so even when they're not there, they're there" (P2).

4.1.2 Marginalized and vulnerable populations find themselves at a greater risk of experiencing technology-enabled abuse. Eight legal professionals reported specific ways they had witnessed people with marginalized identities experiencing abuse differently than other demographics. People who are currently involved in legal proceedings, such as establishment of immigration status in the U.S., could have their legal proceedings interfered with by an abuser with access to their accounts. People who are undocumented fear being reported for their immigration status and experiencing state-enforced violence, and an attorney working in immigration law confirmed that "threatening people with disclosures of immigration violations, threatening them with "I'm going to get you deported" was a form of IPV she had seen (P1). Additionally, some immigrants experience language and literacy barriers that prevent them from accessing for both immigration and IPV, especially if devices they might otherwise use for translation are compromised. An attorney noted that an immigrant experiencing technology-enabled abuse may not report it "if their phone doesn't have their native language on it, if the instructions to report are not in their native language, if they're afraid to go to the police" (P4). All together, immigration status was mentioned across multiple interviews as a potential factor that could put someone at risk for experiencing technology-enabled abuse, or exacerbate existing technology-enabled abuse.

Legal professionals also discussed working with clients of a marginalized sexual orientation who experienced unique forms of technology-enabled abuse. For example, a victim-survivor experienced outing and doxxing by an intimate partner, a form of harassment targeted toward their marginalized identity facilitated through technology. Three attorneys mentioned forced outing as a form of abuse exacerbated by technology, since the information could reach far more people through the internet. Many cases involving technology-enabled abuse also overlapped with Title IX proceedings. One legal professional described marginalized groups, including "women, people of color, immigrants, and LGBTQ+ people," as "experiencing under-reporting" of IPV (P6). This compounded with the fact that technology-enabled abuse is also harder for many legal professionals to understand or empathize with places marginalized demographics at a greater risk of being underserved in the criminal justice system. The responses of the legal professionals seemed to indicate not only that marginality created unique ways that victim-survivors could experience abuse, but also limited the mechanisms for recourse they could engage in.

4.2 RQ2: How do legal professionals support clients who are facing technology-enabled abuse?

4.2.1 Legal professionals employ a number of practices to support victim-survivors and provide effective legal services. Legal professionals use a number of strategies to provide victim-survivors with the support they need, including education, safety planning, and mechanisms to keep the professionals themselves safe. Six legal professionals reported having to do more research to understand the mechanics at play, both technological and legal, in technology-enabled abuse cases. Due to the wide variety of technologies available, they frequently had to use outside resources like search engines. Seven of the legal professionals also indicated moving towards a network-based information-gathering system, reaching out to other professionals or clinics, and reading previous case files to better understand the technologies at play in technology-enabled abuse cases. Thus, resources like tech clinics and listservs with other legal professionals have become crucial to supporting victim-survivors facing technology-enabled abuse.

Furthermore, legal professionals emphasized the need to distance the victim-survivor from their abuser through safety planning, disposing and replacing technologies and accounts, and legally enforced distance-like orders of protection. One of the primary resources a legal professional said they lacked was "money," since they "would like to be able to offer solutions that involve people meeting their needs which costs money" (P1). They called for funding to provide victim-survivors with the material goods necessary to disentangle from an abuser, such as a new phone or a rental car to prevent tracking or surveillance. Finally, some professionals discussed the ways they keep themselves safe from being targeted by abusers, mainly by keeping their phone numbers private and their confidential information secure. This emphasis on practicing tech literacy among legal professionals allowed them to keep themselves safe from spam calls and stalking, but also keep their clients safe to prevent leakage of information. Two legal professionals discussed the availability of cybersecurity courses for attorneys, which covered topics like "how to secure your communications with clients," and how to "to keep our clients' information confidential and to protect it against access" (P6). This demonstrates that attorneys are receiving an amount of training in tech literacy as it relates to their practice and ethical obligations. However, these trainings did not include information about technology-enabled abuse, or security and privacy on the client-side.

4.2.2 Technologies empower victim-survivors to gather multimodal evidence, connect to resources and support more easily and affordably, and access technologies more safely. Despite the potential for abuse latent in most technologies, the legal professionals also described how technologies empowered victim-survivors to gather multimodal evidence (e.g., texts, photos, videos), connect to resources and support more easily and affordably (e.g., mental health therapies, physical transportation, safety planning), and access technologies more safely (e.g., apps identifying and removing their personal information online). Many legal professionals struggled to help their clients meet the requisite burden of proof when pursuing legal recourse, but technology offered a way to bridge that gap. The

main benefit of technology, identified by eight legal professionals, was the recording and evidence-gathering functions of technology. One attorney said "technology helps in holding people more accountable for less physical forms of abuse," and another claimed technology "gives cooperating evidence that this isn't made up" (P2; P3). Aside from evidence gathering and access to resources, though, most legal professionals indicated little knowledge about the other benefits technology could have in helping victim-survivors, with two of the legal professionals claiming they saw very little benefit in technology's ability to assist victim survivors beyond gathering evidence.

4.2.3 Legal professionals confess an urgent need for enhanced education and training on technology-enabled abuse. One of the major barriers legal professionals reported with regards to their ability to support victim-survivors was the lack of comprehensive education around technology-enabled abuse provided to legal professionals. Although two professionals reported receiving a sufficient education, they also noted it was because they specifically chose to seek it out, and that it was not available to general students seeking a degree in law. Seven legal professionals reported having received little or no training on technology-enabled abuse while in law school. Instead, the majority of their knowledge came from experience working with victim-survivors on cases of technology-enabled abuse. Professionals said that while some attorneys "associated with legal aid or another non-profit law firm" were the most aware, but the majority of attorneys or "your average small-town private lawyer" had "minimal" understanding of technology (P8). Nevertheless, some resources such as online courses and community-organized training enhanced their understanding of technology-enabled abuse. Six legal professionals called for more training on technology-enabled abuse for future legal professionals. However, they also noted potential limitations to said training, like the fact that the development of new technologies and the shifting legal status of technology-enabled abuse would make it more difficult to standardize a curriculum.

4.3 RQ3: What do legal professionals expect from the legal system and those responsible for helping victim-survivors of technology-enabled abuse?

4.3.1 A number of structural issues within the U.S. legal system lead to technology-enabled abuse being left unaddressed. Due to the nature of the U.S. legal system, legal professionals found technology-enabled abuse uniquely difficult to address in a legal context. One such reason was the high burden of proof required for victim-survivors to meet, both in a criminal context (beyond a reasonable doubt) and in family and civil court (preponderance of evidence). One professional said that "if your technology is being controlled by someone else, and that's the only avenue you have to corroborate your story, then you are always the one with the burden, and you may not be able to meet your burden" (P1). An abuser could interfere with legal proceedings by destroying evidence and preventing the victim-survivor from accessing resources through the legal system. Furthermore, new technologies (and thus, more mechanisms of abuse) develop faster than laws and legal processes

can keep up. Many mechanisms of abuse only become illegal and enforceable in court after years of abuse have occurred through the new technology. Finally, understanding technology-enabled abuse relies on a knowledge of technology that many within the legal system (i.e. police officers, judges, juries) simply lack. Many legal professionals struggled to convince other legal stakeholders of the impacts of technology-enabled abuse on victim-survivors, especially when more complex technologies were involved. One attorney summarized the issue, when referring to the courts and judges: "They don't use technology. And these are the decision-makers around how technology can be abusive. And if they're not well-informed or educated on it, then they're not going to get it" (P5).

4.3.2 Legal professionals expect stakeholders in the legal system to be trauma-informed, educated on technology, and empathetic towards victim-survivors. Legal professionals noted that many facets of the legal system were not informed about the ways that trauma can affect victim-survivors and their testimony. For example, law enforcement officials and attorneys who did not understand that trauma could distort memory, recall and testimony. One attorney described their expectations for judges and juries listening to testimony from victim-survivors, wanting them to keep in mind that "if things are disjointed...if things are not coming across picture perfect in the testimony, that doesn't mean that something didn't happen. It can be an effect of trauma" (P1). Six professionals reported that stakeholders were engaged in victim-blaming behavior, like questioning why the victim-survivor stayed with their abuser or berating the victim-survivor for disclosing sensitive information like passwords, account access, or explicit photos to their abuser. When discussing judges, multiple legal professionals believed that judges should be more informed about technology-enabled abuse, with one professional who administers technology-enabled abuse trainings noting that they "barely [saw] judges enter these trainings when there are trainings available" (P7). This lack of understanding carried over to professionals' expectations of law enforcement, as many noted both a lack of empathy towards victim-survivors and a lack of forensic knowledge about how to gather evidence of technology-based abuse. Empathy was a continuous theme, as many professionals believed that others within the legal system lacked understanding of how damaging technology-enabled abuse was in comparison to more visible forms of abuse, such as physical abuse.

5 DISCUSSION & CONCLUSION

This analysis of interviews with 9 legal professionals has revealed glaring gaps in the legal system in terms of addressing technology-enabled abuse. Although efforts to combat technology-enabled abuse have increased, there remains significant work to be done when it comes to preparing and educating legal professionals. Furthermore, due to the small sample size of our interviews, more in-depth work is needed to understand how legal professionals interact with victim-survivors experiencing technology-enabled abuse. Here, we present three primary recommendations based on our findings.

5.1 Conduct further research on the intersection of marginality and technology-enabled abuse.

The interviews we conducted revealed patterns of abuse that uniquely impacted those with certain identities, such as immigrants, people of color, and LGBTQ+ people. However, the interviews only captured a small sliver of the legal profession with varying levels of expertise around working with marginalized demographics. More research, like work from Brown et al., focused on Indigenous victim-survivors [3], is needed to explore the connection between experiencing violence—especially violence through technology—and holding marginalized identities. Investigating both the experiences of the legal professionals who work with victim-survivors, as well as the experiences of marginalized victim-survivors themselves, is crucial for understanding how abuse can acutely or uniquely affect some more than others. Additional work should be done around immigrant populations specifically, as there appeared to be a high level of overlap between victim-survivorship and immigrant identity, as well as unique barriers to accessing resources. Understanding the role of immigration is of key importance as well to ensure professionals inside and outside the legal system can provide quality and accessible IPV services to individuals who may struggle to access it.

5.2 Promote education around technology-enabled abuse for those operating inside the legal system.

Many legal professionals stated that they lacked adequate education for addressing cases of technology-enabled abuse. Furthermore, they spoke to a general lack of education around technology in those operating within the legal system, such as law enforcement and judges, echoing findings from prior work (e.g., [11]). Promoting education for individuals who may come into contact with victim-survivors is key to ensuring a holistic understanding of the multiple avenues through which abuse can be enacted, as well as the severe harm that technology-enabled abuse can cause. Additionally, educating lay people on technology, privacy, and security is crucial, as anyone can become a victim-survivor of technology-enabled abuse, know a victim-survivor, or be selected on a jury to evaluate such cases.

5.3 Explore avenues for technology to benefit both victim-survivors and professionals.

Although prior research has covered the potential of technology to be a transformative force in the lives of victim-survivors [16, 40], allowing them to discover and document abuse, most legal professionals were skeptical as to the positive uses of technology in these cases, however, some professionals noted technologies they believed could be useful, such as AI-generated content detection and anti-tracking software. We emphasize that additional technologies, like virtual safety-planning tools that help victim-survivors recognize and mitigate technology-enabled abuse [8, 27], should be developed further. Such technologies could provide valuable resources to legal professionals in terms of helping them keep their clients safe and distinguish between legitimate and generated

evidence. Technology also has potential to benefit the legal professionals who work with victim-survivors. Since some professionals mentioned using anonymizing tools to protect their personal information when contacting clients, exploring avenues for legal professionals to keep themselves safe when taking on IPV cases may also be fruitful. It is necessary to explore how technologies could prevent, address, or mitigate the effects of IPV, since technologies that create more avenues for perpetrating it are being created concurrently. Separate, but related, work could also discuss technologies used by legal professionals to facilitate their client support and privacy obligations. Further research is needed to develop ways new technologies could benefit victim-survivors and professionals alike.

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A INTERVIEW PROTOCOL

A.1 Introduction and Foundational Understanding

- (1) Could you share your legal background?
- (2) What is your experience working with victim-survivors of IPV?
- (3) What is your role in interactions with victim-survivors?
- (4) What types of technology-enabled abuse do you encounter in your occupation?
- (5) What kinds of technologies are involved in these cases?
- (6) What types of legal proceedings are typically involved with technology-enabled abuse cases?

A.2 Professionals' Attitudes and Knowledge Toward the Role of Technology in IPV

- (1) On the negative side, how do you think technology could be used to exacerbate abuse among domestic partners?
 - (a) What types of technologies are or could be most commonly used to abuse partners?
 - (b) What capabilities of these technologies are or could be mostly involved in such abusive behavior?
- (2) On the positive side, how do you think technology could be used to help the victim-survivors of domestic violence?
 - (a) What types of technologies are or could be most commonly used to help the victim-survivors of domestic violence?
 - (b) What capabilities of these technologies are or could be mostly involved in such use cases?
- (3) In what ways has technology impacted the way you practice law?

[Table 1 was then shown to the participants. Participants could reference the sheet throughout the rest of the interview]

A.3 Professionals' Preparedness Toward Technology-Enabled Abuse Cases

- (1) How do you prepare before working with victim-survivors on technology-enabled abuse cases?
- (2) What types of training, if any, have you received or are available for legal professionals to receive in order to prepare them to handle technology-enabled abuse cases?
- (3) Do you feel your legal education has prepared you for handling cases involving technology-enabled abuse?
 - (a) If yes, what are the specific preparations?
 - (b) If not, what do you think should be added to the curriculum?

A.4 Strategies and Practices When Helping Victim-Survivors

- (1) What kinds of professional services do you offer or could you offer to victim-survivors of technology-enabled abuse?
 - (a) How do you decide what services to offer?
- (2) What kinds of services do you outsource to other personnel or organizations?
 - (a) Who do you outsource to?
 - (b) How do you decide who is best to provide the services?

- (3) Please answer the following questions based on your experience with technology-enabled abuse cases.
 - (a) After taking on the case, what steps do you take to help the victim-survivors? Take us through the process.
 - (b) Where do you go to find information about managing this type of case?
 - (c) What types of advice do you provide to victim-survivors of technology-enabled abuse?
 - (d) How effective do you believe this advice is? Why?
 - (e) What signs/evidence of technology-enabled abuse could be provided to you?

A.5 Professionals' Assessment of Legal Mitigations

- (1) What are the strengths of the US legal system in dealing with cases of technology-enabled abuse?
- (2) What are the weaknesses of the US legal system in dealing with cases of technology-enabled abuse?
- (3) Are you aware of initiatives by other legal professionals to support victim-survivors of technology-enabled abuse?
- (4) How do you expect the US legal system to be improved to better protect the victim-survivors of technology-enabled abuse?

A.6 Professionals' Expectations Toward Protecting Victim-Survivors of Technology-Enabled Abuse

- (1) Have you ever used any emerging technologies to support victim-survivors? For example, generative AI such as Chat-GPT.
- (2) How do you believe emerging technologies such as generative AI can be used to help or harm victim-survivors?
- (3) What resources do you expect legal professionals to have access to when dealing with technology-enabled abuse cases?
 - (a) What technologies or features would you like to have access to when dealing with technology-enabled abuse cases?
- (4) What types of technologies do you envision would help victim-survivors?
- (5) I'm going to go down a list of stakeholders and have you evaluate their responsibility in protecting victim-survivors of technology-enabled abuse.
 - (a) What do you expect from attorneys?
 - (b) What do you expect from judges?
 - (c) What do you expect from shelters and victim service providers (VSPs)?
 - (d) What do you expect from law enforcement?
 - (e) What do you expect from the victim-survivors?
 - (f) Are there any other responsible stakeholders you can think of?

B STUDY ARTIFACTS

B.1 Device Abuse Cheatsheet

Table 1 shows the technology-enabled abuse cheatsheet we gave to participants during interviews, to ensure a shared understanding.

B.2 Consent Form

Title of Research Study: Investigating Legal Professionals' Knowledge and Attitudes Toward Technology-Enabled Abuse in Intimate Partner Violence

Campus IRB Protocol ID: 2024-0216

Key Information and Introduction:

This research study is conducted by researchers Robin Koshelev, Jessie Cao, Danielle Park, and Marvin Tai, and their advisors, Dr. Pardis Emami-Naeini of the InSPire Lab at Duke University, Sophie Stephenson of UW Madison.

Why is this study being done?

This study is being done to gauge the level of familiarity, experience, and knowledge that legal professionals have when it comes to intimate partner violence (IPV) that is perpetuated through modern technology, or technology-enabled abuse.

What will I be asked to do?

You will be asked to participate in an audio recorded interview to discuss your theoretical knowledge of technology-enabled abuse and your experiences with handling cases related to technology-enabled abuse. We will also ask for basic demographic information. The interview will last approximately 60 minutes and will take place online via DukeZoom. You can choose not to answer any of the questions you are asked and can stop the interview at any time.

What are the risks and inconveniences and benefits of this study?

The subject of IPV and abuse is a sensitive subject that may trigger discomfort or upset, even for professionals that navigate such cases. We acknowledge this can be a difficult topic to discuss, and we encourage participants to skip questions, take a break, or leave the study when needed.

Second, there may be a risk to the confidentiality of the participants' clients, as participants will be asked to discuss their experiences with cases of technology-enabled abuse. To protect your and any victim-survivors' privacy and safety, we will redact direct identifiers from the transcripts, and remove all identifying information about victim-survivors of tech from the study data.

Compensation:

Participants will be compensated with a \$40 Amazon Gift Card at the end of the hour long interview.

Confidentiality:

- All answers will be kept confidential and direct identifiers information of participants will not be shared with anyone outside the research team. Individual level identifiers (e.g., demographic data) may

be reported in aggregate. Any identifying information about clients of participants will be removed from the study data.

- Audio recordings will be made of the interview. Only the researchers will have access to these recordings. The researchers will transcribe the interview by listening to the recording. The transcription will be saved but the recording will be destroyed. No identifying information will be included in the transcription.
- Data not linked to your identity may be shared with other researchers outside of Duke University, made public or used for future research purposes.

Voluntary nature of participation:

Participation in this study is voluntary. You can choose not to participate at any point. If you agree to be in the study, you may withdraw at any time for any reason.

Whom do I call if I have questions or problems?

For questions about the study, contact Robin Koshelev at robinkoshelev@duke.edu, or advisor Pardis Emami-Naeini at pardis@cs.duke.edu. For questions about your rights as a participant in this research study, contact the Duke University Campus IRB at 919-684-3030 or campusirb@duke.edu. If writing to the Campus IRB, please reference protocol ID #2024-0216

Do you agree to take part in the study?

May I begin recording the interview?

B.3 Screening and Demographic Survey

B.3.1 Consent. We are a team of researchers at Duke University and University of Wisconsin-Madison investigating legal professionals' knowledge and practices regarding technology-enabled abuse (e.g., spying on a domestic partner using security cameras). In this short screening survey, we will ask you a few questions to determine your eligibility to participate in our main interview study. If you are eligible to participate in our main interview study, we will email you in the next few days to schedule the remote interview session.

Data from this survey will be stored securely and kept confidential. Your participation in this study is voluntary. You may withdraw your participation at any time.

In order to participate, you must be a legal professional, defined as anyone that has a career relating to the legal system, over the age of 18 in the United States. We expect that this survey will take about 5 to 10 minutes to complete.

For questions about this study, please contact Robin Koshelev at robinkoshelev@duke.edu. For questions about your rights, please contact the Duke University Campus IRB at 919-684-3030 or campusirb@duke.edu. It will be helpful if you include protocol ID #2024-0216 in your communication.

- (1) I affirm that I am over the age of 18. I affirm that I am currently located in the United States. I affirm that I have read this consent form, and agree to participate in this screening survey.

B.3.2 Demographics.

- (1) What is your age?

Ownership-based access means using access to...	Account or device compromise	Harmful messages or posts	Exposure of harmful information
Physically prevent use of device/account (e.g., to call police)	Monitor victim-survivor through surveillance technology (legal and illegal)	Call/text/message victim-survivor from identifiable account(s)	Threaten to expose information to blackmail victim-survivor (e.g., into not reporting the abuse)
Digitally control access (e.g., turn off Internet, decrease temperature of smart thermostat)	Steal victim-survivor's info (e.g., contact numbers, bank accounts)	Call/text/message victim-survivor from anonymized account (e.g., spoofed phone number, fake social media profile)	Post private information ("doxing") about victim-survivor (e.g., HIV status, sexual orientation)
Physically destroy device	Delete victim-survivor's data (e.g., evidence, removes friends, deletes messages)	Post public content to humiliate/harm victim-survivor (e.g., threats of violence on social media)	Generate and/or share intimate images without consent
Track victim-survivor's location, monitor usage (text, email, social media), watch victim-survivor through camera	Lock victim-survivor out by changing password, setting up 2-factor authentication, etc. Impersonate victim-survivor using their accounts to cause them harm		

Table 1: A table describing the ways technology could be used to abuse intimate partners. Shown to participants in the course of the interview as reference.

- (2) What is your gender identity?
- (3) What is the highest level of education you have completed?
- (4) What best describes your employment status over the last three months?
- (5) Which most accurately describes your career?
- (6) What is your city and state of employment?

B.3.3 Screening.

- (1) What is your job title? What does it entail?
- (2) If you are a social worker, have you had experience in the legal field?
- (3) How often do you take on cases involving victim-survivors of IPV?
- (4) Technology-enabled abuse is abusive behavior that is enabled, facilitated, or exacerbated by modern technologies. Have you ever had a case where your client had experienced technology-enabled abuse?
 - (a) Approximately how many of these cases have you seen?
 - (b) What kind of technologies did these cases involve?

C DEMOGRAPHIC TABLE

Age	Gender	Degree	Work status	Career
18-29: 2	Male: 0	Graduate/professional degree: 7	Working full time: 9	District attorney: 1
30-39: 4	Female: 9	Bachelor degree: 2	Working part-time: 0	Public interest attorney: 5
40-49: 3	Nonbinary: 0			Paralegal: 1
50-59: 0				Victim Advocate: 1
				Defense attorney: 1

Table 2: A table describing the age, gender, education, work status, and career of study participants. Data collected during screening. Some participants opted to type in their own career, and for the sake of conciseness we condensed "victim's rights attorney," "nonprofit attorney," and similar careers under the umbrella of "public interest law." Location of practice has been redacted to preserve the anonymity of the participants.

D CODING

Code	# Times Used
legal background	12
professional services	40
resources available to victim-survivors	43
devices used in technology-enabled abuse	62
devices used in technology-enabled abuse: tracking	20
devices used in technology-enabled abuse: electronic locks or keypad locks	1
devices used in technology-enabled abuse: malware (spyware, ransomware, etc.)	6
devices used in technology-enabled abuse: cameras	10
devices used in technology-enabled abuse: cloning	2
devices used in technology-enabled abuse: social media	17
devices used in technology-enabled abuse: messaging	15
devices used in technology-enabled abuse: hacking	12
devices used in technology-enabled abuse: phone calls	5
capabilities of technology	88
mechanism of abuse	82
mechanism of abuse: restricting access to technology	4
mechanism of abuse: location tracking/stalking	18
mechanism of abuse: interfering with legal proceedings	2
mechanism of abuse: accessing victim-survivor's account	12
mechanism of abuse: disseminating explicit images nonconsensually	8
mechanism of abuse: online harassment	14
mechanism of support	45
mechanism of support: connecting victim-survivors to resources/services with technology	12
mechanism of support: expanding the reach of support agencies with remote communication	10
mechanism of support: gathering evidence	19
mechanism of support: making victim-survivors' access to tech safer	7
victim-survivors' mitigation strategies	20
practices when helping victim-survivors	87
practices when helping victim-survivors: trauma informed interviewing	9
practices when helping victim-survivors: severing ties to abuser	15
practices when helping victim-survivors: educating oneself	15
practices when helping victim-survivors: practicing tech safety	5
practices when helping victim-survivors: legally enforced distance	16
legal professionals' education and training	47
legal professionals' education and training: online courses/resources	1
legal professionals' education and training: no specific training for tech-enabled abuse	16
legal professionals' education and training: learning from co-workers	1
legal professionals' education and training: interview training	1
legal professionals' education and training: offline courses/resources	18
recommendations	40
limitations in resources available to victim-survivors	39
referrals	34
resources for professionals	23
evidence of technology-enabled abuse	36
strengths of US legal system	13

Table 3: The first part of our central codebook, including main and sub-codes, and the number of times they were coded in the transcripts.

Code	# Times Used
weaknesses of the US legal system	51
weaknesses of the US legal system: burden of proof hard to meet	10
weaknesses of the US legal system: technology develops faster than regulations around it can	8
weaknesses of the US legal system: lack of empathy	9
initiatives to support victim-survivors of technology-enabled abuse	28
harms of emerging tech	18
expectations	63
expectations: attorneys	11
expectations: judges	9
expectations: service providers	10
expectations: police	1
expectations: victim-survivors	11
expectations: law enforcement	8
expectations: policymakers	8
expectations: victim-survivors' support system	1
expectations: tech companies	2
challenges for legal professionals	43
lack of understanding of technology-enabled abuse	45
specific demographics being affected by abuse	29
specific demographics: immigration status	19
specific demographics: sexual orientation	3
specific demographics: gender identity	4

Table 4: The second part of our central codebook, including main and sub-codes, and the number of times they were coded in the transcripts.